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Poster Proceedings



Prevention Through **Partnerships**

Saturday, May 20, 2017

Medical Student/Resident Poster Competition 1

No. 1

Neuroleptic Malignant Syndrome: A Review of Three Cases and Discussion of the Literature

Poster Presenter: Michael S. Peroski, D.O.

Co-Author: Marissa Flaherty, M.D.

SUMMARY:

Neuroleptic malignant syndrome (NMS) is an idiosyncratic reaction to dopamine (D2) receptor blockade that occurs in 0.02–2.44% of patient exposed to typical antipsychotics and has also been documented with exposure to other D2 blocking agents (i.e., atypical antipsychotics, metoclopramide, etc.). It is most often characterized by a pentad of symptoms including fever, dysautonomia, rigidity, altered mental status, fever, and derangements in laboratory studies. While NMS is classically thought to consist of this pentad of symptoms, there are atypical, less severe presentations of NMS documented in the literature. Despite this being a relatively rare phenomenon, it is life-threatening, and when it does occur, early recognition and treatment can make a significant difference in patient outcomes. This poster will summarize three cases of NMS of varying severity and will use them as a lens to discuss the pathophysiology of NMS, risk factors, diagnosis, and evaluation and management of a patient with NMS. In each of these cases, antipsychotic medications were discontinued, and the patient was managed with either supportive care alone or supportive care with the addition of bromocriptine. The literature on NMS will be reviewed, and special attention will be given to treating NMS itself, strategies for reintroducing antipsychotics in patients with NMS, and managing acute agitation in patients with NMS in whom antipsychotics cannot be used.

No. 2

Frontotemporal Dementia and Stimulant Use: A Case Report

Poster Presenter: Samuel Kehrman

Co-Author: Samuel A. Neuhut, M.D.

SUMMARY:

Mrs. S., a 53-year-old Pakistani-American female with a 10-year psychiatric history of an unspecified neurodegenerative disorder and schizoaffective disorder, depressed type, presents to the psychiatric consult service with worsening disinhibition, bizarre and aggressive behavior, self-neglect, and depression, along with progressive decline in function. Per the family, the patient had become more verbally and physically violent, had been hearing voices, had become socially withdrawn, and had not bathed in the past month. She demonstrated mood lability and dysthymia. On prior admissions, she demonstrated focal right-sided ataxia; on this admission, she was wheelchair bound. Her CT scan showed moderate to advanced central and cortical atrophic changes for the patient's age with mild changes of ischemic leukomalacia likely secondary to microvascular disease. Her outpatient MRI suggested frontotemporal dementia. She was admitted to the inpatient psychiatric service and was re-started on Zyprexa 2.5mg by mouth at bedtime, Celexa 10mg by mouth daily and Depakote 500mg twice daily by mouth, which had shown minimal benefit during her previous admissions. We initiated a trial of methylphenidate 5mg twice daily by mouth to address her impulsivity and disinhibition. Over the course of her hospital stay, she became less disinhibited, more alert, more cooperative and less aggressive. It is often challenging to improve impulsivity and aggressive behavior in patients with neurodegenerative disorders. In this poster, we discuss the evidence for and efficacy of psychostimulant medication therapy to treat symptoms of disinhibition and to improve impulse control and mood in patients with frontotemporal dementia.

No. 3

Olanzapine for Intractable Nausea and Vomiting Associated With Major Depression

Poster Presenter: Christopher F. Ong, M.D.

Co-Author: Mahdi Razafsha, M.D.

SUMMARY:

Background: It is known that patients with gastrointestinal symptoms such as nausea and vomiting are at increased risk of suffering from psychiatric disorders such as depression. Olanzapine is an atypical antipsychotic that blocks multiple

neurotransmitters, including dopaminergic (D1, D2, D3, and D4), serotonergic (5HT2a, 5HT2c, 5HT6, and 5HT3), adrenergic (α 1), histaminergic, and muscarinic receptors. With several of these neurotransmitters involved in nausea and vomiting, olanzapine is being used for chemotherapy-induced emesis refractory to standard antiemetics. However, no studies have demonstrated the use of olanzapine in treatment of idiopathic nausea and vomiting associated with depression. **Case:** We present the case of a 57-year-old male who reported symptoms of major depressive disorder accompanied with severe suicidal ideation. He was diagnosed with gastroparesis via extensive gastrointestinal (GI) workup, including gastric emptying study, CT scan of abdomen and upper GI endoscopy. He had tried several antiemetic and promotility medications, such as metoclopramide, azithromycin, erythromycin, ondansetron, promethazine, prochlorperazine, pantoprazole, scopolamine, and domperidone, with little to no improvement. The patient and his wife indicated no prior history of depression, and they both thought the depressive symptoms and suicidal ideation were related to his intractable nausea. The patient also endorsed symptoms of anxiety in the form of pacing and irritability, especially when nausea was severe. Mirtazapine was started to help with symptoms of depression and anxiety, up to 45mg nightly. After mild improvement, the patient's symptoms recurred to the point that he was admitted to a psychiatric hospital. Mirtazapine was switched to venlafaxine, and the patient received nine treatments of bilateral electroconvulsive therapy (ECT). After a brief period of remission, the patient's depressive symptoms returned to the point that he had to be readmitted multiple times due to suicide attempts associated with intractable nausea. After several treatment failures, we made the decision to start olanzapine 5mg nightly. Several days afterward, the symptoms of nausea and vomiting significantly improved. On his follow-up visit four weeks later, the patient reported no symptoms of depression nor suicidal ideation. His wife commented that his depressive symptoms were "nonexistent" and found that he was no longer pacing around the house. The dose of olanzapine was eventually increased to 5mg twice daily to eliminate symptoms of nausea. The patient's depression remains in remission to this day.

Conclusion: Patients with concomitant nausea and depressive symptoms present unique treatment challenges. As the body of evidence continues to grow regarding off-label use of olanzapine for intractable nausea and vomiting, olanzapine's innate ability to treat depression in the context of severe nausea and vomiting should be taken into consideration.

No. 4

On Doctoring and Diapering: Reviewing the Effects of Parenting on Resident Burnout

Poster Presenter: Natalie Sous

Co-Author: Rashi Aggarwal, M.D.

SUMMARY:

Background: An increasing number of medical residents are becoming parents while completing their training. As burnout rates are high among residents, it is important to consider the impact of raising a family on resident burnout. **Objective:** Highlight what is known about the effects of parenting on resident burnout. **Methods:** A literature review was completed on PubMed by using the keywords "parenting AND residency" and "residency AND burnout." We also cross-checked reference lists cited in existing articles. The research was limited to English-language publications. **Results:** Twenty-five articles were reviewed concerning the experience of parenting during residency. Of these articles, 18 were quantitative analyses, three were qualitative studies, one was a literature review, and three were opinion pieces. Not all of the articles looked at burnout specifically. Some studied factors such as depression, depersonalization, humanism, emotional exhaustion, and work satisfaction among residents. Most of the articles focused on residents in a particular specialty, including internal medicine, psychiatry, family medicine, and surgery. Results regarding the impact of parenting on resident burnout were mostly positive. Some studies reported lower burnout scores among residents with children compared to those without children. Studies also reported lower levels of depersonalization, depression, emotional exhaustion, and cynicism among residents with children, which could be protective against burnout. One study also found job satisfaction to be higher among residents with children; however, when

stratified for sex, this finding was only significant in male residents. Qualitative analyses highlighted the challenge residents with children face in balancing their work and home obligations. However, residents with children also emphasized that parenting brought happiness and fulfillment to their lives, despite the difficulties. **Conclusion:** The effect of parenting on resident burnout requires further exploration. It appears parenting in residency is mostly protective against burnout; however, there is some evidence that this is only found in male residents. Further studies would assess burnout among residents with children after controlling for gender.

No. 5
Predictors for Psychiatric Comorbidity in Patients With Hypothalamic Hamartoma and Epilepsy

Poster Presenter: Zachary Killeen

Co-Authors: Raymond Bunch, John Kerrigan

SUMMARY:

Background: Hypothalamic hamartoma (HH) is a congenital benign tumor that arises from the ventral hypothalamus. These lesions vary in size and region of attachment. The pedunculated form is associated with endocrine dysfunction, while the sessile subtype consistently produces cognitive impairment, psychological disturbances and epilepsy. Epilepsy almost always begins with gelastic (laughing) seizures, but often progresses to multiple other seizure types, which are refractory to medication management. Psychiatric comorbidity, specifically mood lability, aggression and rage attacks, are known as common and frequently disabling features of HH associated with epilepsy. Patients have poor frustration tolerance with excessive reactivity to relatively minor stimuli, at times demonstrating destructive behavior and aggressive features. Predictive clinical features that are associated with significant psychiatric comorbidity in this population have not yet been identified. **Methods:** Retrospective individual case-based analysis from existing literature dating between 1988 and 2014 was gathered via PubMed and Cochrane database searches. The keywords hypothalamic, hamartoma, behavioral, and aggression were used to locate articles with the primary inclusion criteria: intractable epilepsy and psychiatric comorbidity. Full

text analysis was completed on 34 studies, producing 11 included papers and 109 total patients. Patients were grouped into cohorts C1, with aggression (N=44), and C2, without aggression (N=65). The following clinical features were evaluated: gender, mean age at surgery, mean age at seizure onset, seizure type and frequency, presence of precocious puberty, and presence of intellectual disability. Not all clinical features were reported for all identified cases. **Results:** Clinical factors found to have a positive correlation with psychiatric symptoms included male gender (C1: 38 male and six female; C2: 45 male and 20 female; $p=0.043$), mean age at surgery (10.8 years versus 15.1 years; $p=0.015$), mean age at seizure onset (26.5 months versus 69.8 months; $p=0.008$), and presence of intellectual disability (C1: 23 yes and six no; C2: 31 yes and 30 no; $p=0.012$). Conversely, clinical features of seizure type, seizure frequency, and presence of precocious puberty did not demonstrate a significant association ($p>0.05$). **Conclusion:** The clinical features of gender, mean age at surgery, mean age at seizure onset, and presence of intellectual disability may have positive predictive value for significant psychiatric symptomatology in patients with HH and epilepsy. These results may lead to additional insights into the basic mechanisms responsible for psychiatric symptoms in these patients and may also be useful for anticipating and managing clinical care in this population. Further investigation into the behavioral features of these patients is warranted to improve outcomes.

No. 6
Residents With Presence: The Role of a Brief Experiential Mindfulness Curriculum in Promoting Resident Wellness

Poster Presenter: Alexandra E. Hedberg, M.D.

Co-Authors: Herbert M. Hedberg, Elaine O. Cheung, Ph.D.

SUMMARY:

A growing body of medical literature on mindfulness practice promises utility for both patients and practitioners. Research on the benefits of mindfulness practice for physicians is extensive—mindfulness training not only improves quality of health care delivery but also mitigates physician

burnout. There is little data on the efficacy and feasibility of incorporating mindfulness curriculum into residency training. In this poster, we discuss a pilot program at the Department of Psychiatry and Behavioral Sciences at Northwestern Feinberg School of Medicine. Eighteen psychiatry residents ranging from PGY-2 through PGY-4 were participants in a half-day onsite meditation retreat as part of their regularly scheduled didactic curriculum. This mini retreat was followed by weekly elective 30-minute refresher sessions for one month. Self-report surveys evaluating perceived stress, self-compassion, burnout, mindfulness, and barriers to practice were filled out prior to the retreat and at one-month follow-up. At the one-month follow-up, residents reported increased mindfulness ($t(13)=-2.44$, $p=0.029$) and greater meditation frequency ($t(13)=-3.22$, $p=0.007$) relative to baseline. There were no observed changes in perceived stress, self-compassion or burnout as reported in larger, more robust studies of physician meditators. Our data are limited by the design of this small pilot study, but our findings suggest that psychiatry trainees can and do utilize mindfulness skills. Further scholarly attention is necessary to determine what constitutes an optimal exposure to mindfulness in psychiatry residency training so as to make a meaningful impact on resident wellness.

No. 7
Managing Health Anxiety in a Psychotic Patient With Prior Experience as a Registered Nurse

Poster Presenter: Lisa Herrington

Co-Authors: David M. Oliver, M.D., Laura F. Marrone, M.D., Heather Mak

SUMMARY:

A 51-year-old Caucasian female with past psychiatric history of cannabis-induced psychotic disorder presents to the psychiatric consultation-liaison service with paranoid delusions that her husband was directing a conspiracy to kill her. She believed her husband planted toxic mold in her home, causing her a serious lung disease. She expressed multiple somatic complaints throughout her hospital stay and feared having a significant illness. Her treatment was complicated by her prior experience as a registered nurse at the hospital where she was admitted for psychiatric care. This predisposed providers to

regard her as a very important person (VIP), in this case a medical caregiver admitted to her own institution. There is some thought that VIP patients receive suboptimal medical care due to caregiver dysfunction arising from personal awe. The patient demanded certain diagnostic tests and treatments that were deemed inappropriate by her providers, which damaged rapport as she felt her nursing experience was not valued. She was particularly hypersensitive to side effects from various antipsychotics, further limiting treatment options. Validating her experience of somatic symptoms without discrediting her medical judgment proved a difficult balance in preserving the therapeutic alliance, particularly in a VIP patient prone to delusional thinking.

No. 8
Evaluation of an ECT Simulation Course in Psychiatric Residents

Poster Presenter: Leanne Martin, M.D., M.Sc.

SUMMARY:

Background: Learning electroconvulsive therapy (ECT) is an integral part of a psychiatric training program and is a skill that many practicing psychiatrists use on a daily basis. Traditionally, ECT is learned through didactic teaching and direct observation. However, this method of teaching could be improved by using simulation technology. Simulators have been used in other area of medicine such as surgery, trauma and gynecology and have become vital in teaching residents skills outside of a clinical environment. This is the first year where simulators have been used in psychiatry at Memorial University. **Objective:** This study answered the following research question: How satisfied are psychiatric residents with an ECT simulation course, and do they believe it helps improve their knowledge level and skill of ECT? **Methods:** An ECT simulator course was conducted over a two-day period for psychiatric residents at Memorial University in Newfoundland, Canada. The course involved learning the theoretical knowledge of ECT, the process of informed consent, and risks and benefits of ECT. Furthermore, an ECT simulator was used to practice and learn the technical skill of ECT. Residents completed matched pre- and post-course self-assessments consisting of 11 statements

assessing three areas: knowledge, technical skill and overall expectations/satisfaction with the course. Statements were scored using Likert scales ranging from 1 to 10. Non-identifying codes were used to match pre-course and post-course assessments. All data were assessed for normal distribution. Pre- and post-course composite ratings were compared using paired t-tests. Between-group differences were assessed using one-way ANOVA. **Results:** In total, 13 residents completed the pre-course self-assessment, and 10 residents completed the post-course self-assessment. One-way ANOVA did not identify any differences among postgraduate years in mean scores in any of the 3 areas (knowledge, skill, expectations) ($p>0.5$). There was a significant difference in knowledge level in pre- and post-self-assessments ($p=0.001$), as well as technical skill level in pre- and post-self-assessments ($p<0.001$). There was no significant difference in the expectation/satisfaction level of the course in the pre- and post-self-assessments ($p=0.20$). **Conclusion:** There was significant improvement in residents' subjective knowledge level and technical skill in ECT, with technical skill level being more improved than knowledge level. Overall, residents had high expectations of the course and were satisfied with their learning. To our knowledge, this is the first study investigating the satisfaction of an ECT simulation course and whether it helped improve the skill and knowledge level in psychiatric residents. This could pave the way for future research studies on simulation training in psychiatry and contribute to medical education research in psychiatric residency training programs.

No. 9
Transgender Health: Assessing Residents' and Fellows' Medical Knowledge and Personal Comfort When Working With Transgender Patients

Poster Presenter: Jordan M. Howard, M.D.

SUMMARY:

There are significant shortcomings in the quality of health care being delivered to transgender patients, resources, support and compassion among the many. We find many licensed health care providers are unaware of the medical and psychological issues unique to this patient population and may even defer care on the basis of personal comfort. Partly,

this limited clinical knowledge and personal comfort level can be credited to inadequate education and training during medical school and residency. In this study, we submitted online surveys to over 1,300 residents and fellows doing their medical training in Atlanta, GA, to assess their general knowledge, training experience and personal comfort level when delivering care to transgender patients. The results and conclusions from the study reflect what is needed to develop a tailored training curriculum for residents and fellows who are expected at one point in time to work with transgender patients. The curriculum aims to focus on proper history taking, bedside manners and treatment planning. In doing so, we hope to structurally prepare future medical providers to be competent, informed and sensitive providers to the transgender community.

No. 10
Internet Addiction and Comorbid Lifestyle Variables Among Medical Professionals

Poster Presenter: Gerald D. Schmidt, M.D.

SUMMARY:

Personal computers, smartphones and other consumer electronics have made accessing the Internet easier than ever—as of 2015, 46.4% of the world's 7.26 billion people are Internet users. It is therefore essential to understand how misuse can interfere with our everyday lives. Our study looked at a sample of American military medical students, graduate nursing students and medical residents to determine the proportion of individuals affected by Internet addiction (IA) as well as comorbid lifestyle variables. Based on our sample, rates of IA addiction among medical providers early in their training is lower than the general public (5.7% versus 8.1%) Multiple variables were significantly associated with Internet addiction, including decreased rates of academic performance and increased videogame use. The medical community represents a community that, despite having a low incidence of IA, may still suffer from the more extreme consequences of IAD. Decreased executive function as a result of IA may predispose the effected to poor clinical efficacy and patient outcomes. The association with poor academic performance, psychiatric illness and aggressive behaviors is also cause for concern. This would further justify the

need to assess patient outcomes as they relate to IA among care providers, specifically those in later phases of their careers as patient interaction becomes more common and independent. Special attention must be placed on aberrant technology-based behaviors in an attempt to best create a curriculum for IA-based intervention for students and health care providers.

No. 11

Anterograde and Retrograde Amnesia After a MVA: A Replication of H.M.'s Pattern of Memory Loss Without Structural Lesions on Head Imaging

Poster Presenter: Carol Lim

Co-Authors: Tolulope Olupona, M.D., Ayodeji Jolayemi, M.D., Patrice Fournon, Sidiki Dabo, M.D., Evaristo O. Akerele, M.D., M.P.H., Leon P. Valbrun, M.D.

SUMMARY:

Background: The famous case of Henry Molaison (H. M.) has been pivotal to understanding the human brain and has provided an important scientific framework for the organization and distribution of memory functions, as well as theories involving memory consolidation, storage and retrieval. In this poster, we present a similar case observed on our inpatient unit. **Case:** This is the case of a 44-year-old male, who claims to be a neuropsychiatrist, presenting with anterograde and retrograde amnesia with preserved general semantic memory following a motor vehicle accident. He lost personal identity in addition to autobiographical memory and his native language, but with retention of his secondary language, English, and extensive medical knowledge. Interestingly, the pattern of his memory loss closely resembles that of the famous case of H. M., who underwent bilateral medial temporal lobe resection and had complete loss of memory of events subsequent to the surgery and a partial retrograde amnesia in the absence of changes in personality or semantic knowledge. The patient's blood tests and CT/MRI studies were unremarkable. This is the first case report of a patient with a similar pattern of memory loss as H. M. yet without any history of neurosurgery or any evidence of anatomical lesion on CT and MRI. **Conclusion:** This case is unique, for it demonstrated a similar pattern of memory loss as H. M. in the absence of lobectomy

of medial temporal lobes. It confirms the theory that memory is separable from other perceptual and intellectual work; however, it suggests that organic brain structural lesions are not the only pathway capable of causing such a pattern of amnesia. There might exist different mechanisms leading to the same pattern of amnesia, or, alternatively, our patient might have abnormalities that are not grossly detectable on CT and MRI but are visible on functional brain imaging studies.

No. 12

Medical Management of Treating Neuroleptic Malignant Syndrome With Dantrolene and Bromocriptine and Restarting Antipsychotic Agent

Poster Presenter: Nak Young Kim

Co-Authors: Chong Ki Kim, Jin Park, Yong Chon Park, M.D., Ph.D.

SUMMARY:

Ms. P., a 47-year-old Asian female with a past psychiatric history of bipolar I disorder, transferred from a local small hospital to the general hospital psychiatric service with recent onset of altered mental status, incoherent speech, fever, tremor, and muscle rigidity. The patient had been taking haloperidol and quetiapine and valproate because of acute mania, and dosage of haloperidol and quetiapine were increased four days before transfer. She was admitted to the psychiatric ward. Initial laboratory finding was compatible with rhabdomyolysis. With clinical symptoms, the medical team considered the assessment of neuroleptic malignant syndrome. All antipsychotic agents and mood stabilizers were stopped, and a massive amount of IV fluid was infused. She was continually monitored in the psychiatric ward instead of a critical care setting because she was able to care for herself initially. Despite IV hydration, clinical symptoms worsened. Three days later, aspiration occurred during breakfast, and she was moved to an intensive care setting. Dantrolene was approved for her muscle symptoms. In the ICU, Intubation was conducted; IV diazepam and rocuronium bromide were administered. Because rocuronium has a strong muscle relaxant effect, dantrolene was held. After a ventilator weaning period, as dose of rocuronium decreased, dantrolene was started via IV. Dantrolene showed the effect of muscle

relaxation; muscle symptoms and rhabdomyolysis was relieved, but stuporous mentality was sustained. This led to the concern of suboptimal management of NMS; as a result, bromocriptine was selected to be used. One day after bromocriptine was applied, mentality was recovered to alert, but four days of using bromocriptine gave her auditory hallucinations, and bromocriptine was stopped. Olanzapine was administered to control hallucination and hypomanic symptoms. Being that NMS is a psychiatric emergency, patients with this symptom need to be treated in two parts: muscle relaxation and mentality recovery. In this poster, we discuss the effect of dantrolene and bromocriptine in managing different symptoms of NMS and notable side effects disturbing psychiatric treatment.

No. 13

Schizoaffective Disorder, Bipolar Type, Complicated by Polysubstance Abuse and Neurocognitive Disorder

Poster Presenter: Jennifer Brady, D.O.

Co-Author: Kimberlee Wilson

SUMMARY:

Mr. R. is a 52-year-old Caucasian male with a past history of severe treatment-refractory schizoaffective disorder, bipolar type, complicated by polysubstance abuse and dementia. In this poster, we will address the management of multiple treatment-refractory disorders in an older patient. Mr. R. presented floridly psychotic, with grandiose, persecutory, paranoid, and somatic delusions. One particularly frequent somatic delusion was "Thorazine burned holes in my stomach, so I ate some peanut butter to plug up the holes." He exhibited bizarre near-clang associations, such as "Easter Bunny! Easter Sunday! Easter Church! Memorial Day! Fourth of July! Labor Day!" and regularly shouted "Denver! Cheyenne! Boulder! Main! Boston! Cincinnati! Detroit!" the names of the streets in Tulsa, in order from east to west. He was quite volatile, yelling in his room in response to internal stimuli for hours at a time, but could hold brief snippets of lucid conversation. Mr. R. stayed in a single-occupancy room during his admission. He was allowed two beds so he could "sleep on the other one because of the spirits talking from the mattress." A polypharmacy of heroic doses was used

with little improvement, including multiple mood stabilizers, antipsychotics, benzodiazepines, and sleep agents. He has a significant polysubstance use history and routinely demanded that all he needed was "Lortab, Ativan and Valium" and specifically requested them by injection. During a discharge period of four days, he returned to his home and snorted "ghost dust" (methamphetamine with acrylic paint). He was promptly returned to our facility for worsening of symptoms and hoarding medications. He attempted to elope multiple times in search of drugs and at one point snorted salt from an oral rinse in an attempt to get high. Mr. R. was assessed for neurocognitive disorder during the course of his admission, after it was determined that he was not oriented to the date or his age. The Montreal Cognitive Assessment was used to assess his cognitive deficiency. He was unable to maintain attention for more than one question at a time and was scored 5/30. It was determined that he most likely suffered from dementia, potentially Lewy body, in addition to schizoaffective disorder. During his long admission at our facility, Mr. R. lost his apartment through Mental Health Housing. Due to his steep decline of cognitive functioning and complicated medication regimen, it was determined that he was unable to care for himself. Mr. R. was discharged on Zyprexa, Valium, Depakote, Lamictal, Ambien, and Artane and received Invega Sustenna IM. His clinical picture made placement at a residential care facility extremely challenging. After several weeks of applying, Mr. R. was accepted to a facility in rural Oklahoma. Six hours after his arrival, he left the facility in search of marijuana. He was found by police and taken to the jail for holding. His current disposition and whereabouts are unknown.

No. 14

Clinical Burnout: An Evaluation of Burnout Among Psychiatry Residents During the Longitudinal Outpatient Year of Training

Poster Presenter: Andrew Pierce

Co-Author: Mehdi Yazdanpanah, M.D.

SUMMARY:

Burnout is a profound problem for health care workers and may have powerful implications for psychiatrists as they progress through training. Burnout is higher among physicians compared to the

general U.S. population, with a peak time for difficulty occurring during residency training. Psychiatry residents are vulnerable to the exhaustion and cynicism that are hallmarks of burnout. The growth of literature pertaining to burnout, especially as it regards medical education, has expanded over the last decade, but significant gaps in the knowledge of this phenomena remain. In particular, the effects of the longitudinal outpatient year during psychiatry residency training as it regards burnout have scant applicable literature. This study intends to contribute to the literature regarding burnout by examining the prevalence of burnout among PGY-3 residents participating in a yearlong longitudinal outpatient curriculum. It is the hypothesis of the investigators that burnout is present in a significant portion of PGY-3 residents during their "clinic year" and that the severity and incidence of burnout will both increase across the time period in question. Residents in the University of Florida General Psychiatry Residency Program will constitute the study population. PGY-3 residents are the focus population. PGY-1, -2 and -4 residents will function as comparative groups for the study. Burnout will be measured utilizing the Oldenburg Burnout Inventory (OLBI), which is a validated metric for measuring burnout as a function of exhaustion and/or cynicism. An anonymous response program (Qualtrics) will be used to deploy the surveys on a monthly basis during the course of the study. Statistical analysis of the gathered data will be investigated for insights into burnout among psychiatry residents. Investigation of incidence of burnout as well as changes across time during the study will increase the knowledge of this important subject and provide a platform for future studies.

No. 15

Severe Alcohol Use Disorder Leading to Alcoholic Hepatitis and Necrotizing Pancreatitis in a 25-Year-Old United States Marine

Poster Presenter: Ryan Vienna

Co-Authors: Ashley Voss, D.O., David M. Oliver, M.D.

SUMMARY:

A 25-year-old active duty Marine with a history significant for severe alcohol use disorder, with completion of two outpatient treatment programs and one residential program within the previous

three years, was admitted to the ICU after being found unconscious in his room. Hospital admission was following an approximately two-week binge drinking episode that started on the Fourth of July. The hospital course was significant for intubation and diagnosis of alcoholic hepatitis and necrotizing pancreatitis. The patient reports that his alcohol use began in 2003 after returning from a deployment to Afghanistan. While the typical time course for alcoholic hepatitis and pancreatitis can take years to decades of heavy drinking, this young, otherwise healthy male demonstrates the significant toll that heavy alcohol use can have even at a younger age. Even though the patient population in the military health care system typically skews toward young and healthy patients, this case shows that patients with a severe enough drinking problem are susceptible to disease processes usually seen in older, sicker populations.

No. 16

The Impact of Stress, Burnout and Depression on Medical Student and Resident Empathy

Poster Presenter: Rustin D. Carter, M.D.

SUMMARY:

Background: Medical schools and residency programs seek to educate future physicians to be competent, well-rounded providers capable of evidence-based and humanistic care. These long, arduous years of training strive to produce empathetic, knowledgeable physicians to provide compassionate care in this service-oriented profession. Positive clinical outcomes are dependent upon health care providers who possess both clinical acumen and understanding of the patient's perspective. However, education across the nation varies in relation to how to develop a health care force capable of empathetic care. In addition, a changing health care system continues to add demands and stress, and recent research has shown increasing affective disorders in our students and residents. Empathy-related research, especially within health care, is sparse. The definition is difficult to pinpoint, and various researchers and physicians possess varying ideas on what empathy and humanism mean. Within the completed research, trends have been identified and theories have been put forth. Few studies have sought to

validate those potential influences, especially in relation to increasing educational strains and innumerable knowledge and clinical stressors identified in the status quo of American medical schools and residency training programs. Little to no research has been completed in determining stress, burnout and depression effects on empathy in our trainees. **Methods:** This study addresses the paucity of literature related to career and educational stress to determine an effect, if any, on empathy in medical students and residents. The Maslach Burnout Inventory (MBI), the Patient Health Questionnaire–9 (PHQ-9) and the Jefferson Scale on Physician Empathy (JSPE) will be utilized to study this relationship. These scales have been validated within health care and capture the variables being studied. We hypothesize that there is a statistically significant relationship between those students with high stress/burnout/depression scores and low empathy scores. Students/residents will identify some additional need for curriculum development. **Discussion:** This study will determine the potential relationship between stress/burnout and empathy in our university population. With a relationship defined, curricula interventions can be made to mediate the relationship. This study would provide the evidence-based understanding for the development of interventions that can facilitate increased empathy and/or decreased levels of stress/burnout in our students. The population can be reevaluated after curricula intervention. Demographic data may also highlight general “at-risk” students. With the influence of empathy and its impact on health outcomes, medical student and resident retention, and medical malpractice, it is an important focus of study for our future and current physician force.

No. 17

Thirty-Day Readmission: Risk Factors

Poster Presenter: Saad F. Ahmed, M.D.

Co-Authors: Leon P. Valbrun, M.D., Tolulope Olupona, M.D., Evaristo O. Akerele, M.D., M.P.H., Oluwole Jegede, M.D.

SUMMARY:

Background: Reducing readmissions has become a national priority in order to improve health care delivery and lower costs. The readmission rate is a

quality measure that is used to measure the care rendered to patients across all spectrum of medical specialties. In 2013, the Centers for Medicare and Medicaid Services (CMS) implemented a policy to tie reimbursement to hospital readmissions. The aim of this study is to review factors influencing 30-day readmission of patients in the psychiatric service from January to June 2016 at a community teaching hospital with comprehensive mental health services in Brooklyn, New York. **Methods:** We reviewed all 93 medical records of patients who were re-admitted to inpatient psychiatric services within 30 days of discharge from the inpatient units, including the adult inpatient, detox and rehabilitation units. The charts were reviewed to determine the factors associated with the readmission. Variables reviewed were age, gender, ethnicity, housing situation, employment, marital status, substance abuse, diagnosis, and use of long-acting injectable antipsychotics. Distribution of readmissions according to variables was described using pie charts. **Results:** 7.8% of all admissions in psychiatric inpatient services were readmissions within 30 days. Seventy-three percent were between 26 and 55 years old, 74% were males, 63% were African Americans, 54% were homeless/shelter residents, 90% were single, 98% were unemployed, 51% were diagnosed as schizoaffective, and 71% had urine toxicology positive for at least one illicit substance. **Conclusion:** As mental health care delivery changes in a direction more favorable toward outpatient services versus inpatient services, readmission rate is being looked at as an indicator of quality for inpatient services. Multitudes of factors play significant roles in risk of readmission, as revealed by this study. Some factors need comprehensive psychosocial interventions for improvement, such as housing situations and employment. Further studies are recommended for determining the role of each variable in readmission to inpatient services.

No. 18

Role of Culture and Fluphenazine in Hyponatremia

Poster Presenter: Saad F. Ahmed, M.D.

Co-Authors: Leon P. Valbrun, M.D., Mario Gustave, M.D., Tolulope Olupona, M.D., Evaristo O. Akerele, M.D., M.P.H.

SUMMARY:

Background: Hyponatremia is the most common electrolyte imbalance seen in the inpatient population across specialties including psychiatry. In psychiatric inpatient services, hyponatremia is most commonly associated with psychogenic polydipsia.

Case: In this poster, we report a case of hyponatremia in a patient with schizoaffective disorder, bipolar type. Multiple factors have been proposed and investigated for the causation of hyponatremia in this patient. As it stands, hyponatremia might have been a result of complex interplay between these factors. This case is expected to shed light on less commonly explored factors, such as cultural diet and interplay of psychopathology and psychopharmacology in producing hyponatremia in psychiatric patients.

Discussion: Psychogenic polydipsia—the excessive drinking of water—is most commonly seen in psychotic disorders. Patients feel compelled to drink large quantities of water, putting them at the risk of diluting sodium in serum. In this case, culture seemed to have played a major role in the development of hyponatremia issues. **Conclusion:** Further research into psychogenic polydipsia, medication side effects and cultural nutrition are encouraged for prevention and improved management of hyponatremia in psychiatric populations.

No. 19

Developing Interest in Psychiatry Careers Among Medical Students

Poster Presenter: Kanakadurga Meyyazhagan, M.D.

Co-Authors: Simran Brar, M.D., Glenda L. Wrenn, M.D.

SUMMARY:

Background: The shortage of psychiatrists in the United States continues to be a problem, especially within urban underserved and rural communities. Over 50% of psychiatrists in Georgia are currently over the age of 55. In addition, about 26% of the psychiatric residency slots in 2015 were filled by international medical graduates, who often help address population disparities by practicing in shortage areas. Although the American Association of Directors of Psychiatry Residency Training (AADPRT) Recruitment Committee is charged with promotion of psychiatry careers, little empirical

evidence exists on effective strategies to increase U.S. medical student interest in the field of psychiatry. The goal of this project is to learn which medical school-based events have greater impact on medical students' interest in psychiatry. **Methods:** In the proposed study, researchers will work with Morehouse SOM medical students who are currently voluntarily participating in the Morehouse "Psychiatry Interest Group" to better assess medical student interest in the field of psychiatry and co-design activities to promote interest. The research team will meet with the Psychiatry Interest Group, who will host monthly events over the course of six months (may include "psych cinema," Q&A sessions with seniors or attendings on topics of interest, and other educational activities). Surveys will be developed in RedCap and administered before and after each monthly event, and participants will be asked to indicate which prior events they attended. The data from the surveys will be analyzed using statistical software. **Results:** A preliminary survey was developed, and key assessment domains will be presented. An increase in interest among medical students after their attendance of monthly events over the course of six months is expected.

Conclusion: Events that are co-developed with and conducted within a psychiatry interest group can be a useful career recruitment method. Event surveys will help tailor the program to better suit the interests of medical students. As interest in psychiatry among medical students rises, more students will apply for psychiatry residency programs and help address pressing workforce issues.

No. 20

Tourette's Disorder and Psychiatric Illness: A Case Report

Poster Presenter: Olawale O. Ojo

Co-Authors: Leon P. Valbrun, M.D., Christianah Y. Ogunlesi, M.D.

SUMMARY:

Tourette's disorder is named after Georges Albert Édouard Brutus Gilles de la Tourette, who described nine cases of Tourette's disorder in 1851. Tourette's disorder, according to the *DSM-5*, is characterized by both multiple motor and one or more vocal tics, which wax and wane in frequency, persist for more

than one year since the onset of tics, with age of onset before the age 18; the disturbance is not attributable to substance use or other medical conditions. Seventy percent of patients experience a reduction or resolution of symptoms in late adolescence or early adulthood, with symptoms persisting unchanged in 15% of cases and worsening of symptoms in 15% of cases. Multiple comorbidities are associated with Tourette's disorder, with attention-deficit/hyperactivity disorder (ADHD) and obsessive-compulsive disorder being the commonest. These comorbidities often cause functional impairment if not identified and treated. This case examines a male patient who still experiences severe motor and vocal tics as an adult. A 45-year-old homeless and unemployed Caucasian male with past medical history of Tourette's disorder, dyslipidemia and seizures and past psychiatric history of schizoaffective disorder, anxiety and substance abuse was admitted to the inpatient psychiatric unit at Interfaith Medical Center. The patient was noticed to repeatedly blink his eyes, jerk his head, clear his throat, and make grunting sounds. He also manifested repetitive tapping movements of his hands and his legs with shrugging of his shoulders and contraction of his platysma. The patient was aware of his tics but had little volitional control over his tics. Onset of his motor tics reportedly started at age three and progressively got worse. His vocal tics reportedly began a year later.

No. 21
Multidisciplinary Inpatient Psychiatric Training to Enhance Job Satisfaction and Patient Care

Poster Presenter: Daniel Drew Tarman

SUMMARY:

Inpatient psychiatric units support patients in acute psychiatric crisis and are designed to provide brief interventions in order to facilitate safe return to the outpatient setting. Available interventions include various pharmacology and psychotherapy, with psychiatrists and psychologists directing patient care. Typical therapeutic methods such as supportive therapy, insight-oriented therapy, brief psychodynamic therapy, cognitive behavior therapy (CBT), and dialectical behavioral therapy (DBT) are frequently necessary. However, with high patient

load and provider shortages, the subject matter experts have significantly limited patient contact time. Therefore, psychiatric nurses and psychiatric technicians are often the primary patient contacts on the inpatient unit but, by the nature of their training, can lack some of the necessary tools to provide appropriate therapeutic interventions. This imbalance of therapeutic knowledge and patient contact time may result in decreased job satisfaction and poorer patient outcomes. In order to address this imbalance, a longitudinal, weekly training curriculum for junior psychiatric nurses and psychiatric technicians was developed by psychiatrists, psychologists and senior nursing staff. A pilot study was completed and presented at the 2015 ACGME conference, and a five-month trial of a long-term program was developed. At the time of this submission, the initial intervention was not yet completed and had been well received by participants. This presentation will report the change in overall job satisfaction based on administered ProQOL-5 questionnaires for nursing staff and technicians before and after the intervention. In addition, the effect of the intervention on patient outcomes, including length of stay and patient readmission rate, will also be examined.

No. 22
A Medical Student-Run Adult and Child and Adolescent Psychiatry Clinic: An Institution's Novel System in Mental Health Care for All Ages

Poster Presenter: Tyler A. Durns

Co-Authors: Cassandra A. Murzl, Andrew S. Tubbs, Lorin T. Mowrey, Sally A. Boeve

SUMMARY:

Objective: This study examines the experience of one institution's development of the first student-run psychiatry clinic that serves both adult and pediatric populations. **Methods:** The clinic is held weekly with preclinical and clinical medical student volunteers under the supervision of board-certified adult and child and adolescent psychiatrists. The clinic takes place one time per week, always on Monday night. Medical students do the majority of the psychiatric evaluation and work with an attending to formulate an assessment and plan. Four medical students, who rotate weekly, manage the clinic under the supervision of an attending

psychiatrist during operating hours. Additional longitudinal medical student positions coordinate follow-up care, community resources, outreach, and physician recruitment. Results were collected using deidentified information and chart review in a retrospective manner. The electronic medical record system used is Practice Fusion. The data collected span from the opening of the clinic in January 2016 to August 2016. **Results:** Since its inception in January 2016, the clinic has scheduled 62 patients: 26 male, 35 female and 1 transgender patient. Among adults, depression, anxiety and PTSD are the most commonly managed diagnoses. Nineteen (31%) of the patients seen were pediatric patients. The pediatric patients have been seen for a variety of diagnoses, most frequently ADHD, anxiety and depression. The most common diagnosis seen so far in our pediatric patients is ADHD at 53% (10). Four (21%) of the pediatric patients were prescribed medications alone. Sixteen percent of children were prescribed therapy alone. Twenty-six percent of children were prescribed both medication and therapy together. Thirty-seven percent of children required more collateral before treatment could be recommended. Since clinic operations began, 61 different medical students have volunteered at the clinic. Of these medical students, 61% (38) were in their clinical years three and four, and 39% (27) were in their preclinical years one and two. **Conclusion:** This study describes the first student-run, outpatient child and adolescent psychiatry clinic. This clinic serves a vital need within our community by providing underserved families with accessible, weekly psychiatric services. Additionally, this clinic serves as an example of the role that student-run clinics could have in psychiatry recruitment and training for preclinical and clinical medical students.

No. 23

It's Not a Tumor! Wait, Maybe It Is: Evaluation of Anorexia in an Adolescent

Poster Presenter: Camilo Leal, M.D.

Co-Author: Almari Ginory, D.O.

SUMMARY:

Background: In psychiatry, we often say that most of our diagnoses are of exclusion. On consult service, we are often faced with a broad question with limited information and medical workup. Eating

disorders are often not caught until there is significant change in body habitus or signs of self-induced vomiting, but sometimes there's a consult for a teenager with a 30-pound weight loss over the last year that isn't as easy as it seems. **Case:** We present the case of a 13-year-old Caucasian female with no significant past psychiatric history who presented to the ED with a one-year history of 30 pounds weight loss and fatigue. The patient denied any body image issues, but her pediatrician and mother were concerned that due to her age and gender, she was suffering with depression and an undiagnosed eating disorder. Even though she denied any eating disorder or body image questions, a psychiatry consult was placed to evaluate for depression, anxiety and an eating disorder. A medical workup was negative, including CMP, CBC, H pylori, calprotectin, lactoferrin, TSH, O&P, iron studies, CRP, HgbA1C, and celiac panel, with the only abnormalities being slightly low iron and low potassium. On psychiatric evaluation, the patient only reported fatigue and screened negative for depression and anxiety. Her mother was concerned that she had some behavioral changes at school. Both mother and patient denied any safety concerns, as there was no history of depression in the family or the patient, and she had a very pleasant childhood. After the psychiatric evaluation and keeping in mind that any deviation in behavior from baseline, regardless of whether or not it can be attributed to fatigue, warrants a scan of the brain, it was further discovered that she was found to have loss of right side visual field as well as decrease in visual acuity, and as such, an MRI of the brain was ordered. The results from the imaging studies yielded a large homogeneously enhancing, likely extra-axial mass, which measured approximately 4.0 by 4.1cm, consistent with a tumor. The patient subsequently underwent chemotherapy. **Conclusion:** Eating disorders are a common in today's society. Furthermore, a 13-year-old girl ranks very high in the risk factors category for developing anorexia, as she is in a period of her life in which she is starting to become more aware and self-conscious of her appearance. However, anorexia nervosa remains a diagnosis of exclusion, and other causes must be ruled out. And as such, and very unfortunately for our patient, it is a tumor.

No. 24

A Review of the Effects of Adjunctive Selective Estrogen Receptor Modulator Treatment on Symptom Severity in Women with Schizophrenia

Poster Presenter: Andrea Naaum, M.D.

Co-Authors: Rachel Steere, D.O., Vedrana Hodzic, M.D.

SUMMARY:

Gender differences in schizophrenia have been well characterized, with research showing that schizophrenia is less common in women, with a later onset and a less severe course. One theory that has been proposed to explain these differences is that estrogens provide a protective effect in women at risk of presenting with this illness. This theory has been supported by several studies. Animal research has shown that estrogen has a modulating effect on the dopaminergic system in the brain, and studies in humans have found that estrogen levels in women with schizophrenia are significantly lower than in healthy women. Studies have also shown that the onset of illness and/or relapses coincide more frequently with phases of the menstrual cycle when estrogen levels are low. In addition, the appearance of late-onset schizophrenia with greater frequency in women seems to be related to the diminution of estrogen levels during menopause. These data have led to research studying the therapeutic effects of estrogen in patients with schizophrenia. There is growing evidence suggesting that estrogen reduces the severity of both positive and negative symptoms in patients with schizophrenia. Effects include reduction in PANSS and BPRS scores and improvements in emotional symptoms, memory and information processing. Recently, studies have focused on selective estrogen receptor modulators (SERMs), which have been shown to provide the protective effects of estrogen without its adverse effects on reproductive organs. In animal models, administration of the SERM raloxifene has demonstrated multiple CNS changes, including reduction of inflammation and increased neurogenesis, which may represent disease models of schizophrenia. Additionally, SERMs may offer protection against atherosclerosis, diabetes mellitus and obesity, well-known adverse effects associated with long-term antipsychotic treatment. This

literature review summarizes the findings to date on the effects adjunctive treatment with SERMs has on symptom severity and cognition when compared to antipsychotics alone in the treatment of women with schizophrenia or schizoaffective disorder. These findings may inform future prescribing practices for patients with schizophrenia and schizoaffective disorders.

No. 25

Management of Neuropsychiatric Manifestations in an Adolescent With Agenesis of the Corpus Callosum

Poster Presenter: Shalin R. Patel

SUMMARY:

Background: Neurological and behavioral consequences of agenesis of the corpus callosum have been quite diverse. Previous studies have shown patients to have associations with intellectual disability, seizure disorder, depression, psychosis, and interference with psychomotor development. In this study, we examine the symptoms and management of behavioral disturbances as a consequence of agenesis of the corpus callosum. The case presented was analyzed and compared to previous reports. **Methods:** Using the electronic medical records (EMR) at Riverside University Health System (RUHS), subjective symptoms and improvement were recorded throughout treatment. Symptoms that were monitored included behavioral changes, mood disturbances, school performance, and difficulties with concentration and attention. Findings were compared to previous studies that evaluated the neuropsychiatric manifestations of children with agenesis of the corpus callosum. **Results:** The patient with agenesis of the corpus callosum showed symptoms of learning difficulties, depression, irritability, psychosis, and social impairments. With treatment on antidepressants and antipsychotics, there was a subjective improvement in mood, per patient and family. Reportedly, there was improved behavior at school and less aggressive behaviors at home while on treatment. Certain symptoms were in line with previous cases; however findings could have been a result of other confounders. **Conclusion:** Neuropsychiatric manifestations of children with agenesis of the corpus callosum can vary depending

on the location and severity. The individual in this case had symptoms of irritability, anxiety, auditory hallucinations, and learning difficulties. Symptoms revealed a partial response to psychotropic medications, and the patient had improvement in attention, school performance and subjective mood as a result of treatment. Previous cases had diverse presentations that were also consistent with the findings in this case.

No. 26

Trauma: Influence on Social Engagement

Poster Presenter: Sohail Mohammad, M.D., M.P.H.

SUMMARY:

Trauma exposure may occur at any age but historically is more prevalent in young adults due to vulnerability to the precipitating situation. Men and women differ in the types of trauma to which they are exposed. In addition to predisposing risk factors, peri-trauma psychodynamic, cognitive-behavioral and biological factors impact post-trauma well-being. In this poster, we present three patient scenarios and illustrate the need for trauma-focused care, which can potentially prevent the development of other psychiatric comorbidities, manage psychiatric illness in a trauma-focused manner and help patients remain socially engaged. A 60-year-old African-American female presents with depressive symptoms, anxiety, social isolation, and avoidance of extended family gatherings secondary to reminder of traumatic experience. She gives a history of second-degree burns at age five, leading to several skin graft procedures and surgeries her entire childhood and adolescence. She also gives a history of abusive marriage. A 43-year-old African-American female presents with anxiety of heart attack and death and does not venture out of her house. She has several phones in her house and sleep-wake reversal, and she re-married only as a safeguard in case she has a heart attack again. She gives a history of a massive heart attack in her late 30s, leading to a coronary angioplasty procedure. A 49-year-old African-American female presents with depressive features and anxiety and feels when she goes out of her house that somebody is going to grab her from behind. She gives a history of her being gang raped twice while she was addicted to cocaine and a history of her mother dying in her arms from a heart

attack. The recent loss of her mother-in-law reminded her of her traumatic experience, and she reports depressive symptoms. These case scenarios illustrate the fact that a good trauma history and management that is trauma-focused is extremely important in the recovery process. In addition to psychopharmacology, early intervention with cognitive behavior therapy will prevent an individual from developing a serious psychiatric illness and enable them to be more socially engaged and functional in their everyday activities.

No. 27

Psychiatric Manifestations of Joint Hypermobility Syndrome/Ehlers–Danlos Syndrome: The Link Between Connective Tissue and Psychological Distress

Poster Presenter: Juan S. Pimentel, M.D.

Co-Authors: Chirag Patel, Maria E. Saiz, M.D., Asghar Hossain

SUMMARY:

Psychological distress is a known feature of generalized joint hypermobility (gJHM), or Ehlers–Danlos syndrome, hypermobility type (EDS-HT), and significantly contributes to the quality of life of affected individuals. In this case report, we present the entire spectrum of psychopathological findings in gJHM and EDS-HT. A 19-year-old male with no past psychiatric history presented to the emergency room with paranoid delusions that unknown people were out to kill him. He also displayed persecutory delusions that his father raped him when he was eight years old. He has been diagnosed with EHS-HT and ADHD and was prescribed Vyvanse. He had a history of anxiety symptoms of excessive sweating and palpitations, and alprazolam was prescribed for two years. A history of aggressive and assaultive behavior toward family members was reported. Family history includes his mother diagnosed with EDS-HT, a paternal uncle with schizophrenia and an aunt with autism spectrum disorder. His laboratory tests were negative for alcohol but were positive for marijuana. According to the *DSM-5*, he was given a diagnosis of unspecified schizophrenia spectrum disorder and severe cannabis use disorder. With a strong family history of psychiatric illness and substance use, the above diagnosis is appropriate, but EDS in itself can present with psychiatric

manifestations. Interestingly, in addition to the confirmation of a tight link between anxiety and EDS, preliminary connections with depression, attention deficit/hyperactivity disorder, autism spectrum disorder, and obsessive-compulsive personality disorder were found. Few papers have investigated the relationship with schizophrenia. In a case control study, 47 consecutive gJHM/EDS-HT patients were investigated for the prevalence of psychiatric manifestations and compared to 45 healthy controls. The gJHM/EDS group had a 4.3 higher risk of being affected by any psychotic disorder. Concluding remarks addressed the implications of the psychopathological features of gJHM and JHS/EDS-HT in clinical practice.

No. 28

Primary Nocturnal Enuresis Among Adults

Poster Presenter: Rishab Gupta

Co-Author: Vandita Sharma

SUMMARY:

Mr. N., a 26-year-old unmarried male, presented to the adult psychiatry clinic of a tertiary care center in North India with symptoms of low mood, easy irritability, lethargy, decreased interaction, worry, and autonomic symptoms of anxiety, fear of dark, nightmares, and decreased sleep and appetite. He belonged to a large family of lower socioeconomic status in a small town in Eastern India. On assessment, it was discovered that he had never attained control over bladder at night. The average number of episodes of nocturnal enuresis was three to four times per week. There were no consistent dry periods ever since childhood. There was no history of enuresis among family members. There was no evidence of an underlying medical condition on detailed history and physical examination. Lab investigations and urodynamic flow studies were conducted to rule out any organic cause for his symptoms. A comprehensive psychological workup was done by a clinical psychologist to understand the factors initiating and maintaining his symptoms. In this poster, we advocate the need for health professionals to develop skills to encourage patients to discuss problems associated with primary nocturnal enuresis, raise awareness regarding this condition among the general population and break the stigma associated with this condition. These may

lead to early interventions and help decrease the prolongation of primary nocturnal enuresis into adulthood. It also highlights a need for conducting studies to explore the prevalence and psychosocial impact of primary nocturnal enuresis in society.

No. 29

Role of N-Acetyl Cysteine in Dermatillomania

Poster Presenter: Rishab Gupta

Co-Author: Parvesh Batra

SUMMARY:

Dermatillomania is characterized by repetitive picking or scratching normal or diseased skin. The *DSM-5* lists it as "excoriation (skin-picking) disorder" under "obsessive-compulsive and related disorders." Skin excoriation is seen in various other psychiatric disorders as well. It is generally associated with other body-focused repetitive behaviors. Its prevalence rate is 1.2–5.4% in the community, with higher rates in females (60–90%) and college students. No approved medications or guidelines exist for its treatment. Behavioral therapy is instituted in the form of habit reversal training, relaxation training, etc. Fluoxetine and lamotrigine trials showed some effectiveness. A few other drugs have also been tried, but with minimal benefit. We hereby discuss a case of dermatillomania that improved with N-acetylcysteine (NAC) and behavioral therapy. A 27-year-old male presented to the psychiatry clinic with complaints of ulceration and loss of hair in a circumscribed area of the scalp. His symptoms started at the age of 11 with an urge to scratch and pick the skin over both his eyebrows. Over the next two to three years, the scratch site gradually shifted to scalp. Over the next three years, the urge to scratch and pick increased up to many hours per day, with inability to control in social situations, leading to frequent ulcerations and infection. He would report these behaviors as his own, excessive, intrusive, absurd, and egodystonic. He would repeatedly but unsuccessfully try to resist them. He would feel mounting anxiety whenever he would resist and would have a feeling of relief after scratching or picking. Over the next seven to eight years, he continued to have persistent symptoms, occurring for two to 10 hours per day, despite consulting several general physicians and dermatologists. No history of any other psychiatric

symptoms or chronic medical illness was present. His family history was also non-contributory. His hemogram, serum biochemistry (including liver and renal function tests), thyroid hormone assay, serum vitamin B12 levels, and blood sugar were normal. Dermatology opinion was sought, but no skin disease was found. His initial Neurotic Excoriation-Yale Brown Obsessive Compulsive Scale (NE-YBOCS) score was 30. He was started on fluoxetine, built up to 80mg per day along with habit reversal therapy. After some time, he again worsened, and NE-YBOCS score increased to 35. Fluoxetine was substituted with oral NAC 600mg per day. He soon started improving, and at the end of three months, his NE-YBOCS score decreased to 6. His scalp lesion healed with re-growth of hair, and his socio-occupational functioning returned to normal levels. This poster highlights the potential role of NAC in treating dermatillomania, especially in those who do not benefit from conventional psychotropics.

No. 30

Evidence-Based Treatment of a Patient With Comorbid OCD in the Context of Bipolar Disorder

Poster Presenter: Madia Majeed

Co-Authors: Joseph Siragusa, Bennett Silver, Asghar Hossain

SUMMARY:

Background: The co-occurrence of bipolar disorder and obsessive-compulsive disorder is a challenge for many physicians. Clinicians are often hesitant to prescribe antidepressants due to the risk of triggering manic symptoms, and as a result, OCD symptoms are often left untreated. We present the case of a patient in our outpatient clinic who has severe, untreated OCD in the context of well-established bipolar disorder in controlled remission. Although there is some research and literature regarding the optimal treatment in such situations, a formal guideline or standard of care has yet to emerge. **Objective:** Briefly review the existing literature on the treatment of these co-occurring disorders, demonstrate how the literature informed our course of treatment for the patient presented and suggest an optimal approach in treating such patients. **Methods:** A literature search was conducted using Google scholar and PubMed. **Discussion:** Patients with bipolar disorder frequently

present with other comorbid psychiatric conditions. Obsessive-compulsive disorder accounts for an estimated 21% of comorbidities present within bipolar disorder. Many hypotheses have been drawn as to the correlation of these disorders in terms of phenomenology and neurobiological etiology. Despite the relatively common co-occurrence, little research has been done regarding the optimal treatment for patients presenting with both OCD and bipolar disorder. Various modalities, including mood stabilizers alone, mood stabilizers plus antipsychotics, antidepressants, behavioral therapies, and deep brain stimulation, have been employed with mixed results. In our case, stabilization of mood was achieved with a mood stabilizer plus low-dose antipsychotic. Antidepressant therapy was gradually introduced with careful monitoring for side effects. Improvement in OCD symptomatology was achieved with the highest tolerated dose of the antidepressant. **Conclusion:** This poster summarizes what literature exists regarding the management of patients with comorbid bipolar disorder and OCD. The case presented illustrates the difficulty and complexity of treatment in such individuals. Our patient had success in slowly and carefully introducing antidepressant therapy after achieving mood stabilization while monitoring for signs and symptoms of hypomania/mania.

No. 31

The God Particle: Psychotic Confessions of a Truth Seeker

Poster Presenter: Peffin Lee, D.O.

Co-Author: Brandon G. Moore, M.D.

SUMMARY:

Obsessive-compulsive disorder (OCD) with schizotypal features differs in demographics, clinical characteristics and clinical course compared to OCD without this subtype. In this case presentation, we review a rarely reported subtype as well as introduce an increasingly popular hallucinogen, N, N-dimethyltryptamine (DMT), which complicated presentation and diagnosis. Mr. S. is a 27-year-old Caucasian male brought to the emergency department by police after calling multiple local police departments several times a day to express feelings of guilt due to viewing a photograph of an

underage nude person while online. He presented with minimal sleep for seven days along with irritable mood, high energy, flight of ideas, pressured speech, grandiosity, and religious preoccupations. Therefore, we began treating him with valproic acid and quetiapine for first episode of mania with psychosis. The patient's condition began to worsen. He displayed episodes of agitation in which he repeated a desire to be punished. Initially, this was thought to be related to his religious preoccupations; however, his behavior escalated to verbally aggressive statements of fighting and attacking others to posturing and destroying property to elopement. Additional history elicited a past diagnosis of OCD with symptom remission after cognitive behavior therapy and an unknown antidepressant. At that time, he exhibited excessive hand washing, stove checking and fear of hitting someone with a motor vehicle. Evaluation on the unit and collateral information revealed a pervasive pattern of odd appearance, speech and behavior such as concrete thinking, lack of friends, specific interest in religion and "magick," repeated use of DMT, and marked decline in functioning after high school. Quetiapine was discontinued, and olanzapine was started, which decreased the frequency of agitation. Eventually, valproic acid was discontinued, as we considered an acute exacerbation of obsessive-compulsive disorder versus mania. The patient presented with intrusive thoughts of "I am a bad person and I deserve to be punished" accompanied by a compulsion to confess. He was started on sertraline for OCD symptoms. On discharge, the patient had been stabilized on sertraline 200mg by mouth daily and olanzapine 15mg twice daily by mouth with improvement of symptoms. This case illustrates a complicated, yet interesting, history and presentation, which led us to consider a rarely reported subtype of OCD. Furthermore, we questioned the presence of psychosis versus personality features. Some research points toward a multidimensional view and posits advantageous qualities conferred, including creativity, openness to new experiences and unconventional thinking style. These qualities were seen within this particular patient and perhaps can be drawn upon for therapeutic benefit to improve prognosis.

No. 32

Symptoms of Obsessive-Compulsive Disorder During Long-Term Corticosteroid Use in a Patient With Pemphigus Vulgaris: A Case Report

Poster Presenter: Mehak Chopra, D.O.

SUMMARY:

Objective: Report a case demonstrating a patient who developed symptoms of obsessive-compulsive disorder (OCD) following treatment with long-term corticosteroids. **Background:** Autoimmune conditions often require the use of long-term corticosteroid therapy for reduction of symptoms and disease management. Long-term use of steroids can have adverse effects on multiple organ systems. The neuropsychiatric sequelae of steroid treatment have been well documented. However, little is known about the relationship between steroids and OCD. This case illustrates new-onset symptoms of severe anxiety and OCD in a patient treated on long-term corticosteroid therapy for pemphigus vulgaris. **Case:** The patient is a 36-year-old female with no formally diagnosed history of psychiatric illness who was started on long-term corticosteroid therapy with prednisone for treatment of pemphigus vulgaris. The patient was first diagnosed with pemphigus vulgaris in 2014. Her course was complicated by recurrent infections requiring several medical hospitalizations. Initially, she was treated with prednisone 60mg by mouth daily and azathioprine, which she remained on for several years. The patient began to exhibit symptoms of OCD shortly after starting treatment. She had contamination obsessions including excessive concern with environmental contaminants and excessive hand washing compulsions leading to scabs on her hands. She would refuse to interact with others and avoided social settings due to fears of contracting an infection. She refused to allow people to touch her. These symptoms caused clinically significant distress and impairment in social functioning. She had neuropsychological testing in June 2016, which further revealed symptoms of anxiety and depression. Her prednisone dose was eventually tapered down to a three-day cycle of 20mg per day, followed by two days of 10mg per day. As her steroids were being tapered down, her anxiety and OCD symptoms appeared to improve but only slightly. Benzodiazepines seemed to

exacerbate her symptoms and were discontinued. She was started on venlafaxine ER with some benefit. **Conclusion:** This case illustrates a patient who developed symptoms of severe anxiety and OCD following treatment with long-term corticosteroids for pemphigus vulgaris. Management is challenging and requires finding a balance between adequately dosing steroids to control autoimmune response and minimizing neuropsychiatric sequelae. Further research is warranted to explore the relationship between corticosteroids and OCD.

No. 33

Pharmacological Intervention in Kleptomania: A Case Report and Literature Review

Poster Presenter: Asghar Hossain

Lead Author: Zahid Islam

Co-Authors: Yasmine Kamel, Syed Saleh Uddin

SUMMARY:

Background: Kleptomania is a form of impulse control disorder that is characterized by uncontrolled urges to steal items that are often not needed for personal use and do not have a high monetary value. Patients often have multiple legal charges before clinicians recognize the diagnosis. Data conducted in clinical studies support the role of the opioidergic pathways in impulsive behaviors such as pathological gambling. The treatment of kleptomania involves the combination of cognitive behavior therapy and pharmacotherapy. The use of opiate antagonist such as naltrexone in the treatment of kleptomania has been previously cited in the literature and case studies. **Case:** We report a case of a 48-year-old female with history of bipolar I and alcohol use disorder who presented with recurrent impulses for the past three years of shoplifting of items that weren't of particular use or interest to her. After a diagnosis of kleptomania was made, the patient was put on monthly injections of naltrexone. The patient reported decreased urges to steal during subsequent follow-up visits and denied any relapse. **Discussion:** The aim of this poster is to outline the role of opioid antagonists in the treatment and management of kleptomania as well as review the literature regarding the pharmacological intervention in kleptomania. Previous studies suggest the role of opioid receptors

in the mediation of reward and reinforcement. There is sufficient evidence to conclude that there is opioidergic involvement in the pathophysiological and clinical manifestations of kleptomania. The use of naltrexone has been shown to be beneficial in reducing stealing urges and has proved its efficacy in the pharmacological management of kleptomania. While a few cases report the effective use of topiramate in the treatment of kleptomania, no formal clinical trials have been conducted to test the efficacy of topiramate in the treatment of kleptomania. There still remains a need for more formal studies to further explore different pharmacological approaches in treating kleptomania. Clinicians may benefit from conducting studies to test the efficacy of naltrexone versus topiramate in the treatment of kleptomania.

No. 34

Cigarette Smoking and Treatment Dilemmas: Overview in Psychiatric Patients

Poster Presenter: Zahid Islam

Co-Authors: Yassar Odhejo, Asghar Hossain

SUMMARY:

The nature of mental disorders, attitudes and prejudices of the social community toward psychiatric patients, behavior and treatment of mental patients, and reluctance of primary care physicians to treat cigarette addiction all bring about numerous dilemmas and prejudices. An estimated 44% of U.S. tobacco consumption is by psychiatry patients. Mentally ill patients spent approximately 30% of their income on cigarette purchases. Since the health risks of psychiatric patients are also significant in other medical ways, the majority of increase in the mortality rate is due to cardiovascular and respiratory deaths. Brown and Barraclough et al. state that excess mortality rates in schizophrenia patients are solely due to cigarette smoking. With the extent of problem being well defined both economically (80% of such patients receive income benefits from government) and health wise, and despite a decreased rate of smoking in the general population, the rate of smoking in chronic mental illness continues to be high. Many general physicians still do not address this problem aggressively with mentally ill patients, partly because of the concept that these patients cannot tolerate stress related to

quitting attempts. When in 1990 psychiatric hospital units passed smoking bans, it was assumed that there would be an increase in agitation in units, but subsequent studies over next 20 years showed that patient could generally tolerate smoking cessation in the short term with psychiatric symptom exacerbation. Subanalysis in a number of studies has shown that nicotine replacement therapy (NRT) was associated with better cessation outcomes, and group support participation was associated with better NRT adherence. Varenicline is considered the most effective smoking cessation pharmacotherapy in the general population, but its usage is limited in mentally ill patients due to concerns of worsening agitation and suicidality. An FDA trial regarding safety profile in such patients will be completed in 2017. The trend in the general population now favors three approaches: bupropion or varenicline plus NRT plus some form of education/support. The general population studies have, in fact, revealed that people can tolerate combination pharmacotherapy; therefore, it appears that stable chronic psychiatric patients in ongoing treatment can be offered triple therapy safely.

No. 35

Diagnosing and Treating Synthetic Cannabinoid Intoxication in a Patient With New-Onset Psychosis

Poster Presenter: Lauren M. Pengrin, D.O.

SUMMARY:

Mr. X. is a 41-year-old Caucasian male with a history of major depressive disorder who presented to an emergency department with symptoms of acute psychosis, hypersexual behavior and autonomic instability. He was unable to give any coherent information upon admission and was extremely agitated and physically threatening toward staff. He attempted to elope from the emergency department and required mechanical restraints. He was given sedatives and admitted to the internal medicine floor for further workup. The internal medicine service considered the differential diagnoses of metabolic encephalopathy, substance intoxication, bipolar disorder, and schizophrenia. The patient was given supportive therapy to address his hypertension, tremor and agitation. CT imaging of the brain and lumbar puncture were unremarkable. Labs revealed elevated CPK, elevated WBC and

evidence of dehydration. Urine toxicology screening was negative. The patient remained quite disorganized, agitated and sexually inappropriate the following day. Psychiatry was consulted to evaluate Mr. X. and recommend further treatment. Upon evaluation, Mr. X. was disoriented and verbally aggressive and appeared to be responding to internal stimuli. He was unable to provide any history, and no next of kin was found to gather collateral information. Given the onset of psychotic symptoms, the psychiatry team ordered specific toxicology labs to test for recent synthetic cannabinoid use; however, the results often take many days to return. The patient was managed with moderate doses of typical antipsychotics and benzodiazepines to address his symptoms of psychosis, hyper-sexuality and agitation. After four days, the patient became more coherent and was able to provide a limited history. He admitted to using what he thought to be marijuana, though he stated he had purchased the drug from a different dealer. Mr. X. said that the "marijuana" looked and smelled different when he smoked it. He reported having no memory of the previous five days, including his presentation in the ED or subsequent transfer to inpatient psychiatry, and was ashamed of the actions he had committed during that time. He made a full recovery and was discharged to the community. Synthetic cannabinoids are a major problem in Washington, DC, and are not included in routine toxicology screens. This case illustrates the difficulty faced by clinicians in identifying acute intoxication with synthetic cannabinoids, as the symptoms often mimic other psychiatric conditions. Standard toxicology screening does not test for synthetic cannabinoids, and specific toxicology test results can take days or weeks to return. In this poster presentation, we will discuss the importance of correct diagnosis and treatment of synthetic cannabinoid intoxication and the challenges clinicians face in doing so.

No. 36

Buprenorphine in Central Appalachia: Through the Lens of Local and National News Media

Poster Presenter: Derek Blevins, M.D.

Co-Authors: Surbhi Khanna, M.B.B.S., Nassima Ait-Daoud, M.D.

SUMMARY:

There are a number of logistical barriers for medication-assisted treatment (MAT) for opioid use disorders in central Appalachia. In addition to the more literal barriers to MAT for people in this region, biased media coverage of buprenorphine treatment may result in a more figurative barrier by imparting a negative perception for those suffering from opioid use disorders, their loved ones, and local leaders and politicians. A recent article published on August 6, 2016, from the *Richmond Times-Dispatch* entitled “In SW Va., drug touted for helping addicts is attacked as part of the problem” discusses some of the potential negative outcomes associated with buprenorphine treatment. This poster reviews local and national electronic news articles published in the past year discussing buprenorphine in the Appalachian region and classifies their stance as positive, negative or neutral in an attempt to understand the potential impact news media may have on the perception of MAT in the Appalachian region.

No. 37**Self-Treatment of Opioid Withdrawal With High-Dose Loperamide: A Case Report**

Poster Presenter: Surbhi Khanna, M.B.B.S.

Co-Authors: Derek Blevins, M.D., Nassima Ait-Daoud, M.D., Allan Scott Hamby

SUMMARY:

Background: Loperamide is a piperidine derivative that acts on the intestinal μ -opioid receptors and is FDA-approved for treatment of diarrhea. It is thought to have little or no central nervous system activity due to its inability to cross the blood-brain barrier at lower doses (up to 16mg). In contrast, it is able to cross the blood-brain barrier at higher doses and act on the central opioid receptors, causing euphoria, analgesia and respiratory depression. Since loperamide is easily available for over the counter use, physicians know very little about the extra-medical use of loperamide also known as “lope” by opioid abusers. However, some recent case reports suggest that loperamide is being increasingly used at supra-therapeutic doses (e.g., 100–400mg) to self-medicate symptoms of opioid withdrawal. We present one such case. **Case:** The patient is a 53-year-old married, Caucasian male

with past history of major depressive disorder and generalized anxiety disorder currently treated with citalopram who presented to our clinic seeking help for substance use, particularly opioid use. The patient first started using oxycodone after receiving a prescription following surgery on his left shoulder. As he did not find oxycodone particularly helpful for pain, he started making poppy seed-based tea at home and found that it was a better, stronger analgesic. He used this tea daily for several years before deciding to wean off it. In an effort to ease the withdrawal, he started using over the counter loperamide. He then attempted to taper himself off loperamide; however, he developed cravings and restarted using loperamide. The patient reported that he had regularly been using high-dose loperamide 120–240mg daily, as he “liked the way it made him feel.” On presentation, he was in moderate opioid withdrawal with a Clinical Opioid Withdrawal Scale (COWS) score of 21. We started him on clonidine and diazepam to treat withdrawal symptoms. Within a day, his COWS score was 3, and he was discharged. However, he returned four days later with a COWS score of 16. We then initiated buprenorphine-naloxone treatment, and he is currently doing well on a dose of 16mg/4mg.

Discussion: According to the Centers for Disease Control and Prevention, more people have died from drug overdoses in 2014 than any other year on record, and more than 6 out of 10 involve an opioid. Physicians are being urged to limit opioid prescriptions to short-term use to prevent misuse and overdose-related deaths. As a result, opioid users are turning to innovative, over the counter, cheap solutions such as high-dose loperamide and poppy seed-based tea to self-medicate and prevent withdrawal symptoms. Therefore, it is imperative for health care providers to recognize this trend and manage appropriately.

No. 38**Anticonvulsants as Monotherapy or Adjuncts to Treat Alcohol Withdrawal: A Systematic Review**

Poster Presenter: Aarti G. Chhatlani, M.D.

Co-Authors: Elizabeth DeOreo, M.D., Rajesh R. Tampi, M.D., M.S., Syeda Arshiya Farheen, M.D., Geetha Manikkara, Madhuri Jakkam Setty, M.D.

SUMMARY:

Background: There is growing evidence that anticonvulsants are safe alternatives or appropriate adjunct medications to treat alcohol withdrawal. **Objective:** Systematically review the current literature on commonly used anticonvulsants as monotherapy or adjuncts to treat alcohol withdrawal. **Methods:** We performed a literature search of PubMed, PsychINFO, MEDLINE, and Cochrane Collaboration databases through August 31, 2016, using the following keywords: “alcohol withdrawal,” “valproate,” “gabapentin,” “lamotrigine,” “carbamazepine,” and “oxcarbazepine.” The search was not restricted by language, but in the final analysis, only studies that were published in English or had official English translations were included. **Results:** A total of 23 double-blind randomized controlled trials (RCTs) that evaluated the use of anticonvulsants in treatment of alcohol withdrawal were identified on the literature search. Of these, seven studies focused on patients in the outpatient setting. A total of 16 studies focused on patients admitted to the hospital, and four studies did not specify the setting. Available evidence indicates that anticonvulsants are just as effective as sedatives/hypnotics in treating mild or moderate alcohol withdrawal symptoms. Six studies evaluated the use of anticonvulsants as adjuncts to sedatives/hypnotics. Combining anticonvulsants with sedatives decreases the quantity of sedatives required to treat withdrawal symptoms, and the symptoms may resolve quicker. There is some data that gabapentin, valproate and carbamazepine can be used to treat alcohol withdrawals as monotherapies. In addition, 20 of these studies assessed adverse effects from these medications. In one study, patients experienced significant adverse drug effects, and the study was terminated. In most studies, the dropout rates due to severe withdrawal or adverse effects were similar between the control group and the anticonvulsant group. The remaining studies only identified minor adverse effects from these medications. **Conclusion:** Available evidence indicates that anticonvulsants have good efficacy as monotherapy and as adjuncts with sedatives/hypnotics in treating mild to moderate alcohol withdrawal syndrome. Anticonvulsants appear to have less adverse effects and addiction potential when compared to sedatives/hypnotics.

No. 39

Opiate-Induced Neurotoxicity Presenting With Cognitive Impairment, Delirium and Myoclonus: Case Report and Literature Review

Poster Presenter: Aarti G. Chhatlani, M.D.

Co-Author: Katy A. Lalone

SUMMARY:

Background: Half of all patients with early stage malignancies report severe pain. In terminal stages, this number can escalate to 80% or more. Opiates, frequently prescribed to treat malignant pain, may result in complications in this medically complex population, who should be closely monitored for opiate-related neurotoxicity (OIN) **Objective:** Recognize the risk factors and clinical presentation of OIN and review appropriate treatments for this clinical syndrome. **Case:** We present a case of a 54-year-old male with squamous cell carcinoma (SCC) of the oral cavity who postoperatively developed symptoms of cognitive impairment, delirium and myoclonus concerning for OIN. Patient-related risk factors for OIN include renal impairment, liver disease, dehydration, polypharmacy, and infection, while opiate-related risk factors include chronic opiate treatments, rapid titration, inducement of tolerance, and higher doses. Clinical presentation of OIN consists of sedation, cognitive impairment, psychomotor impairment, seizures, delirium, myoclonus, hyperalgesia, allodynia, and hallucinations. Treatment strategies include aggressive hydration, reducing polypharmacy, switching opiate class, or opiate dose reduction. Benzodiazepines are used to treat myoclonus, and low doses of an antipsychotic can be helpful for delirium. **Conclusion:** Opiate-induced neurotoxicity, an often underrecognized clinical syndrome, can lead to dangerous consequences in patients being treated for malignant pain who often have comorbid medical conditions that can affect the metabolism and clearance of opiates. Clinicians working with patients being treated for malignant pain should be mindful of potential neurotoxicity in order to minimize opiate-related toxicity symptoms while maximizing pain control.

No. 40

Psychiatry: An Outlier in Both Smoking Rates and

Cessation Pharmacotherapy Prescribing Patterns in a Large Urban Hospital

Poster Presenter: A. B. Srivastava, M.D.

Co-Authors: Alex Ramsey, Ph.D., Yinjiao Ma, M.S., Laura Bierut, M.D.

SUMMARY:

Hospitalization presents a prime opportunity for interventions directed at smoking cessation because of 1) enforced restriction of access and 2) the health care environment that readily provides access to smoking cessation interventions. Nicotine replacement therapy, varenicline and bupropion are FDA-approved medications for smoking cessation with substantial literature demonstrating efficacy. In order to better characterize smoking rates among hospitalized patients, as well as utilization patterns of pharmacotherapy and trends in hospitalization, we examined data from our hospital's electronic medical record (EMR) concerning smoking rates by service and rates of prescribing by service over time. Psychiatry had undoubtedly the highest percentage of smokers among all the services (55.5%, $p < 0.0001$), as well as the highest rates of prescription of pharmacotherapy (70.4%, $p < 0.0001$). Over time, psychiatric patients tended to smoke less ($p < 0.0001$), yet prescription rates on the psychiatric service, though high, were variable and statistically different among the different years surveyed ($p < 0.0001$). High rates of prescribing patterns in psychiatry may be due to 1) complete restriction in access prompting the physician to address nicotine withdrawal and 2) use of an automatic electronic medical record notification on the psychiatric admissions order that prompts the physician to order smoking cessation medication. These identifiable factors may be generalized to other services to improve overall prescription rates. Moreover, psychiatry may be a targeted service for further increasing prescribing rates, thus increasing smoking cessation and leading to improved health and wellness for psychiatric patients.

No. 41

Pica With Mothballs and Toilet Bowl Cakes (Paradichlorobenzene) in the Setting of Alcohol

Dependence: Neuropsychological Implications

Poster Presenter: Julie W. Gauss, D.O., M.P.H.

Co-Author: Vivek Anand, M.D.

SUMMARY:

A 43-year-old African-American female with a history of substance-induced neurocognitive disorder, severe alcohol use disorder, intermittent other substance use (cannabis and cocaine), and generalized anxiety disorder (GAD) presents to the emergency department (ED) with suicidal and homicidal ideations in the setting of alcohol intoxication. The urine toxicology was unremarkable, complete blood count (CBC) indicated iron deficiency anemia, and an Alcohol Use Disorders Identification Test (AUDIT) score of 33 was suggestive of alcohol dependence. The patient was subsequently placed on the Clinical Institute Withdrawal Assessment for Alcohol (CIWA) protocol and recommended for inpatient alcohol use disorder treatment. In 2012, the patient was deemed incompetent after extensive medical workup, including neuropsychological testing, due to toxic leukoencephalopathy secondary to paradichlorobenzene (PDCB) found in moth balls and toilet bowl cakes. On presentation, she reported amylophagia (corn starch pica) but denied any recent use of mothballs or toilet bowl cakes. Two weeks prior to her ED presentation, the patient repeated neuropsychological testing to reestablish her competency. She had noticed marked improvement in her memory and cognitive functioning over the years. She reported independently managing her finances and household, which consists of a stable partner (boyfriend of 11 years), two daughters and two grandchildren. The serial neuropsychological testing yielded remarkable improvement since 2012, but residual mild cognitive and executive dysfunction. Notably, ethanol induces the metabolism of PDCB, which may prevent long-term neurocognitive sequelae associated with PDCB exposure. This poster will highlight the differences between neuropsychological outcomes in 2012 and 2016 and the importance of gathering a comprehensive history of pica, which may include toxic ingestions in patients with substance use disorders.

No. 42

Methodone and Weight Gain

Poster Presenter: Sehba Husain-Krautter, M.D., Ph.D.

Co-Authors: Connie Chang, M.D., Joseph Esposito,

M.D., Nathan Centers

SUMMARY:

The Medication-Assisted Opioid Treatment Program (MAOTP) helps adults who are diagnosed with opioid use disorders, as defined by the current *DSM* criteria, and is highly successful in the community, as it gradually reduces the psychological dependence on opioids, improves quality of life and reduces criminal activity, among other factors. Methadone is a recognized treatment for opioid dependence used in MAOTP. It is also the treatment of choice for pregnant women who are addicted to heroin or other opioids. Methadone is a mu receptor agonist and a synthetic narcotic, and even over a short period of time, use of mu opiate receptor agonist has been associated with weight gain. There is, however, a paucity of studies explaining the phenomenon of weight gain, and the few existing studies suggest that opioid agonists slow down metabolism, which could be one of the contributing factors. The purpose of this study is to initially report on the percentage of patients who had significant weight gain over a longitudinal course following admission to an MAOTP and then to delineate various factors that could be contributing to the weight gain. We are also interested in evaluating if weight gain in pregnant women enrolled in MAOTP is significantly higher compared to the average population and if incidents of gestational diabetes are higher in this population. Thus far, we have data available for 43 patients enrolled in the methadone program, and from our preliminary analysis, we are able to show that there is between 30–35% weight gain in these patients over just three to four years compared to control adult populations over the same period.

No. 43

Determining the Cause of Noncompliance of Vivitrol in the Treatment of Opioid Use Disorder

Poster Presenter: *Connie Chang, M.D.*

Co-Authors: *Lee Berman, Pooja Shah, M.D., Sehba Husain-Krautter, M.D., Ph.D., Nathan Centers, Joseph Esposito, M.D.*

SUMMARY:

Background: Vivitrol is an extended-release naltrexone injectable suspension used to prevent

relapse of opioid use disorder after opioid detox. This study analyses the correlation between the duration of Vivitrol administration and the side effects specific to duration of treatment. We were also able to ascertain the level of compliance with respect to the duration of treatment and determine the most common reasons for noncompliance. **Methods:** Data were collected from three treatment sites in southern Delaware. The treatment group included both male and female patients, ages 20–55, of Caucasian, African-American and Asian descent who had opioid use disorder, regardless of their previous psychiatric illness. Patients who are currently under treatment were excluded from the study. The number of patients in the study was 80. Data were analyzed using various biostatistical methods, equations and software. **Results:** This analysis includes 80 patients with opioid use disorder (mean age=33.77, 64.47% male, 35.53% female) who were administered once a month 380mg of intramuscular Vivitrol for an average of 3.75 months. We analyzed the results, which showed 15.79% of patients completed treatment, 36.84% of patients were found to be noncompliant, 19.74% were incarcerated and forced to take drug rehabilitation, 6.57% switched to using alternatives like methadone or Suboxone due to preference, 5.26% relapsed, and 2.63% stopped using it secondary to insurance problems. 13.16% of patients discontinued treatment secondary to side effects, out of which gastrointestinal (GI) side effects were noted in six percent of patients after two months of treatment. Other side effects noted were 1.31% prevalence for each of depression, joint pain and migraine after two months of treatment. Hair thinning was noted in one percent of patients after nine months of treatment. No correlation between race and side effects was noted. There was no clear evidence to show the positive correlation between the increase in the duration of treatment and compliance. **Conclusion:** In adult patients with opioid use disorder, the most common cause of discontinuation of treatment secondary to side effects has been found to be GI in origin and more prominent after four months of treatment. These results informed us of the challenges we face while treating patients with opioid use disorder who have preexisting GI illnesses. Other side effects should

also be kept in mind while considering reasons for noncompliance.

No. 44

Longitudinal Reflections on the Recent Political Shifts in the Prescription of Opiates

Poster Presenter: Anthony Bui

Co-Authors: Aaron Kheriaty, Andrei Novac, M.D., Robert G. Bota, M.D.

SUMMARY:

Attitudes toward opiate treatment and the corresponding medical, ethical and political considerations have gone through various cyclical changes in recent history. Pain treatment increased following World War II in response to concerns about the needs of injured soldiers, while in the 1980s, treatment decreased following concerns that pain and disability claims were overly subjective. Underlying these changes in prescriber habits are shifts in societal attitudes toward pain medication, sometimes arising as a counter-reaction to a prior movement toward increased or decreased treatment with opiates. Over time, this can lead to a pendulum-like swinging from one end of the opiate prescribing spectrum to the other. What has always been present is the theme of the need to balance adequate treatment of pain with the risk of overprescribing opiates that can lead to addiction or death. A Kantian ethical approach is briefly explored. Clinically, one defining difficulty in assessing pain is that it is multidimensional in nature and continues to rely on subjective reporting. It has been very difficult to come to a consensus about which clinical criteria could be used to identify those who require pain treatment while filtering out those who could be harmed by opiates. Absent clear ethical or medical criteria, courts have also been involved in placing punitive measures for perceived under- or overmedication. Hospitals, reacting to these decisions, placed pressure on providers to consistently monitor pain in patients, as have established measures such as detailed pain scales. In the setting of these different pressures and perspectives, this poster suggests an increased focus on individualized care rather than deriving treatment plans from any larger trend in pain management. Multidisciplinary care that addresses an individual's psychiatric, social and medical needs would be the

most appropriate way to render the best outcomes when managing pain.

No. 45

Levamisole Adulterated Cocaine: Would You Recognize It?

Poster Presenter: Manasa Enja

Lead Author: Suneela Cherlopalle, M.D.

Co-Author: Steven Lippmann

SUMMARY:

Background: Adulteration of cocaine with levamisole is a public health threat. Millions of Americans abuse cocaine, and it is a common illicit drug that often results in emergency department presentation in the United States. Up to 82% of the cocaine seized in the U.S. is contaminated with levamisole, according to a 2011 Drug Enforcement Agency report. The frequency of cocaine use and incidence of levamisole as an additive makes recognition and treatment an important clinical issue. **Methods:** We report a case of a 30-year-old White female with a past medical history of hepatitis C who presented to the emergency department with complaints of "skin rash and itching" on her arms that began that morning. Subsequently, she developed generalized myalgia following recent use of injectable cocaine. History revealed a similar rash two weeks earlier following her injecting a cocaine and heroin combination, along with a male "cocaine buddy" who developed a similar rash. Physical exam revealed tender violaceous non-blanching macular eruptions with erythematous borders on her arms, legs and torso, with multiple areas of central necrosis. A complete blood count, comprehensive metabolic panel and chest X-ray revealed neutropenia with no additional abnormalities; urine toxicology screen was positive for cocaine. A detailed history with complete review of systems and extensive lab work indicate probable etiology to be intravenous cocaine use history in this patient. A literature review assessing the correlation between cocaine use followed by skin rash was done. We searched PubMed, Google scholar and Psych Info using the terms "cocaine use," "cutaneous eruption," and "neutropenia." **Conclusion:** A review of literature using the above methods revealed case reports with similar presentation following cocaine use which was contaminated with levamisole. Since

cocaine is such a common illicit drug, emerging street adulteration of cocaine with levamisole is a public health concern. Levamisole is an anti-helminthic agent and immunomodulator, no longer prescribed in this country, but available in veterinary medicine. Cocaine-using patients often present with levamisole toxicity to emergency rooms in medical crisis. Clinically, it may present with nonspecific constitutional symptoms, cutaneous eruptions, leukopenia, vasculitis, and/or organ damage. Skin manifestations may include severe necrosis, especially of the ear lobes. Consider this diagnosis whenever there is cocaine use or presence, particularly in cases with skin lesions or neutropenia. Due to its short elimination half-life, testing for levamisole must be done quickly. Treatment depends on the case severity, with no established specific intervention. Abstinence from cocaine consumption is stressed along with vigorously encouraging and offering treatment for drug abuse. Physicians should be vigilant at recognition and treatment because of the degree of dangerousness in many cases.

No. 46

Methamphetamine-Induced Chorea: A Case Report and Literature Review

Poster Presenter: Maria E. Moreno, M.D.

SUMMARY:

Background: Recreational use of psychostimulants has significantly increased, especially those substances that can be easily produced and distributed. In the United States, methamphetamine and similar substances have increased the number of emergency department visits, hospitalizations and deaths per year. It is important for physicians to be familiar with the pharmacology, pathophysiology, and toxicology profiles and potential treatments options available. **Case:** A 23-year-old Caucasian male with a history of generalized anxiety disorder, bipolar disorder type II, obsessive-compulsive disorder, and nicotine and marijuana use disorder presented to the emergency department under an ECO (emergency custody order) for a two-day history of mania. The patient's mother reported that her son had not taken his medications (lithium and paroxetine) for the past two months. In the last month, the patient had lost approximately 30

pounds, stopped showering and was physically violent with family members. In the last two days, the patient has not slept, developed odd body movements and appeared to be talking to himself. In the past month, the patient reported using methamphetamine, cocaine, Xanax, and marijuana. The patient had most recently smoked methamphetamine two days ago. Vital signs were significant for tachycardia (114) and hypertension (160/69). Laboratory values including CBC, CMP, TSH, and UA were all within normal limits, as well as his EKG. Urine toxicology screen was positive for amphetamines and marijuana. Mental status exam was significant for thin, disheveled, malodorous male with pressured speech, tangential thought process, responding to internal stimuli, and choreiform movements in both the upper and lower extremities. The patient's mother denied any family history of neurological or movement disorders. The patient was aware of the involuntary movements, though he did not find them to be bothersome. He was placed on temporary detention order (TDO) to the psychiatric inpatient unit and was given olanzapine 2.5mg by mouth in the emergency department; he was started on olanzapine 5mg by mouth nightly. The following day, the patient's olanzapine was increased to 10mg by mouth nightly, and by the third hospital day, the patient's choreiform movements had completely resolved.

Discussion: Methamphetamine abuse causes an array of both acute and chronic symptoms. Its highly lipophilic structure allows it to quickly cross the blood-brain barrier. Methamphetamine binds to neurons and causes the release of monoamines including dopamine, norepinephrine and serotonin into the cytoplasm and causes neuroinflammation, oxidative stress and neurotoxicity.

Methamphetamine can induce dyskinesias and choreoathetoid movements through its effects on the basal ganglia. Neuroleptics and benzodiazepines have relieved symptoms in some patients, though in others, movement disorders continue years after drug use has ceased.

No. 47

Cannabis-Induced Visual Hallucinations: A Case Report

Poster Presenter: Arindam Chakrabarty

Co-Authors: Vinod Alluri, M.D., M.P.H., Talha Baloch,

M.D.

SUMMARY:

Mr. X., an 18-year-old African-American male with a history of psychiatric illness in childhood with no current psychiatric diagnosis and treatment, presented to the emergency room with abrupt onset of sensation of bees coming out of his ears and mouth, which started approximately 12 hours prior to presentation. He was extremely fearful and took deep forceful breaths, stating it was a way to expel the bees and remind himself to keep breathing. On mental status examination, the patient was scared and tearful and had visual, auditory and tactile hallucinations that he was acting upon in clear consciousness. He had bizarre behaviors and explanations related to these hallucinations. The patient admitted to smoking marijuana regularly and had been smoking it prior to playing basketball. The patient denied using any other substances like LSD, hallucinogenic mushrooms, cocaine, heroin, K2, spice, and other synthetic cannabinoids and admitted to using only marijuana and smoking cigarettes. He denied alcohol use, and his blood alcohol level was zero. His urine toxicology screen revealed presence of cannabinoids but was negative for other illicit substances. He was admitted to the psychiatric unit for further evaluation and management. He is a ward of DCFS, and per records, he had behavior issues when he was in fourth grade and was prescribed psychotropic medications, which he did not take, as his foster mother felt it made him worse. Per DCFS records, he did not have any current mental health diagnoses and was not on any psychiatric medications at the time of presentation. He was started on olanzapine and showed response at a daily dose of 7.5mg. His bizarre behavior gradually decreased, and hallucinations responded to treatment. After one week of treatment, he denied any hallucinations but still believed that he had in reality been infested by bees. On day 10 of treatment, he had a complete remission of symptoms. The patient was eventually discharged back to the care of DCFS with a plan for outpatient follow-up. A scientific literature review revealed scant data on visual hallucinations and cannabis use. Despite the clear definition of a dependence syndrome and cannabis-induced psychosis in the *DSM-5*, the media is flooded with reports of the

safety of cannabis use. There is growing data on cannabis-related psychosis in patients at risk for schizophrenia, but most data on visual hallucinations appear to be anecdotal, are available from non-scientific sources and report a transient nature of this phenomenon during periods of intoxication. In this poster, we present this case and discuss the available literature on cannabis-induced psychosis and hallucinations.

No. 48

Substance Use Disorders in Psychiatric Inpatients Reporting Childhood Trauma

Poster Presenter: Ajay K. Parsaik, M.D., M.S.

Co-Authors: Noha AbdelGawad, Jigar K. Chotalia, M.D., M.P.H., Scott Lane, Teresa Pigott, M.D.

SUMMARY:

Background: The prevalence of substance abuse in hospitalized psychiatry patients has been well documented. However, the impact of childhood trauma in relation to substance abuse and clinical outcomes is not well understood. We evaluated the frequency of substance abuse among inpatient adults with different psychiatric disorders who had reported at least one type of childhood trauma (general trauma, physical abuse, emotional abuse, sexual abuse). Additionally, we examined associations among trauma, substance abuse disorder (SUD) and several clinic outcomes.

Methods: Adult psychiatric inpatients (N=167) admitted during 2014 who reported at least one type of childhood trauma on the short form of the Early Trauma Inventory–Self-Report (ETISR-SF) were included. They completed Sheehan Disability Scale. In addition, Clinician-Rated Dimensions of Psychosis Symptom Severity Scale was administered. Multiple linear regression models were used to examine association between substance abuse and clinical outcomes. **Results:** By diagnostic category, patients were 56% bipolar disorder, 24% depressive disorder, 15% schizoaffective disorder, and five percent substance-induced mood disorder. The mean age was 35±11.5 years, and 53% were male. Sixty-three percent reported at least one SUD, while 22.2% had three SUDs. SUDs were as follows: cannabis (43.5%), alcohol (27.4%), benzodiazepines (8.2%), cocaine (8.2%), amphetamine (5.2%), opioid (4.2%), and barbiturates (0.75%). The prevalence of reported

general trauma was 90%, physical abuse 75%, emotional abuse 71%, and sexual abuse 49%. Substance abuse was comparable across different types of childhood trauma (all types between 62 and 65%). Regression models revealed that age (OR=0.1, 95% CI [0.03, 0.2], $p < 0.05$) and gender (male OR=2.0, 95% CI [1.65, 2.34], $p < 0.05$) were significant predictors of substance abuse. After adjusting for age, gender, previous hospitalization, and total ETISR-SF score, no associations were found between substance abuse and the following clinical outcomes: suicidal ideation, psychosis severity, hospital stay duration, 30-day readmission, or disruption in social and family life. **Conclusion:** The prevalence of substance abuse was high (over 60%) among psychiatric inpatients reporting childhood trauma. Substance abuse did not differ by the type of childhood trauma. Younger age and male gender were significant predictors of SUD. SUD did not independently predict clinical outcomes. Given the high prevalence, recognition of trauma and trauma-related therapeutic interventions may help address substance abuse problems in this inpatient group.

No. 49

Moderation of Buprenorphine Therapy Efficacy for Cocaine Dependence by Variation of the Preprodynorphin Gene

Poster Presenter: Huiqiong Deng, M.D., Ph.D.

Co-Authors: Robrina Walker, Ph.D., Ellen M. Nielsen, Ph.D., Sara C. Hamon, Ph.D., Walter Ling, M.D., Thomas R. Kosten, M.D., David A. Nielsen, Ph.D.

SUMMARY:

Objective: Identify genetic markers that modulate therapeutic response to treatment of cocaine dependence with buprenorphine+naloxone sublingual tablets (BUP, as Suboxone®). **Methods:** This multicentered, double-blind, placebo-controlled study randomly assigned 302 cocaine-dependent participants who had past-year opioid dependence/abuse, or past-year opioid use and a lifetime history of opioid dependence to one of three treatment conditions provided with injectable, extended-release naltrexone (Vivitrol®): 4mg per day BUP (BUP4; N=100), 16mg per day BUP (BUP16; N=100) or placebo (BUP0; N=102) for eight weeks, with three clinic visits per week and a treatment taper during week eight. Participants also received

once-weekly cognitive behavior therapy. DNA was obtained from 277 participants. Nineteen variants in eight genes were genotyped. Treatment response was determined by the percentage of cocaine negative urine samples per total possible urine samples over each one-week period, resulting in a treatment effectiveness score (TES), reflecting a combination of retention and abstinence. Repeated measures ANCOVA were used to evaluate the data. **Results:** A higher TES was observed in the BUP16 group ($p=0.004$), but not in the BUP4 group, when compared to BUP0 group. The rs1022563 A-allele carriers in the BUP16 group had higher TES across the study, from 49% at baseline to 55% at week seven, while those in the placebo group remained unchanged at 37% at baseline and week seven (experiment-wise $p=0.002$). The rs1997794 A-allele carriers in the BUP16 group had a TES of 43% at baseline and 65% at week seven, while in the placebo group, TES remained essentially unchanged at 44% and 43% (experiment-wise $p=0.024$). No difference was observed in the GG genotype groups of either variant between BUP16 and BUP0 treatment. **Conclusion:** These data implicate PDYN peptides and the pathways in which they participate as targets for the pharmacotherapy of cocaine addiction therapy.

No. 50

Screening for Substance Abuse: UDS vs. Self-Reported Clinical Interview

Poster Presenter: Alexandra N. Duran, M.D.

Co-Authors: Sarah Beasley, Robyn Douglas, Allison E. Engstrom, B.A., Melissa Allen, D.O., Teresa Pigott, M.D.

SUMMARY:

Background: Substance abuse disorders are comorbid with other psychiatric disorders, and previous research has shown evidence of comorbidity between substance abuse and etiology and prognosis of psychiatric disorders. Self-report tools are used to assess for substance abuse in individuals, but the validity of substance abuse self-report tools—such as the NIDA Quick Screen and ASSIST—has been challenged in past studies.

Methods: Records of 357 adult patients admitted to a unit of a free-standing psychiatric hospital in Houston, TX, between July 2014 and July 2016 were

evaluated. Substance abuse was evaluated using the NIDA Quick Screen (self-report assessment of alcohol, tobacco, prescription drug, and illegal drug use in the past year), and patients with positive screens were evaluated with the NIDA Modified ASSIST v2.0 (risk level based on substance abuse patterns in the past three months in 10 substance categories). Uniform Data System (UDS) results were obtained from 334 of the sample patients. **Results:** Of 357 patients, 50% were male, with mean age of 35. Of 334 UDS results, 33% were positive. Positive NIDA Quick Screens were found in 40.3% of patients, and the most common reported abused substance within one year of admission was cannabis at 87%, followed by cocaine at 58%, methamphetamines at 34%, hallucinogens at 33%, sedatives at 32%, prescription opioids at 25%, prescription amphetamines at 22%, street opioids at 19%, other substances at 15%, and inhalants at 14%. Reported abuse of two or more substances was present in 66% of patients. The most common substance abused within three months of admission was cannabis at 74%, followed by cocaine at 26% and methamphetamines at 17%. UDS results were positive in 47% of these patients, compared to 21% in NIDA Quick Screen negative patients. In patients with positive NIDA Quick Screens, the diagnoses were bipolar disorder in 64%, psychotic disorder in 24% and unipolar depression in 12%. The most commonly reported substance of abuse among all diagnoses was cannabis, followed by cocaine (respectively, 87% and 55% in bipolar disorder, 88% and 62% in psychotic disorder, and 82% and 65% in unipolar depression). **Conclusion:** In the selected inpatient population, two-fifths of the total patients self-reported substance abuse on the NIDA Quick Screen, and UDS was positive in only one-third of all patients with UDS results. Of those with positive NIDA Quick Screens, over four-fifths reported cannabis abuse within the past year, two-thirds reported cocaine abuse, and another one-third reported methamphetamine, hallucinogen or sedative abuse. Abuse of two or more substances was reported in two-thirds of patients. Among this same population with self-reported substance abuse, less than half had positive UDS results. These results indicate that in addition to UDS, patients should be screened for substance abuse, as UDS

alone will miss history of substance abuse in some patients.

No. 51

Transient Psychosis—Methamphetamine-Associated Versus HIV-Induced: A Case Report

Poster Presenter: Karuna S. Poddar, M.D.

SUMMARY:

Background: The prevalence of new-onset psychosis among patients with HIV infection ranges between 0.23 and 15.2%. Amphetamines such as meth can produce psychotic symptoms even in persons with no history of a primary psychotic disorder. Strong associations between methamphetamine use and HIV-related sexual transmission behaviors are noted across studies of MSM and correspond to increased incidence for HIV and syphilis in such individuals.

Objective: Determine if methamphetamine-associated psychosis with HIV-induced psychosis can be differentiated. We also wanted to understand if knowing this difference would benefit the patient's overall management. **Case:** This is a case of 49-year-old African-American male, living with his male friend, with history of AIDS (noncompliant with HAART, with CD4 count of 20, and high viral load in January 2016), Kaposi's sarcoma and depression admitted on the medical-surgical floor for AMS. He was brought in by the EMS after found to be living in poor condition and covered by stools. He was investigated in detail for possible infective sources. The CSF was negative for any infection (although previously had one instance of positive RPR). The patient's previous MRI showed possibility of PML and HIV leukoencephalopathy on left brain. However, the newer MRI was not done. He was receiving antibiotics as prophylaxis. However, on this admission, he did not get restarted on his ART, as he was found to have specific HIV-1 genotype and resistant to NNRTIs. Psychiatry was consulted as behavioral rapid response team (BRRT) for bizarre delusions in the evening of his admission. He was managed with 2mg haloperidol as needed. Continued assessment also revealed his lack of capacity to accept any management. Within two days of his first assessment, his repeat assessment revealed the patient to have complete capacity. The other significant lab work on this admission was UDS positive for meth. The patient has always stayed

noncompliant with his medications and hospital follow-ups. **Discussion:** Methamphetamine use is seen predominantly in MSM people for increasing sexual drive and confidence, but in turn, use increases risky HIV behavior and multiple sexual partners. Meth is known to induce risky behavior, noncompliance and resistance against NRTIs, increasing HIV viral load and reducing CD4 count, thus in turn making HIV progression worse. Abstinence from meth induces depression; hence, these patients bounce back on meth to receive their high. HIV patients with substance use history and positive UDS, specially methamphetamine, should receive blood levels of these drugs to observe direct link of remission with decrease in meth levels. Their pharmacological management should aim to provide typical or atypical neuroleptics. Special focus should include giving behavioral therapy and resources, with an aim to prevent the use of substances in the long term. This will enable the patients to maintain compliance and prevent further risky behaviors, thus improving quality of life.

No. 52

Dual Cases of LSD-Induced Prolonged Psychosis

Poster Presenter: Shahan Sibtain, M.D.

Co-Authors: Tarek Aly, M.D., Madia Majeed, Asghar Hossain

SUMMARY:

Hallucinogens are common substances of abuse in the United States, causing significant impairment in memory and orientation. LSD, a potent hallucinogen, is commonly used to elicit a mood-changing effect. Even though LSD is not seen as being life-threatening, it can result in complications that can cause severe impairment in one's mental status and result in an acute hospitalization reflecting a severe psychotic episode. Two such cases were reported within two days of each other. First, a 17-year-old female was brought to the ER by her parents due to significant "bizarre behavior" for five days. She used an unspecified amount of LSD, which resulted in preoccupation with the fear of dying, disorganized thinking, and visual and auditory hallucinations. Second, a 20-year-old female was brought to the ER by her mother four days after using an unspecified amount of LSD due to disorganized behavior, bizarre somatic delusions and persecutory ideations. In the

context of no previous psychiatric symptoms, both cases recently tried LSD for the first time and had "bad trips" in which those around them attempted to placate their symptoms with constant supplementation of cannabis for at least 24 hours. Each patient received a different treatment regimen, and we will present each course of hospitalization and the progression of symptomatology with these modalities.

No. 53

Methamphetamine-Induced Choreoathetosis

Poster Presenter: Gabriela Pachano

SUMMARY:

Mr. Z., a 23-year-old male with a psychiatric history of obsessive-compulsive disorder, generalized anxiety disorder, marijuana dependence, nicotine dependence, provisional diagnosis of bipolar II disorder, and reported attention deficit/hyperactivity disorder with no past medical history presented to the ER under an ECO issued by a family member. His family member reported that, in the past month, the patient had displayed aggressive behavior, had significant weight loss and was not attending to his activities of daily living. In the days preceding his presentation, his aggressiveness had increased; he had not been sleeping, had rapid speech, was talking to himself, and was displaying odd movements of his extremities. Upon initial interview, the patient admitted he had been inconsistently taking his home lithium and paroxetine for three months prior to presentation. He also noted recently using various substances, including smoking methamphetamine nearly every day for the past month and intermittently using marijuana, Xanax, cocaine, smoking "snow-capped mountains" (cocaine sprinkled on marijuana) and using "eight balls." He was noted to have writhing and twisting movements of his arms and legs, which were involuntary, however not distressing to him. His UDS was positive for amphetamines and cannabinoids, and the rest of his workup was within normal limits. He was given 5mg of olanzapine, and in approximately 24 hours, his choreoathetotic movements resolved. The purpose of this poster is to present this interesting case, as very few cases of methamphetamine-induced choreoathetosis have been reported. It can also lead to a discussion of

whether the administration of antipsychotics treated the symptoms or it was simply the natural course of stopping methamphetamine use while hospitalized.

No. 54

Nicotine Toxicity: A Case Report on Nicotine Overdose-Induced Seizure

Poster Presenter: Saoda Shuara, M.D.

Co-Authors: Limei Yang, Ravipreet Singh

SUMMARY:

Nicotine is one of the most commonly abused substances worldwide. Though much is written about the chronic effects of nicotine dependence, little documentation exists regarding nicotine toxicity and overdose. Initial symptoms of nicotine poisoning are mainly due to stimulatory effects and include nausea, diaphoresis, tachycardia, seizures, etc. A later period of depressor effects follow in severe cases, which include hypotension, bradycardia, central nervous system depression, and coma. In this poster, we present the case of a 24-year-old schizophrenic male who, during his psychiatric inpatient stay, relapsed into multiple seizure episodes following mastication of several nicotine patches. This patient recovered without any complication; however, a myriad of other symptoms could have occurred. In this report, we detail symptoms of nicotine poisoning and further discuss various nicotine-containing products and their lethal doses.

No. 55

Agranulocytosis in Cocaine Abuse: A Case Report of Possible Levamisole-Adulterated Cocaine Use

Poster Presenter: Geoffrey E. Peckover, M.D.

Co-Authors: Divya E. Jose, M.D., Mariah Smith, Norma Dunn, Ronnie Swift

SUMMARY:

Multiple illicit drugs have been implicated with agranulocytosis in the past. In recent years, there has been an increase in reports of levamisole-tainted cocaine being the culprit. As of July 2009, the DEA reported that 69% of cocaine in the U.S. contained levamisole. Levamisole was originally used as an anti-rheumatic drug with immunomodulatory activity since the 1970s but withdrawn from the market due to side effects including agranulocytosis

and thrombocytopenia. It is now used as an anti-helminthic agent in animals. Levamisole is a common cutting agent in cocaine to add volume as well as possibly upregulating opioid and dopamine receptors, increasing the dopamine concentration in the cerebral reward pathway. We report a case of severe agranulocytosis in a patient using cocaine most likely adulterated with levamisole. A 45-year-old male presented to the ED for chest pain after snorting cocaine. He reported using 3g of cocaine intranasally every day. The patient was admitted to medicine. Lab work showed a WBC count of 1,160 with an ANC of 0. Review of his medical record showed normal values for WBCs and ANC in the past. A medical workup was begun to evaluate the patient for causes of neutropenia. His chest pain resolved, and he requested to leave, despite his unexplained neutropenia. He was deemed to have capacity to sign out AMA. It is noteworthy that his neutrophils began to increase while in the hospital without any intervention. One month later, he returned with similar complaints. Lab work showed 790 WBCs, ANC of 0 and positive for cocaine. He was admitted and was placed on reverse isolation, and prophylactic antibiotics were started. Hepatitis, HIV, antibodies to dsDNA, and ANA were negative. C-reactive protein, complement, TSH, copper, and hepatic function were all normal. Cocaine adulterated with levamisole was considered, but testing was not available. As with the previous visit, his WBCs and neutrophils increased rapidly without any intervention. On the third day of admission, he requested to sign out AMA. He was again found to have capacity and was allowed to leave. Ten days later, he returned for follow-up. Labs were drawn, and his WBCs were 2,500 and ANC was 700, and he was negative for cocaine. Levamisole exposure through adulterated cocaine abuse should be routinely considered and ruled out in the diagnosis of unexplained agranulocytosis. These patients are at high risk for infection, with absolute neutrophil counts ranging from 0 to 3,000. The presentation of levamisole toxicity varies from mild cutaneous symptoms to severe vasculitis and necrosis. Given levamisole's rapid absorption and short half-life, a definitive connection may be difficult to establish, even with a positive cocaine screen. As such, increased physician awareness is fundamental to ensure proper diagnosis and treatment of

complications associated with the use of levamisole-contaminated cocaine.

No. 56

A Case of Agitated Delirium in the Setting of Acute Withdrawal From Unscheduled Benzodiazepine Analog Etizolam

Poster Presenter: John Nathaniel Alvarez

Co-Authors: Sean Comeau, Anthony Bui, Alexis A. Seegan, M.D., Lawrence Faziola

SUMMARY:

Etizolam is a thienotriazolodiazepine anxiolytic that is structurally similar to benzodiazepines and acts as a full agonist at the GABA receptor. Etizolam is unscheduled by the U.S. Drug Enforcement Agency but can be obtained in the U.S. over the Internet or in local retail shops as a “research chemical.” However, etizolam is available with a prescription in Japan, Italy and India for anxiety and insomnia. Clinical studies have shown that etizolam is approximately 10 times as potent as diazepam in producing hypnotic effects. We present a case of a 37-year-old Caucasian female with no prior psychiatric history who presented to the emergency department with several days of disorganized thought and speech, paranoia, auditory hallucinations, Lilliputian hallucinations, and decreased sleep. On admission, the patient was oriented to person and place, conversed appropriately, and had stable vital signs. On the day after admission to the acute adult inpatient psychiatric unit, the patient abruptly developed tachycardia into the 170s, exhibited psychomotor agitation, and developed dysarthria and dysprosody of speech. Despite administration of multiple emergency medications, her presentation continued to decline, and she was observed to be hyperkinetic, writhing on the floor, disoriented and hyperverbal with unintelligible speech. Her family reported that she had been using sublingual liquid etizolam for the past two months, which she obtained illicitly over the Internet in order to treat symptoms of anxiety and insomnia. Due to autonomic instability, she was transferred to the medical unit for telemetry monitoring. The report of etizolam misuse raised suspicion for withdrawal delirium, which was treated with symptom-triggered doses of lorazepam. She ultimately required transfer to the intensive care

unit when she necessitated intravenous lorazepam and diazepam. After a 24-hour period of administration of intravenous benzodiazepines, she demonstrated significant improvement, with resolution of agitation, confusion and psychosis. As a benzodiazepine analog, etizolam has the ability to induce tolerance and withdrawal symptoms similar to more familiar benzodiazepines, but as an analogue to a Drug Enforcement Agency schedule IV substance, it is not regulated under the Federal Analogue Act. Providers should recognize etizolam’s effects and potential for life-threatening withdrawal given that it is easily purchased over the Internet without a prescription.

No. 57

A Survey on the Use of Prescription Monitoring Programs: Does a Mandate Make a Difference?

Poster Presenter: Selena Magalotti, M.D.

Co-Authors: Michele Knox, Ph.D., Karyssa Schrouder, Denis Lynch, Ph.D., Deepa Ujwal, M.D., Kristi Skeel Williams, M.D., Lance Feldman, M.D.

SUMMARY:

Background: The purpose of this study was to evaluate practices and attitudes toward prescription monitoring programs (PMPs) by physicians and if mandated use by state law influences physician behavior. In Ohio, the PMP was voluntary from its establishment in 2006 until 2012, when using the PMP was mandated by state law when prescribing certain scheduled substances. In North Carolina, using the PMP is currently voluntary, except for opioid treatment programs (OTP) for addiction, where the standard of practice (not state law) is for physicians to use the PMP when a patient is admitted to an OTP and periodically thereafter.

Methods: A 13-item survey was created to assess participant awareness and utilization of their state PMP. The survey was provided to residents/fellows and attendings over 10 months at departmental meetings in emergency medicine, internal medicine, neurology, pediatrics, and psychiatry at a large university-based hospital in Ohio after PMP use was mandated by state law. The survey was also provided to attendings at a moderate-sized hospital in North Carolina, where use of the PMP for routine care is not mandated by state law. Data were compared between these two groups, and also

compared to previously published data from a study conducted at the same Ohio hospital before PMP use was mandated by state law. Chi-square analyses were used to examine the data. **Results:** 128 physicians responded to the study (62 attendings, 66 residents/fellows). Results indicate no difference in the proportions of sampled physicians reporting awareness of the PMP in Ohio pre-mandate versus North Carolina ($\chi^2=2.70$, $p=0.10$), in Ohio pre-mandate versus Ohio post-mandate ($\chi^2=1.56$, $p=0.22$) and in Ohio post-mandate versus North Carolina ($\chi^2=3.54$, $p=0.17$). Regarding actual PMP use, results show no difference in the proportion of sampled physicians using the PMP in Ohio pre-mandate versus North Carolina ($\chi^2=0.55$, $p=0.46$). Results do indicate a significantly higher proportion of sampled physicians using the PMP in Ohio post-mandate versus Ohio pre-mandate ($\chi^2=15.66$, $p<0.0001$) and in Ohio post-mandate versus North Carolina ($\chi^2=12.76$, $p<0.0001$). **Conclusion:** There is higher use of the PMP by attending physicians and residents/fellows with mandated use, even without significant change in awareness of the PMP. Based on the results of this small study, if a change in physician behavior is desired, it is possible that PMP use mandated by state law would be beneficial.

No. 58

An Opiate-Dependent Pregnant Patient at a Non-MMT Acute Care Facility

Poster Presenter: Krupa Pathak

Co-Authors: Kris Ruangchotvit, Jasmin G. Lagman, M.D., Raja Mogallapu, M.D., David Greenspan

SUMMARY:

Objective: Discuss risks associated with opiate use during pregnancy, provide treatment recommendations for opioid-dependent pregnant women and describe the role of multidisciplinary communication in managing opiate-dependent pregnant women. **Background:** In opioid-dependent pregnant patients (ODPP), initiating methadone maintenance therapy (MMT) is the recommended standard of care. An ODPP admitted to an acute care facility at risk for opioid withdrawal is allowed to receive a narcotic until the patient is transferred to the proper treatment facility. Nursing staff, social worker, OB/GYN, and addiction specialist must work collectively to manage and care for this patient

population. We present a case of a pregnant woman in her first trimester with opiate dependence not enrolled in a federally approved MMT program who was admitted for inpatient psychiatric treatment.

Discussion: During pregnancy, opioid withdrawal exposure to fetus and placenta is associated with an increased risk of fetal growth restriction, abruptio placentae, fetal death, preterm labor, and intrauterine passage of meconium. The standard of care in treating ODPP is initiating MMT. However, if the hospital is not MMT licensed, Title 21 CFR Part 1306.07 grants a physician at an acute care facility the ability to administer narcotics to a patient for up to three consecutive days for the purpose of relieving withdrawal symptoms while setting up MMT. Methadone could have been initiated as soon as the plan for MMT was agreed to. Research has shown initiating MMT leads to better prenatal care/compliance and a decrease in relapse, IVDA-associated illnesses and illegal activity.

Multidisciplinary communication among nursing staff, social worker, OB/GYN, and addiction specialist is essential while the patient is in an acute care facility to allow for proper continuity of care.

Conclusion: Opioid maintenance therapy is part of a complete comprehensive treatment approach for opioid-dependent pregnant women. Opioid-dependent pregnant patients not on a methadone maintenance program are best referred to a facility that meets the federal guidelines to administer these medications. Physicians at an acute care facility may administer narcotics (including methadone) to an ODPP for the purpose of relieving withdrawal symptoms while arrangements are made for MMT. A multidisciplinary team is essential to address a pregnant patient's opioid use disorder to prevent maternal-fetal complications and allow for proper continuity of care.

No. 59

Like a Moth to the Flame: Pica vs. Addiction Behavior in a Case of Mothball Consumption Co-Occurring With Substance Use Disorders

Poster Presenter: Anne Clark-Raymond, M.D.

Co-Author: Jonathan Avery, M.D.

SUMMARY:

We present the case of a 31-year-old multiparous woman with a history of severe alcohol use disorder,

tobacco use disorder and prior cannabis use disorder who presented with progressively worsening bilateral visual loss due to toxic leukoencephalopathy in the setting of heavy mothball consumption for several years. We propose that such pica-like behaviors may be more common in patients with substance use disorders and may represent a unique phenomenon that blurs the boundaries between traditional pica and addiction. There are numerous reports in the literature of toxicity from paradichlorobenzene (PDB), an aromatic hydrocarbon that is the primary component of mothballs and other common household insect repellent and cleaning products. This toxicity can result in a host of complications, namely neurologic, resulting in a toxic leukoencephalopathy, but also pulmonary, renal, hematologic, and dermatologic in nature. PDB toxicity can occur via ingestion of the substance, assumed to be in the context of pica (with its own associations of pregnancy and iron-deficiency anemia) or via inhalation to produce a “high.” However, to date, the potential link between the pica-like aspects of the behavior and the addictive qualities of consumption have not been widely investigated. In light of case reports suggesting a putative role for decreased baseline dopamine transmission in pica, we postulate that the pica behavior as seen in our patient may indeed be reward seeking. Such a distinction between traditional pica and addiction behaviors may be relevant for earlier identification of dangerous pica behaviors in patients with known substance use disorders and may help to guide treatment toward strategies that are most helpful in treating addiction.

No. 60

Difficulties in Managing Alcohol Withdrawal in a Patient With Comorbid Seizure Disorder

Poster Presenter: Aakash Verma, M.D.

Co-Authors: William Rea, M.D., Kathryn Q. Johnson, M.A., Randy McKenzie, D.O.

SUMMARY:

Mr. V. is a 31-year-old Caucasian male with history of major depressive disorder, unspecified anxiety disorder, alcohol use disorder, and comorbid seizure disorder. These conditions are complicated by poor treatment adherence. He presents to the emergency

department (ED) with a complaint of “my head hurts.” Additionally, he reported thoughts of suicidal ideation and requested alcohol detoxification. In the past month, he was admitted three times for management of alcohol withdrawal, one medical and two psychiatric. Seizure activity occurred during both psychiatric admissions and resulted in transfer to the ED. After both transfers, the patient left the ED against medical advice. Current alcohol use was reported as “24 beers” and two 750mL bottles of liquor daily. The patient reported drinking on the day of admission, and his blood alcohol level was 0.325. In the first twelve hours of admission, the patient received chlordiazepoxide 200mg, lorazepam 4mg and a single dose of gabapentin 300mg. The patient’s vitals during the night showed systolic blood pressures around 160mmHg and diastolic blood pressures above 100mmHg. After the patient’s vitals failed to improve, the following changes were made: chlordiazepoxide 200mg every two hours until sedated, phenytoin ER 200mg once and then 100mg three times daily, and gabapentin 300mg three times daily. Other medications included sertraline 100mg daily, meloxicam and naproxen as needed. With these interventions, the patient’s condition improved. In the course of 24 hours, the patient received phenytoin ER 400mg, gabapentin 1,200mg, lorazepam 6mg, and chlordiazepoxide 1,400mg. Despite these interventions, the patient had witnessed seizure activity on the unit and was transferred to the ED. After initial evaluation, he was transferred to intensive care treatment, intubated and given intravenous benzodiazepine treatment. In this poster, we examine the treatment of refractory alcohol withdrawal and mechanisms of why some patients are treatment resistant. We will review pharmacological interventions for the management of alcohol withdrawal. We will also do a brief analysis of hospital guidelines related to the management of alcohol detoxification.

No. 61

Phencyclidine-Induced Catatonia Effectively Treated With Benzodiazepines in a Female With No Psychotic History: A Case Report

Poster Presenter: Kristina Quiambao Cowper

Co-Author: James Graham III

SUMMARY:

Phencyclidine use as a recreational drug is growing rapidly. There is a high incidence of phencyclidine-intoxicated patients presenting to the emergency department, often with psychotic and/or aggressive symptoms, but infrequently with catatonia. Most cases of catatonia present in psychiatric illnesses, but are rarely associated with recreational drug use. We present a case of a 34-year-old Hispanic female with no history of psychiatric illness intoxicated with phencyclidine, presenting with catatonia and successfully treated with benzodiazepines. Her catatonia manifested initially in the medical emergency department as being selectively mute. In the emergency department, she had a workup for altered mental status, which showed an unremarkable CT head scan, negative salicylate and Tylenol levels, BAL of zero, and no abnormalities in BMP/CBC/TSH. Her urine drug screen was positive for phencyclidine. When she was transferred to the psychiatric emergency department, she remained selectively mute, staring, with bizarre posturing and waxy flexibility. She scored 31 on the Bush-Francis Catatonia Rating Scale. She was given a lorazepam challenge, which successfully treated her catatonic signs. This case illustrates the manifestation of catatonia while intoxicated with phencyclidine and its quick resolution with benzodiazepines. Catatonia can present itself not only in psychiatric illnesses, but also in recreational phencyclidine use. Furthermore, no matter the etiology of catatonia, it is a severe motor syndrome that can be treated with benzodiazepines, and recognition of catatonia is critical to initiate successful treatment.

No. 62
Pokémon Go and Its Serious Effects on Relationships

Poster Presenter: Reena Kumar, M.D.
Co-Author: Kinnari Birla

SUMMARY:

Case: We present an interesting case of a patient with depression, anxiety, caffeine, and nicotine dependence receiving psychotherapy for his anxiety and irritability issues and showing significant improvement in his relationships with his colleagues and wife who suddenly showed deterioration and started getting into trouble at work. The only new development was that he started playing Pokémon

Go. After a few sessions focused on improving his insight into his game addiction, he decreased his play time and noted significant improvement in his behavior. **Conclusion:** We report this subtle but crucial presentation to increase awareness about game addiction and how, with a few sessions of insight-oriented psychotherapy, patients can show significant improvement in their behavior.

No. 63
Diverted Marijuana Use in an Adolescent Population

Poster Presenter: Gloria Martz, D.O.

SUMMARY:

Diverted marijuana use has become a trend in states bordering those with legalized marijuana. Oklahoma is a border state to Colorado, which recently legalized marijuana and its products. Border states have seen an influx in marijuana obtained legally in these states. The diversion of these products has resulted in increased use in other states and legal questions and repercussions. In this study, adolescents admitted to an inpatient mental health and substance abuse facility were surveyed for diverted marijuana use from Colorado. Study participants were surveyed for use, type of diverted product, how the product was obtained, and use of edible products.

No. 64
Ventricular Tachycardia in a Patient on High Dose of Methadone

Poster Presenter: Rimple Manan
Co-Authors: Saima Warraich, Rana Tahir, Adela Gerolemou, Oleg Isakov, Sanila Rehmatullah

SUMMARY:

Background: Methadone is a synthetic opioid that has been successfully used in treating heroin addiction and chronic pain syndrome in palliative care for an extended period of time. This drug is a potent blocker of the delayed rectifier potassium ion channel, which may result in corrected QT (QTc) interval prolongation and increased risk of torsades de pointes (TdP) in susceptible individuals. This effect of prolonged QTc is seen to be dose dependent. **Case:** The effect of methadone leading to prolonged QTc was seen in a patient who was

admitted to Brookdale Hospital following an episode of syncope associated with dizziness, palpitations and severe shortness of breath. Upon arrival to the emergency room, it was noted that the patient was having ventricular tachycardia (Vtach) with heart rate up to 200 beats per minute, and EKG showed ventricular paced rhythm with prolonged QTc of 712ms. Lab work was notable for mild hyponatremia (129mEq/L) and mild hypokalemia (3.3mEq/L), thrombocytopenia (64,000/mL), and mildly elevated troponin (0.103ng/mL). As per a stress test performed later, the patient did not have stress-induced ischemia, and echocardiogram was also seen to be within normal limits. The patient reported that he had been on methadone maintenance for the last 20–25 years as a result of opioid dependence. He also admitted having a history of cocaine use and alcohol use disorder, currently in full remission. The patient was seen as a consult by the department of psychiatry for methadone taper (240mg per day), which was most likely attributing to his prolonged QTc (712ms) resulting in Vtach. The methadone dose was tapered by 5–10mg per day, and he was stabilized on 100mg per day by the end of his hospital stay. The patient was discharged with stabilization on 100mg of methadone, which decreased his QTc (493ms) prior to discharge. There was an exponential decrease in QTc value as the dose of methadone was tapered down. This goes in favor of the patient's high dose of methadone causing cardiac toxicity as evidenced by the markedly prolonged QTc value. This patient was on a high dose of methadone, which led to the increase in his QTc and resulted in a near-death experience. It is interesting to note that with tapering of methadone, his QTc showed a marked improvement and decreased from 712ms to 493ms. **Conclusion:** Methadone-induced torsades de pointes is a potentially fatal complication of methadone therapy that needs more awareness. Periodic EKG monitoring of the QTc interval and discontinuation of offending medications in the setting of prolonged intervals should be considered. Other issues such as electrolyte disturbances, especially hypokalemia, should be corrected. Alternative agents such as buprenorphine, a mixed opioid antagonist/agonist, should be considered in patients on a high dose of methadone, as it is less cardiotoxic.

No. 65

Scope and Utility of Transcranial Magnetic Stimulation (TMS) in Addictive Disorders: An Updated Literature Review

Poster Presenter: Tapan Parikh, M.D., M.P.H.

Co-Authors: Ramkrishna D. Makani, M.D., M.P.H., Umang Shah, Basant K. Pradhan, M.D.

SUMMARY:

Background: Since its inception in 1985 as a diagnostic and therapeutic tool in neurology, therapeutic effects of TMS are being studied increasingly in psychiatry as well. After the FDA approved rTMS for treatment-resistant depression (2008), its therapeutic role has been extended to anxiety disorders, PTSD, ADHD, and, more recently, addiction. However, research on its efficacy in addiction is in its infancy phase. **Methods:** Articles including randomized controlled trials, classical articles, and meta-analysis from single- and multicenter sites were retrieved online from PubMed, PsycINFO, Psychiatry Online, and Cochrane Library using MeSH terms transcranial magnetic stimulation, addiction, substance abuse, nicotine, alcohol, cocaine, methamphetamine, and food in various appropriate combinations, with search limited to English language and articles from September 2016 and prior. **Results:** In trials including sham TMS as a control, TMS was targeted at different brain areas such as dorsolateral prefrontal cortex, insula, superior frontal gyrus, anterior cingulate cortex, medial prefrontal cortex, and temporo-occipital area using various frequencies (1Hz, 10Hz, 15Hz, and 20Hz). The putative mechanism of action of TMS is by modulation of neurotransmitters such as dopamine and glutamate in the dorsolateral prefrontal cortex (DLPFC) and the fronto-thalamic tri-circuits, which influence the dopamine in the nucleus accumbens (reward circuit). Mostly stimulation of the DLPFC and insula by use of high-frequency (10Hz, 120% MT) rTMS using H-coil (otherwise called deep rTMS, which had deeper penetration) has been shown to reduce drug craving in adults 21–70 years old, with effects lasting for six months after treatment in nicotine addiction. Data revealed significant reduction in nicotine cravings (N=266/266; nine of nine studies), cocaine related cravings (N=67/67; three of three studies), food

addictions (N=99/131; four of seven studies), and alcohol-related cravings (N=58/159; two of six studies and four case reports). Of note, three of seven studies on food cravings and four of six studies on alcohol showed no effect on addictions. Only one amphetamine study (N=10) was found, which showed transient increase in cue-induced cravings. No studies were found for marijuana, opiates, benzodiazepines, or hallucinogens. TMS has been consistently proven to be safe, with no mention of any significant adverse effects. **Discussion:** TMS has a promising therapeutic role in addiction. Because brain areas modulating addiction are mostly subcortical (mostly medial PFC), needing deeper penetration, deep rTMS using H-coil and higher-frequency stimulation with higher motor threshold (MT, 120%) are better compared to the figure-of-eight coil used in conventional rTMS. Also, brief cue exposure prior to application of deep rTMS (otherwise called reconsolidated rTMS) has been shown to be more efficacious, at least in nicotine addiction studies (33% remission vs. 23% remission). Further studies with larger patient populations are needed to confirm the safety and efficacy of this treatment.

No. 66

Heroin-Induced Toxic Leukoencephalopathy in Appalachia: A Case Report and Literature Review

Poster Presenter: Laura G. Hunt

SUMMARY:

Background: The abuse of prescription and illicit opioids has increased dramatically over the past decade. In particular, heroin use has risen due to its wide availability, low cost and tighter prescription opioid regulation. One rare and potentially lethal complication of heroin use is heroin-induced toxic leukoencephalopathy (HITL). First described in 1982, HITL most often occurs following the inhalation of heroin vapors, though it has also been described following intranasal and oral ingestion. We describe the case of a 36-year-old male with altered mental status whose workup revealed HITL. We discuss the clinical presentation, illness course, treatment options, and prognosis for patients with this complex condition. **Case:** Mr. S., a 36-year-old Caucasian male with a psychiatric history of opioid use disorder, presented to the emergency department after being

found at home confused and mute. Per parents, he was in his usual state of health four days prior. He was observed behaving oddly at work the following day, prompting a coworker to drive him home. Nearly 72 hours passed before he was discovered by his parents. Neurological examination showed jerking of right upper and lower extremities persisting during sleep, increased tone on right side, mutism, and inconsistent ability to follow commands. On psychiatric examination, Mr. S. was frustrated at his inability to communicate. Initial workup including serum blood counts, electrolytes, liver and renal function, thyroid, HIV, hepatitis, ANA, ammonia, and RPR were unrevealing. Urinalysis and urine drug screen were negative, and lumbar puncture results were normal. Non-enhanced head CT was normal, and CT angiography revealed left M1 moyamoya vascularization felt to be incidental. Initial MRI demonstrated abnormal signal primarily in the left frontal, parietal and occipital lobes, with obscuring of the gray-white matter junction. The results suggested drug-induced toxic leukoencephalopathy. Additional history revealed that Mr. S. had used been inhaling heroin vapors the evening prior to symptom onset. The patient was hospitalized for a total of six weeks including physical rehabilitation. His right-sided jerking and weakness improved with residual mild parkinsonian tremor. Receptive communication mildly improved, though his expressive language remained impaired. Repeat MRI seven months later demonstrated worsened white matter changes bilaterally. **Discussion:** The case of Mr. S. illustrates one possible presentation, course and outcome for HITL. However, the literature demonstrates significant variability. While some individuals recover completely, others suffer lasting neurological deficits and some undergo a course that progresses to death. Neuroimaging can be very useful for diagnostic purposes, but symptom severity correlates poorly with radiologic findings. Although uncommon, HITL will likely be encountered more frequently as a consequence of the overall rise in heroin use.

No. 67

Retrospective and Prospective Cohort Analysis to Compare the Effectiveness of Suboxone Vs Vivitrol on Opioid Relapse Prevention and Quality of Life

Poster Presenter: Muhammad Navaid Iqbal, M.D.
Co-Authors: William Levitt, M.D., Pooja Mehta, Adel Nesheiwat, Asghar Hossain

SUMMARY:

Opiate addiction has reached epidemic proportions. Suboxone and Vivitrol are two effective yet different methods to treat dependence. Nearly 50% of the patients who come to our clinic at Bergen Regional Medical Center have some form of addiction. Given that we have such a high substance use population, our clinic offers both treatment modalities. As such, we desire to study and compare these two medications. While numerous studies have been done to compare efficacy of the two by looking at the number of relapses, our study compares the quality of life achieved by patients taking Suboxone versus Vivitrol. Patients with opiate use disorder will be treated either with Suboxone or Vivitrol and followed over the course of one year. Quality of life will be measured at zero, six and 12 months via the EQ5D and SF 6D scales. In the end, we want to show through this poster an integrated approach in treating opioid use disorder with or without comorbid psychiatric illnesses.

No. 68
Severe Agitation and Aggression in Fetal Alcohol Syndrome

Poster Presenter: Syed E. Maududi, M.D.
Co-Authors: Chirag Patel, Sohi Gobind, Asghar Hossain

SUMMARY:

We present a case of a 14-year-old boy who was an internationally adopted post-institutional child. He was adopted at the age of three years and nine months from Latvia (former Soviet Republic) and was brought to the U.S. There is no information on his birth history except that he showed prenatal impairment of CNS soon after birth and was diagnosed with hypoxic encephalopathy. He was found at an abandoned shack, subjected to hunger, cold and neglect of his physical needs. His weight was below the third percentile for his chronological age. While in the orphanage, he received timely immunizations and regular medical attention. The patient was adopted in the U.S. and started his life as a neurologically compromised child who needed

an extensive rehabilitation program from a very young age. Soon after his arrival in the U.S., he started attending a pre-K special education program. Although he entered a regular education kindergarten class at a local school, he was soon recognized as a special educational needs student by his school district and was transferred to a special education program. The patient was brought in to the emergency department because of extreme agitation, aggressive behavior and impulsivity in school.

No. 69
Effects of Clozaril on Tardive Dyskinesia
Poster Presenter: Syed E. Maududi, M.D.
Co-Authors: Sohi Gobind, Asghar Hossain

SUMMARY:

Case: Patient X. is a 55-year-old female who was admitted to the hospital for worsening involuntary movements of her head, face, neck, arms, and legs resembling chorea versus tardive dyskinesia. Her movements have led to her disability in carrying out daily activities, and she is currently wheelchair bound due to her fear of falling down. Her movements worsened shortly after her PMD discontinued her prescription of risperidone and required hospitalization. She was diagnosed with schizophrenia consisting of paranoid delusions and auditory hallucinations in the Dominican Republic (DR) in 1994. She was prescribed neuroleptics, and according to her daughter, she has been taking risperidone for "as long as I can remember." Her involuntary movements started around five to six years ago, but she did not stop taking risperidone until few months ago, after she moved to America. She went through extensive diagnostic testing, which included CT scan, MRI, MRA, and genetic testing for CAG trinucleotide repeat, but they were all negative for any vascular, structural or Huntington's pathology. After ruling out other common causes for her movement disorder, her antipsychotic medication was switch from risperidone to clozapine. She was discharged from the hospital with a prescription of amantadine 100mg, clonazepam 0.5mg, quetiapine 50mg, cyclobenzaprine 10mg, valproic acid 250mg, and haloperidol 2mg. Interestingly, since her discharge, there has been a visible improvement/reduction in

her movement symptoms. These improvements are most prominent in her extremities and tongue, with little to no change in other facial movements. Her symptomatic movements are still disabling enough to render her wheelchair bound. **Discussion:** Substantia nigra modulates the motor response through its dopaminergic action on direct pathways and indirect pathways, which cause initiation of movements and inhibition of movements, respectively. This is achieved through its opposing action on D1 and D2 receptors that are predominantly present on the striatal neurons of the direct and indirect pathways, respectively. Upon stimulation, the release of dopamine depolarizes the striatal neurons in the direct pathway, causing initiation of movements and hyperpolarizes indirect pathways, leading to inhibition of their inhibitory effect on the basal ganglia and motor cortex. The maintenance of this balance between direct and indirect pathways is responsible for the synchronicity of all our purposeful movements.

No. 70

“The Girl on Fire”

Poster Presenter: Rasna Patel, M.D.

Co-Author: Amit Mistry, M.D.

SUMMARY:

Background: Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by multisystem organ involvement where the body attacks its own self. Clinical presentation and course are variable; common presentation may include fever; fatigue; malaise; joint pain; abdominal pain; stereotypical malar rash; and, in severe cases, lupus cerebritis, a neuropsychiatric manifestation of SLE that presents clinically with confusion, lethargy, seizures, coma, mood changes, and even psychosis. It is a serious but potentially treatable illness but difficult to diagnosis. **Case:** This is the case of a 16-year-old female with no known psychiatric history; past medical history of chronic anemia presented with fluctuation of altered mental status (AMS), fatigue, psychomotor retardation, anorexia, dysarthria, and unsteady gait. Neurology evaluated the patient but did not believe she had meningitis or encephalopathy. Psychiatry was consulted to evaluate for possible somatic etiology; however, this did not fit with the clinical picture of tachycardia,

low-grade fever and abnormal labs (elevated thyroid hormone, leukopenia, anemic blood count). Rheumatology was consulted and noted palmar erythema and suspected SLE, ordered antinuclear antibodies (ANA) and complement component ratio C3/C4, which confirmed the diagnosis of SLE. The patient was started on high-dose steroids. The patient’s clinical picture failed to improve and continued to have a complicated hospital course requiring intensive care and nasogastric tube, deteriorating to catatonia with mutism, cataplexy, hypokinesia, and echopraxia. Psychiatry recommended lorazepam, which was started, and electroconvulsive therapy (ECT), which the patient’s mother declined. Gradually, the patient improved and was stable for discharge home with appropriate follow up. **Discussion:** This case exemplifies many of the challenges with diagnosing and treating SLE and the complications associated with the disease. This patient presented with sudden onset of symptoms. Her course of disease rapidly manifested itself in neuropsychiatric symptoms. This case also illustrates importance of first ruling out organic causes of presenting symptoms before suggesting psychiatric disorders as the etiology.

No. 71

Visual Hallucinations in a Geriatric Patient With Adrenal Insufficiency: Diagnostic Challenge

Poster Presenter: Sabina Fink, M.D.

Co-Author: Luisa Gonzalez, M.D.

SUMMARY:

Adrenal insufficiency is a rare disease with a nonspecific presentation that can make diagnosis challenging for the unsuspecting clinician. Secondary adrenal insufficiency due to hypothalamic-pituitary failure has a prevalence of 150–280 per million. Literature reviews exist linking hypoadrenalism and psychiatric symptoms such as depression, perceptual disturbances and psychosis. The neuropsychiatric manifestations observed as initial presentation of adrenal insufficiency can on occasion delay accurate diagnosis and treatment. In this poster, we describe the case of a 69-year-old woman with blindness secondary to surgical resection of a meningioma who presented to the hospital with a one-month history of worsening visual hallucinations. The hallucinations consisted of seeing insects crawling

over her body and later progressed to seeing animals and people entering her home. This case report aims to highlight the difficulties of ruling out the organic cause of her perceptual disturbance secondary to her medical comorbidities, and a review of the medical and psychiatric etiologies of visual hallucinations will be presented.

No. 72

Depression and Atopic Dermatitis: A Review of Current Literature

Poster Presenter: Ankit Jain

SUMMARY:

Background: Psychological distress, including depression, is proposed to play a major role in chronic skin diseases, particularly atopic dermatitis. Literature reviews suggest that at least 30% of people who suffer from atopic dermatitis experience psychological distress, and this in turn affects the quality of life. In certain cases, psychiatric emergencies such as suicide have been associated with skin diseases. **Methods:** We performed a literature review via PubMed and MEDLINE using the terms “depression” and “dermatitis.” We also searched “depression AND skin disease” as well as “psychiatry AND skin disease.” Articles within the past 10 years including meta-analyses were searched. We have also included a case report describing atopic dermatitis and depressive symptoms followed longitudinally. **Results:** During the last decade, research has been focused on psychophysiological and psychoneuroimmunological mechanisms that influence dermatological disorders. This course of development and the current state of knowledge are presented for atopic dermatitis and psoriasis. The prevalence of psychological disturbances in chronic skin diseases was a little higher than that seen in oncological, cardiological or neurological patient populations. The evidence for psychological causation is neither strong nor convincing; however, psychiatric disorders are common among people with established skin diseases. Antidepressants, such as tricyclic antidepressants and selective serotonin reuptake inhibitors, have specific negative immune-regulatory effects by lowering the production of IFN- γ and IL-1 β and increasing the production of IL-10 and the levels of Treg cells. Most studies reported a significant

decrease in social functioning and quality of life assessed via self-reported questionnaires. Few commented on the bidirectional relationship between psychological stress and dermatitis, and many stressed the importance of a biopsychosocial approach to atopic dermatitis given the high rate of depressive and anxiety symptoms seen. However, there were limited data on interventions and treatment for the same. **Conclusion:** The case report and related articles support the hypothesis of relationship between depression and atopic dermatitis. Clarifying this relationship, as in this literature review, will contribute to interventions to help reduce the burden of stress on an individual’s quality of life. More clinical trials and prospective cohort studies are required to establish a causal relationship between atopic dermatitis and depression and other mental illnesses.

No. 73

Isoniazid-Induced Psychotic Illness in a Patient With Latent Tuberculosis Without Preexisting Psychiatric Illness

Poster Presenter: Saba Afzal, M.D.

Co-Authors: Samuel O. Sostre, M.D., Noah Villegas

SUMMARY:

Background: The sudden emergence of psychotic symptoms in any patient with no psychiatric history should prompt a search for secondary causes. Isoniazid is usually included in all regimens for the treatment of latent tuberculosis. While the mechanism is not well understood, several case reports documenting psychosis related to the use of isoniazid have been published. **Methods:** We present a case of suspected isoniazid-induced psychotic illness in a patient with latent tuberculosis without preexisting psychiatric illness. **Case:** A 29-year-old male with no personal history of psychiatric disorder presented for evaluation with family members. On examination, he presented as paranoid, reporting that he felt as if his girlfriend had been poisoning him and putting things in his head. While in the emergency room, he was worried that the staff was doing experiments on him. He was also described as very bizarre and disorganized. Review of his medical history revealed that he was recently started on isoniazid for a positive purified protein derivative (PPD) skin test. He was admitted to

psychiatry on a voluntary status and the isoniazid was discontinued. Neuroimaging and laboratory workup were mostly normal. He had a positive antinuclear antibody (ANA) test, with a titer of 1:40, without any other evidence of systemic lupus erythematosus. On day two of his hospitalization, he requested to be discharged, and his status was changed to involuntary. Unfortunately, he had to be transferred to another facility, and he was lost to follow-up. **Conclusion:** Isoniazid is a safe and effective treatment for tuberculosis. The most commonly reported side effects include peripheral neuropathy and hepatitis. The first cases of isoniazid-induced psychosis were reported in 1956. The mechanism for the development of psychiatric symptoms is not clearly known, but isoniazid is known to interfere with several metabolic processes essential for normal neuronal functioning. Isoniazid may alter the levels of catecholamines and serotonin by inhibiting monoamine oxidase and/or by inducing pyridoxine deficiency. While pyridoxine is generally given prophylactically to prevent neurologic effects, it has not been shown to prevent or treat isoniazid-induced psychotic symptoms. Treatment usually requires the discontinuation of isoniazid and the initiation of an antipsychotic medication. This case report adds to the literature and makes consultation psychiatrists aware of this possible adverse effect of this frequently prescribed medication. Isoniazid is included in most regimens for the treatment of tuberculosis. Consultation psychiatrists must recognize this possible complication of treatment.

No. 74

Capacity to Make the Decision for Hospice and Refuse Dialysis in a Patient With Severe Major Depressive Disorder and End-Stage Renal Disease

Poster Presenter: Sheldon Brown, M.D.

Co-Authors: Ahmed Qureshi, M.D., Mahdi Razafsha, M.D.

SUMMARY:

Background: Physicians are required by law and medical ethics to obtain informed consent before initiating treatment. Informed consent requires that a patient be able to make a decision regarding medical treatment. However, depression can influence decision-making capacity, as depression has a high prevalence in patients with significant

medical comorbidities and can influence a patient's decision to hasten death. This was the case recently presented to the psychiatry consultation-liaison team of Shands at the University of Florida. **Case:** The patient is a 77-year-old woman with a history of severe major depressive disorder (being treated with citalopram) and end stage renal disease (ESRD) (requiring dialysis thrice weekly) who was involuntarily committed after screening positive for suicidality. Additionally, she had been showing signs and symptoms of severe depression, including anhedonia, poor energy and social isolation. She was subsequently transferred to an inpatient psychiatric facility for further management, but was ultimately transferred back to the medical floor after developing hypotension. On her admission to the medical floor, the patient initially requested hospice care due to her poor quality of life related to her ESRD (as she did not desire to go to dialysis three times a week). Psychiatry was asked to reevaluate her involuntary status, as the medical team felt that her desire for hospice was reasonable. When the psychiatry team presented to evaluate the patient, she then changed her decision on hospice care, stating that she was undecided. She also denied depressive symptoms and suicidal ideation, even though her affect was consistently dysphoric. The psychiatry team felt that depressive symptoms continued to be present despite denial from the patient, although the suicidal ideations were resolved. Subsequently, the patient's involuntarily status was changed to voluntary admission. However, it was determined that the patient did not have the capacity to make decisions regarding hospice and end of life care given her current depressive symptoms. In other words, the psychiatry team felt that depression was coloring the patient's perception and decision in regards to dialysis. Continued medical and psychiatric treatment resulted in the resolution of symptoms, and the patient ultimately desired to continue dialysis. **Discussion:** Psychiatric consultants are asked to assess capacity on a routine basis in order to determine the patient's ability to understand the proposed treatment, side effects, benefits, and alternatives. It should be noted that depression can interfere with a patient's capacity to refuse life-sustaining treatment. This highlights the need for a careful evaluation of depressive symptoms while

assessing a patient's capacity to make choices on end of life care.

No. 75

Factitious Disorder in the Context of Takayasu's Arteritis

Poster Presenter: Boris Lee, M.D.

Co-Author: Snezana Sonje, M.D.

SUMMARY:

Background: Factitious disorder is characterized by patients who simulate, induce or aggravate illness to receive medical attention, regardless of whether or not they are ill. When it comes to those with significant past medical history, the threshold for physician evaluation and diagnostic study favors the patient objective of receiving medical attention in those with factitious disorder. We present the case of a 50-year-old male with history of Takayasu's arteritis who came to our ER with complaint of chest pain in the extreme context of high-volume ER visits to our hospital, including 36 admissions since 2012, inpatient encounters at almost two dozen known hospitals in the DC metropolitan area that number over 1,000, and hundreds of radiological studies including over 200 CT scans, all starting since 2012. **Case:** A 50-year-old male with history of confirmed Takayasu's arteritis presents to the emergency room with chest pain. The patient's chart was reviewed, revealing multiple admissions for complaints of syncope, indigestion, joint pain, bilateral leg weakness, back pain, blurred vision, chest pain, one-sided weakness, and fatigue. He was diagnosed with Takayasu's arteritis in 2010. Medical records obtained from online database Chesapeake Regional Information System for our Patients (CRISP), along with our own records, reveal the extreme state of his disease. The patient was interviewed, counseled on factitious disorder and referred for individual psychotherapy. Throughout the encounter, the patient was insistent that he did not have any mental illness and repeats "I just do what my doctors say." Further review of his records shows that the patient has had numerous hospital visits since that encounter. **Discussion:** The unique aspect of this patient's diagnosis of factitious disorder is the extent to which he achieves his goal of seeking medical attention. His comorbid condition of Takayasu arteritis lends credibility to many of his chief

complaints and renders them worthy of medical investigation to those without insight into his true pathology. As the patient has had over 200 known CT scans with radiation exposure and countless other medical interventions, physicians may unknowingly cause harm to the patient. Despite our counseling and recommendation of individual psychotherapy, the patient has continued his medical attention-seeking behavior, as evidenced by subsequent records. With limited treatment options aimed at reducing harm, the prognosis is poor, and more research is required in this area for better treatment options. Factitious disorder can be easily overlooked by physicians working up a patient. Psychiatrists need clinical suspicion and investigation of medical records to identify these patients who overuse medical services.

No. 76

A Mystery Case of ICU Delirium: Dexmedetomidine and the Blunting Effect

Poster Presenter: Karel Routhier, M.D.

Co-Authors: Katy A. Lalone, Cameron L. Fausett

SUMMARY:

Dexmedetomidine (DEX) is a highly selective α_2 -adrenoceptor agonist known for its sedative, analgesic and anxiolytic properties without the risk of respiratory depression. It also obtunds emergent delirium, decreases ICU costs due to shorter extubation time, and minimizes negative cardiovascular effects of amphetamines and cocaine intoxication through sympatholysis. It has been studied as monotherapy or adjunct for alcohol, benzodiazepine (BZD) and opioid withdrawal, although only a limited body of evidence has been published. We present a case of complicated ICU delirium in which DEX proved insufficient to manage opioid and BZD withdrawal symptoms and rather caused a blunting effect, obscuring symptomatology that delayed proper diagnosis and management of this severe condition. Mrs. C., a 37-year-old Caucasian female with a past medical history of chronic back pain, hepatitis C, anxiety, depression, tobacco use disorder, opiate use disorder in remission, and BZD dependence, presented to the emergency department with headache, fever, altered mental status, and respiratory distress. She was given naloxone en route, which improved her

respiratory rate, but she required intubation due to an absent gag reflex. She was admitted to the ICU for ventilator management with concern for aseptic meningitis and pneumonia. Antibiotics were started accordingly. The patient was extubated on day seven and became agitated, confused, nonverbal, tachycardic, tachypneic, incontinent of feces, and diaphoretic despite treatment with DEX, fentanyl, low-dose lorazepam, and antipsychotics for 48 hours. Psychiatry was consulted on day eight for delirium management. Due to the mental state of the patient and limited history, the primary team was unaware that Mrs. C. had been using daily BZD and maintenance methadone for years. Since she did not receive BZD and only low-dose opioids prior day seven of admission, a concern for BZD and opiate withdrawal syndromes contributing to severe agitation and encephalopathy was raised. We resumed lorazepam at the patient's home dose and methadone at half the home dose. The patient improved drastically within the following 12 hours and regained fully intact cognition, attention and communication skills. Her vital signs stabilized, and nausea as well as diarrhea slowly subsided. Given DEX properties, the team felt that withdrawal symptoms, if occurring, would be managed by combining DEX and fentanyl, which led them to overlook withdrawal as the main culprit for this patient's presentation. In withdrawal states, there is excessive noradrenergic signaling, which explains why α 2-adrenoceptor agonists are logical adjuncts. This case suggests that while DEX might be sufficient in blunting the sympathetic response for mild to moderate withdrawal states, it might not offer adequate coverage for severe, polysubstance withdrawal cases. More research needs to be done to determine the role, doses and limitations of DEX for specific withdrawal states.

No. 77

Successful Outcome of Anti-N-Methyl-D-Aspartate Encephalitis With Delayed Presentation of Asynchronous Contralateral Teratomas

Poster Presenter: Kristen Marie Langlois, D.O.

SUMMARY:

S. M. is a 24-year-old Hispanic female with no past psychiatric history and past medical history relevant for ovarian torsion at age 10 who presents to the

emergency room status post-generalized tonic clonic seizure. Review of medical record reveals three recent visits to the emergency room for headache, anxious instability and prosopagnosia occurring over a two-week period. Workup included a lumbar puncture with a paraneoplastic CSF panel that revealed elevated NMDA titers conferring a diagnosis of anti-NMDA receptor encephalitis. S. M. was subsequently admitted to the ICU for severe frequent episodes of central hypoventilation, labile blood pressure, orofacial dyskinesias, and recurrent seizure activity. Routine imaging with transvaginal ultrasound ruled out an underlying ovarian teratoma. S. M. showed no signs of improvement despite first- and second-line immunotherapies (IVIG, PLEX, rituximab). Persistent clinical deterioration over the course of several months in the ICU prompted multiple repeat CT and MRI images of the abdomen and pelvis, which consistently excluded an ovarian teratoma as the cause for this patient's anti-NMDA receptor encephalitis. At five months from the initial onset of symptoms, a teratoma surveillance CT abdomen/pelvis demonstrated a right ovarian teratoma. Despite optimism for a rapid recovery following the right salpingo-oophorectomy, the patient developed worsening autonomic instability and central hypoventilation. Repeat CSF NMDA antibody titers continued to increase, which elevated our suspicion for an occult teratoma in the remaining ovary. A 30-day postoperative CT abdomen/pelvis was performed for continued surveillance and revealed an asynchronous contralateral (left) ovarian teratoma previously unidentified on imaging. Left salpingo-oophorectomy was performed, and the patient's clinical status steadily improved. At 12-month postdischarge follow-up, the patient is able to communicate needs and displays a lingering pseudobulbar affect that is successfully treated with medications. In female patients with anti-NMDA receptor encephalitis, imaging surveillance for ovarian teratoma must be included in the plan of care before the consideration of controversial alternatives such as blind oophorectomy or laparoscopic exploration. In our patient, a left ovarian teratoma became detectable on surveillance imaging 30 days after the initial right ovarian teratoma was removed. Increased frequency of surveillance imaging should be initiated in

patients who show no interval improvement following an initial teratoma removal, as this may suggest early recurrence of an occult teratoma in the remaining ovary. In this poster, we discuss the role of judicious imaging surveillance in a unique case of anti-NMDA receptor encephalitis with delayed presentation of asynchronous contralateral ovarian teratomas.

No. 78

Repeat Autoenucleation at an Academic Medical Center During Admission for Contralateral Autoenucleation: A Case Report

Poster Presenter: Jonathan Wilson

Co-Authors: Karina Espana, Thomas Veeder

SUMMARY:

A 32-year-old female with a history of schizoaffective disorder, bipolar type, and methamphetamine use disorder, in early remission, presented to an academic medical center by ambulance following autoenucleation of the right eye in the setting of medication nonadherence. Upon arrival to the emergency department, she was exhibiting thought disorganization, command auditory hallucinations and religious delusions with an ability to “see God’s world.” She denied current intoxication as well as any lethal intent regarding her autoenucleation. Psychiatric consultation was requested on postoperative day zero after surgical exploration and evacuation of the right globe. On psychiatric assessment, she was heavily sedated following several doses of olanzapine and subsequently unable to participate in a formal assessment. It was recommended that the patient be titrated on her olanzapine and for the primary team to initiate 1:1 observation for the safety of the patient. Due to her level of arousal, she was titrated out of soft restraints while the therapeutic 1:1 companion remained at her bedside. Unfortunately, eight hours following initial psychiatric consultation and while in the presence of the therapeutic companion, the patient autoenucleated her left eye using her fingers. Upon immediate evaluation by nursing, she was calmly sitting in bed with her left eye protruding from the socket. Subsequent psychiatric evaluation the next morning found the patient in bilateral upper extremity soft restraints. She alleged to hyper-religious auditory command hallucinations informing

her she should “take out the other eye.” She endorsed religious and grandiose delusions in addition to a new desire to end her own life by means unknown. On hospital day three, ophthalmology performed an exploration and repair of the left globe. Following the initial procedures, ophthalmologic evaluation showed no light perception bilaterally, and an ultrasound showed extensive disorganization of both eyes. They felt the route to the quickest and best recovery with the most reasonable outcome was bilateral enucleation. On hospital day 12, the patient returned to the operating room for bilateral enucleation without insertion of implants. After medical and surgical clearance, she was transferred to the acute inpatient psychiatric unit for continued care. Due to lack of response to olanzapine, she was titrated onto clozapine with mild resolution of her psychiatric symptoms. As she continued to endorse some residual auditory hallucinations in addition to depressed mood, she was transferred to a state hospital for further stabilization. This case highlights the increased risk of repeat autoenucleation in an acute setting. While the least restrictive measures are often encouraged, individuals engaging in unilateral autoenucleation in the setting of significant psychopathology may require more restrictive and intensive treatment options to prevent repeat major self-mutilation.

No. 79

A Role for Gabapentin in Managing Acute Alprazolam Withdrawal

Poster Presenter: Kelli Ruby, D.O.

Co-Authors: Steven Fischel, M.D., Ph.D., Lewis Cohen

SUMMARY:

A 57-year-old woman was hospitalized with chest pain and confusion, and an acute coronary syndrome was rapidly ruled out. Mild agitation was treated with a one-time dose of lorazepam. She was noticed to have improvement in cognition; however, shortly before the patient was to be discharged, she again became confused and disorganized, and a psychiatry consult was obtained. She was noted to be delirious with psychomotor agitation, perceptual disturbances, and grossly disorganized thought and speech. Collateral information raised suspicion of benzodiazepine abuse and the presence of a

withdrawal delirium. The psychiatry consult team recommended use of both scheduled benzodiazepine and gabapentin. The patient received gabapentin alone, and her withdrawal was notably improved by the next morning and subsequently resolved completely. Afterward, the patient admitted to significant daily alprazolam use, which she abruptly stopped just prior to coming to the hospital. Benzodiazepine withdrawal is a potentially life-threatening condition that is important to recognize and treat in hospital settings. Traditionally, benzodiazepine withdrawal has been managed with a scheduled taper of long-acting benzodiazepines. There is literature suggesting adjunctive use of anticonvulsants may play a helpful role in management. However, there is limited research about the application of anticonvulsants as monotherapy for benzodiazepine withdrawal. In this poster, we review the literature and present a case of alprazolam withdrawal successfully treated with gabapentin monotherapy.

No. 80

Mania With Psychotic Symptoms Secondary to New-Onset Thyrotoxicosis From Grave's Disease: A Case Report

Poster Presenter: Abhishek Reddy, M.D.

Co-Authors: Victoria Johnson, Rachel Fargason, Badari Birur, M.D.

SUMMARY:

Background: Thyroid disorders are most commonly linked to mood disorders characterized by depression, mania or mixed affective states. Limited literature addresses the association of hyperthyroidism with mania and psychosis. We present a case report of a middle-aged female patient who presented with new-onset mania with psychotic features secondary to recent onset of thyrotoxicosis from Grave's disease. **Case:** Ms. K. is a 32-year-old African-American female who presented to the emergency room with agitation and irritability resulting in psychiatric consultation. During the interview, she demonstrated pressured speech, flight of ideas, extreme tangentiality, and delusions of grandeur. At the time of admission to the inpatient psychiatric unit, her laboratory values were remarkable for a drug screen positive for cannabinoids with pending thyroid values. The

family reported that the patient's behavior was altered from her baseline and that she had no past psychiatric history. The family had observed her intoxicated from marijuana in the past, but had never seen a similar presentation. On the inpatient unit, Ms. K. continued to display psychotic disorganization and lability. Initiation of risperidone helped reduce paranoid and psychotic symptoms; however, she continued to exhibit pressured speech, lability and irritability. Endocrinology consult service was engaged due to findings of abnormal thyroid levels, including decreased TSH and increased free T3 and T4 levels. Ms. K. was diagnosed with new-onset thyrotoxicosis from Grave's disease and started on methimazole and propranolol. She continued to be manic and irritable during this phase and hence was started on valproate. As her thyroid levels started improving, methimazole was decreased and, simultaneously, valproate was increased and the patient was noticed to be calmer, less manic and beginning to show significant improvement over her initial presentation. The patient was discharged home on valproate, methimazole, atenolol, and risperidone. Two months after discharge, she was noted to be stable from a medical and psychiatric standpoint. **Conclusion:** This case describes new onset of mania with psychotic features in a patient who was subsequently diagnosed with new-onset thyrotoxicosis from Grave's disease. The patient did not have a past psychiatric history, and initial use of antipsychotics addressed only the psychotic but not the manic symptoms. Stabilization of thyroid levels and use of valproate resulted in resolution of manic symptoms. This suggests that manic symptoms secondary to new-onset thyrotoxicosis may require treatment of the underlying thyroid disease in addition to mood stabilization. This case presentation emphasizes that clinicians should be mindful of the possibility of thyroid abnormalities in patients with new onset of mood symptoms. In cases with similar presentation, a screening TSH would help to rule out thyroid dysfunction.

No. 81

Delirious Mania Following Cardiac Arrest Treated With Olanzapine: A Case Report and Literature Review

Poster Presenter: Emily A. Laurenzano

SUMMARY:

Our patient is a 55-year-old male with psychiatric history significant only for moderate anxiety treated with diazepam and recent medical admission for emergent cardiac catheterization following cardiac arrest/NSTEMI, with hospital course complicated by delirium, which resolved, who was medically readmitted the following week with altered mental status. He presented with confusion, disorientation, agitation, personality changes, and visual hallucinations. Collateral information revealed he had not been sleeping, was exercising excessively, had been uncharacteristically angry and agitated, and was picked up by police running on the highway in 20-degree weather. Medical workup, including bloodwork and head CT, were unremarkable. Substance intoxication/withdrawal and medication side effects were ruled out. He was evaluated by neurology and had a normal brain MRI and EEG. He was seen by the psychiatric consultation service and presented as disoriented, forgetful and overtly manic; affectively labile and expansive; impulsive and hyperactive; distractible; disorganized; and tangential with pressured speech and severely impaired insight and judgment. He reported increased energy, decreased need for sleep and racing thoughts, though his perceptual disturbances had resolved. He was started on Olanzapine 5mg twice daily to target symptoms of mania and psychosis. Within two days, he exhibited substantial improvement and no longer appeared manic or psychotic and returned to his baseline mental status within one week. Existing literature on delirious mania and treatment guidelines is limited and largely based around case reports. Treatment with benzodiazepines and/or ECT is generally recommended above treatment with antipsychotics, particularly conventional antipsychotics. There seems to be an association between delirious mania and suboptimal response to antipsychotics, as well as higher incidence of adverse medication reactions, particularly NMS. In this poster, we present a case where non-malignant delirious mania was successfully treated with an atypical antipsychotic and review the literature on the phenomenon of delirious mania and existing treatment recommendations.

No. 82**Beyond the Blood-Brain Barrier: Examining Psychiatric Issues Among Neuro-Oncological Patients Postoperatively**

Poster Presenter: Alvin Bryan Keng, M.D.

Co-Author: Kathleen Sheehan, M.D., Ph.D.

SUMMARY:

Background: Neurosurgical patients are at a high risk of psychiatric and behavioral complications postoperatively. Neuro-oncological patients have significant neurological disease burden, which in combination with surgical intervention, adjuvant treatments (radiotherapy, chemotherapy) and medication use (e.g., long-term steroid therapy) increases the likelihood for delirium, mood symptoms and psychosis. Despite this high risk of psychiatric complications, empirical literature is lacking in this area. **Methods:** This project combined a literature review with an empirical exploration of a clinical dataset from our institution. We conducted a scoping review of the current existing literature on this subject by searching three online databases: MEDLINE, EMBASE and PsycINFO. Articles were screened for relevance through a step-wise process reviewing titles, abstracts and full articles. Reference lists of included articles were hand-searched. Inclusion criteria were as follows: 1) articles must include neurosurgical patients; 2) postoperative psychiatric outcomes must have been discussed in some way; 3) the primary indication for neurosurgery was a neuro-oncological issue; and 4) an English abstract must be available for review. In addition, a retrospective cohort review of consecutive referrals from the neurology, neurosurgical and neurological ICU services to a consultation-liaison (CL) psychiatry service over a four-year period was conducted. **Results:** The initial literature search identified 7,594 articles. After application of inclusion criteria and prior to hand-searching, 91 articles were included. A preliminary review of the literature indicated a significant focus on cognition and cognitive development. Other areas such as delirium, mood, psychosis, and anxiety were underserved. Over a four-year period, 181 referrals from neurology and neurosurgical services to CL psychiatry were received. Among 181 referrals, 71 were from neurosurgery, with mood assessments

(N=30, 42.3%) and confusion (N=13, 18.3%).

Conclusion: Overall, there is a poor understanding of the relationship between neurosurgical interventions and psychiatric sequelae. Among neuro-oncological patients, the distinction is further blurred, with multiple confounding factors (e.g., disease burden, chemo- and radiotherapy, high steroid use). There is a mismatch between what exists in the literature and the demand from a clinical environment. Areas that were of great demand to our CL psychiatry service, such as mood and agitation, were very poorly studied. Further empirical work in this area could improve the care of patients with these complex disorders.

No. 83

Whiplash Presents as Pseudobulbar Affect: Through the Eyes of Psychosomatic Medicine

Poster Presenter: Saeed Ahmed, M.D.

Co-Authors: Guitelle St. Victor, M.D., Rahul Kodali

SUMMARY:

Pseudobulbar affect (PBA) is a condition of emotional expression often called emotional incontinence and associated with common neurological disease or brain injury. It is manifested as involuntary and sudden inappropriate outbursts of laughter, crying or episodic anger. The pathophysiology of PBA is not completely understood, but symptoms are thought to result from disruption to microcircuitry of cerebro-ponto-cerebellar pathways. Currently, there is no consensus on definitions; neither have the diagnostic criteria been well established. The diagnosis of PBA can be challenging and often overlooked, which may lead to ineffective treatment in many cases. In this poster, we present a case of a 71-year-old male seen by our consultation service who sustained a traumatic brain injury in February 2016. As the patient's vehicle was struck by another vehicle, he did not hit his head directly on any object but was exposed to whiplash injury involving acceleration-deceleration, concussive, contusive, coup, and countercoup forces. The patient developed episodic angry outbursts, which became worse after a cerebrovascular accident six months later. The objective of this case is to highlight that existing PBA may be severely aggravated by another neurological insult. Also, the presentation of PBA as

episodic angry outbursts may often be confused with psychiatric illnesses such as post-stroke mania, bipolar disorder, depression, schizophrenia, generalized anxiety disorder, and epilepsy.

No. 84

A Case of Posterior Reversible Encephalopathy Syndrome Associated With Depression and Anxiety

Poster Presenter: Connor McElligott

Co-Authors: Krishna K. Kilaru, M.B.B.S., Jeisson Fontecha Hernandez

SUMMARY:

In our case study, we present a patient with no psychiatric history and history of substance abuse recently diagnosed with AML and treated with allogeneic bone marrow transplant with prophylactic tacrolimus treatment who eventually developed PRES. PRES was first described as a syndrome characterized by neuroradiological findings with clinical findings of headache and altered mental status among other neurological findings such as seizures, visual disturbances and focal neurological signs in a case series in 1996. Many processes have been implicated as an underlying etiology of PRES, including immunosuppressive drugs such as tacrolimus, despite being in therapeutic levels. Upon development of PRES, neuroradiological signs typically show vasogenic edema of posterior white matter but can include other regions such as the basal ganglia. Furthermore, PRES is best visualized on MRI with potential findings of punctate areas with increased foci on T2 MRI, and areas of petechial hemorrhage may also be seen. PRES, more rarely, has also been shown to occur with basal ganglia involvement with lack of cortical or subcortical edema, thus representing one of many variants of PRES. Along with these radiographic findings, PRES is also associated with various neuropsychiatric findings, including altered mental status, confusion, seizures, nightmares, catatonic mutism, and many others. This case report seeks to add to the small but growing body of literature on PRES by describing a case of tacrolimus-associated PRES with a focus on the psychiatric features associated with the disease. Our patient had symptoms of initial signs of depression, anxiety and insomnia, followed by possible seizure with fall and then gross delirium and

lethargy following the initial symptom of headache two months prior to the diagnosis of PRES. Our patient's presentation of PRES exhibited a more atypical presentation with FLAIR signal seen in the globus pallidus with areas of likely microhemorrhage. Our patient was maintained below or at therapeutic levels throughout her hospitalization up to the development of PRES. She was treated by discontinuing tacrolimus. Although tacrolimus was removed, the patient was experiencing multiple comorbidities eventually resulting in respiratory failure, leading to intubation and sedation in the ICU.

No. 85

Catatonic Delirium: New Kid on the Block?

Poster Presenter: Swapnil Khurana

Co-Authors: Margo Funk, M.D., M.A., Elias Khawam, M.D.

SUMMARY:

Background: Delirium is an acute alteration in cognition that develops over a short period of time and represents a change from baseline. It tends to fluctuate during the course of a day. It is classified as hypoactive, hyperactive or having a mixed level of activity. Catatonia may meet criteria for delirium due to disturbances in awareness and behavioral changes; however, it is rarely considered when evaluating delirious patients. We report a patient on the consultation service of a tertiary hospital who had mixed symptoms of catatonia and delirium.

Case: Ms. A., a 65-year-old female, was brought by her husband for altered mental status. Psychiatry was consulted for evaluation and management of delirium. The patient had a history of diabetes, hypertension, COPD, and nonconvulsive status epilepticus. She presented as disoriented, confused and agitated. She was started on quetiapine for agitation with no improvement. When seen by psychiatry, the patient presented with mutism, posturing, waxy flexibility, and negativism. Bedside EEG monitoring revealed continuous slow waves and no epileptiform activity. Extensive laboratory workup, including comprehensive metabolic panel, complete blood count, thyroid function test, urine and blood culture, and creatinine phosphokinase, were all within normal limits, except for elevated white cell count. Her agitation and delirium resolved

with the addition of lorazepam 1mg intravenously every eight hours and discontinuation of antipsychotic medications. **Discussion:** The signs of mutism, waxy flexibility and posturing in our patient and significant improvement in mental status after administration of Ativan were consistent with a diagnosis of catatonia. Though the patient had underlying delirium as evidenced by fluctuation in alertness, this was accompanied by catatonic features. The well-characterized signs of catatonia such as mutism, posturing and negativism may be confused with hypoactive delirium. Similarly, hyperactive delirium may be confused with impulsivity, mannerisms and excitement associated with catatonia. This case highlights the importance of considering catatonia while evaluating patients with alteration in mental status. We will review this case in detail, discussing the causes and pathophysiology of delirium and catatonia and reviewing the management challenges encountered while treating catatonic delirious patients.

No. 86

Prevalence of Suicide in Cancer Patients

Poster Presenter: Carolina Retamero, M.D.

Lead Author: Shalini D. Dave, D.O.

SUMMARY:

Background: The risk of suicide in a cancer patient is twice that in the general population, and suicide rates vary depending on cancer type. With advancements in oncology research, some cancer patients are seeing improved survival rates, which warrants further study into their quality of life and mental health. In this report, we present a cancer patient with depression and chronic suicidal ideation and discuss the distinction in management for this patient population. **Case:** A 60-year-old African-American female with no prior psychiatric history presented with chief complaint of feeling "depressed all the time" for about a year. She had past medical history of breast cancer and laryngeal cancer following a laryngectomy two years ago, aphasia, renal failure, COPD, and GERD. She endorsed symptoms of depression, including depressed mood, anhedonia and chronic, passive suicidal ideation.

Methods: A retrospective review of the patient's chart was completed, and a PubMed search was conducted using the keywords oncology, cancer,

suicide, depression, and palliative care. **Discussion:** Patients with lung, stomach, oral cavity, pharyngeal, and laryngeal cancers have been found to have a higher prevalence of suicide in proportion to other cancer diagnoses. In addition, general risk factors for suicide apply, including older age and male gender. While the risk of suicide is highest immediately following the diagnosis of cancer, the increased risk of suicide remains higher than the risk within the general population for 15 years. These statistics show that the psychological health of these patients should be integrated into their care. Moreover, depression in cancer patients may go undiagnosed, as a patient undergoing active chemotherapy may present with similar symptoms of fatigue, weakness and appetite loss. Psychiatrists may be integrated with the oncology team and should ask about suicidal thoughts on a regular basis, especially during times in which the cancer may be progressing. It is important to recognize any risk factors that may compound the risk of suicide in a patient, as well as explore ongoing depression, anxiety and pain. Finally, finding ways to help lessen the discomfort in a cancer patient by providing comfort or palliative care is a crucial preventative measure. **Conclusion:** It is important for physicians to be cognizant of suicidal thoughts in cancer patients and how to effectively manage these feelings. Cancer patients should be in an environment where they feel comfortable to discuss their feelings, and awareness of this topic is vital to ensure proper care.

No. 87

A Case of Epidural Steroid Injection-Induced Psychosis and an Associated Literature Review

Poster Presenter: Deepti Ghiya, M.D.

Co-Author: Adeeb Yacoub

SUMMARY:

Background: Steroids may result in neuropsychiatric manifestations. Steroid psychosis is mostly cited in the literature through case reports and a few uncontrolled studies. These are limited to describe an adverse event from administering oral or intravenous corticosteroids. While it is theorized that epidural steroid injections may cause steroid psychosis, there are no documented cases illustrating the correlation between an epidural steroid injection and exacerbation of psychiatric

symptoms. The following case demonstrates psychosis from an epidural steroid injection. **Case:** Ms. M. is a 61-year-old female with bipolar I disorder who has been stable on Lamictal 150mg, Depakote 1,000mg and Seroquel 100mg with no psychiatric hospitalizations in the last ten years. She has a medical history of lumbar stenosis, and after failing multiple pain control regimens, her pain management doctor recommended an epidural steroid injection (Depo-Medrol 80mg) in L4–L5 for improved pain control. Both times she received the epidural injection, she presented to her psychiatric appointments one day later with psychotic symptoms of decreased sleep, paranoid delusions of being watched, anxiety, and irritability. There was no evidence of intravascular or subarachnoid spread of the steroid during the procedures. After both episodes, her Seroquel was increased to 150mg and she was given a seven-day supply of Ambien 5mg. She had a resolution of symptoms in five days and was able to go back to her previous medication regimen and normal daily activities. In preparation for her third epidural steroid injection, her Seroquel was increased to 150mg one week prior to the procedure, and she was given a seven-day supply of Ambien 5mg to take after the procedure. With this regimen, Ms. M. did not have any psychotic symptoms after the third epidural injection.

Discussion: This case illustrates an episode of psychosis following each single epidural steroid injection. To the author's knowledge, this is the first documented case showing a relationship between neuropsychiatric symptoms and a single epidural injection. With the increasing use of epidural steroids for treatment of pain, it is important for clinicians to recognize the risk of developing neuropsychiatric symptoms after receiving an epidural injection and the possible treatment modalities to alleviate or prevent the complication.

No. 88

Challenges in the Management of Benzodiazepine-Refractory Malignant Catatonia in the Acute Medical Setting

Poster Presenter: Karan Verma, M.D.

SUMMARY:

Background: Neuroleptic malignant syndrome (NMS) has been conceptualized as an iatrogenic form of

malignant catatonia secondary to antipsychotics. Benzodiazepines are the first-line treatment, with electroconvulsive therapy (ECT) reserved for severe or refractory cases. However, there is limited literature guiding management of treatment-refractory malignant catatonia occurring in the setting of complex medical issues such as delirium, baseline psychosis, provider disagreement regarding the diagnosis, and the logistical challenges of delivering acute psychiatric services in a general medical setting. **Case:** Mr. B., a 69-year-old man with history of schizophrenia on antipsychotics, presented to our tertiary care hospital from an inpatient psychiatric unit with recurrence of NMS and malignant catatonia spectrum symptoms over a span of three weeks. Emerging catatonia on the inpatient psychiatric unit was misattributed to "refractory psychosis" that prompted escalated antipsychotic use and recurrence of symptoms. The patient was transferred to our facility as cognition and motor symptoms worsened. Initially, the medical team disagreed with the diagnosis of malignant catatonia. However, as previously, standard treatment was implemented, including antipsychotic discontinuation, initiation of parenteral benzodiazepines and supportive care. The patient demonstrated a poor response with fluctuating course, and ECT delivery was hindered by logistical challenges of obtaining the equipment at an acute medical hospital. Hospital course was further complicated by delirium. Our service developed a multimodal flexible approach: 1) We educated and supported the medical and inpatient psychiatric colleagues. 2) We used standard treatments in a novel manner (higher dosages/longer durations than typically described in the literature, and in combination). Hypothesizing that his fluctuating course may be related to the relatively shorter half-life of lorazepam, the longer-acting diazepam was utilized. 3) We used novel treatments such as NMDA antagonists per limited promising literature. Concurrently, logistical challenges were resolved to administer ECT, an NMDA antagonist was trialed and underlying medical issues were aggressively managed. Through this persistent and multimodal approach, the malignant catatonia gradually lysed. After a three-week washout period, clozapine was successfully introduced to treat baseline psychosis, without

recurrence of NMS or catatonia. In this poster, we highlight the diagnostic and management challenges of NMS followed by treatment-refractory catatonia in a medically ill patient.

No. 89

First Episode of Psychosis: Was Ciprofloxacin the Culprit?

Poster Presenter: Mandar P. Jadhav, M.D.

Co-Author: Needa Khan, M.D.

SUMMARY:

Background: Neuropsychiatric side effects of fluoroquinolones are well-established in the literature. However, identifying mental status changes in patients as stemming from fluoroquinolone use is non-obvious to physicians due to the rare occurrence of such events. A literature search conducted using PubMed Clinical Queries to identify available evidence on this subject revealed that, since 1989, there have only been 55 odd individual reports of new-onset psychotic symptoms associated with fluoroquinolone use. Existing reviews and analyses include other neurological sequelae and therefore do not accurately reflect the prevalence of psychotic symptoms alone. Within individual reports, patients' initial presentations vary widely. Given this picture, fluoroquinolone side effect as potential etiology for psychotic symptoms is not high on the index of suspicion in an emergency department setting. This presents an opportunity for education, collaboration and improved patient outcomes when consultation is sought in such cases from psychiatrists. **Case:** In this poster, we describe a case where identification of ciprofloxacin as a culprit for acute mental status changes was not immediately obvious to us, as it was clouded by the presence of long-term alcohol use as a confounder. A male patient in his early 50s presented to our emergency department with new-onset psychosis consisting of thought-broadcasting and ideas of reference. He had a remote history of excessive alcohol use, but had received no prior psychiatric or addiction treatment. He was highly functioning, with stable social relationships and steady employment. The event leading to his seeking medical care had been a fever following a tick bite. He was treated with a long course of ciprofloxacin once diagnosed with ehrlichiosis. His behavior

became erratic after three weeks of treatment, and he was brought to our facility in this state. When he became verbally aggressive toward the primary team, psychiatry was consulted for evaluation and treatment recommendations. When the patient's history and medical records provided weak evidence for alcohol withdrawal-related delirium or primary psychotic disorders, we arrived on ciprofloxacin-induced neuropsychiatric side effects as a possible etiology for the patient's symptoms. **Discussion:** The incidence and awareness of fluoroquinolone neuropsychiatric side effects, especially psychosis, is rare among patients and providers, respectively. This was believed to be the basis of the initial reluctance of the primary team to accept medication side effect as a potential etiology for the patient's symptoms. However, with directed education and clear communication, our recommendations were conveyed effectively. Upon switching the patient's antibiotic from ciprofloxacin to doxycycline, his psychosis improved substantially, although it had not fully resolved when he was discharged home with a recommendation for follow-up care.

No. 90

Delirium Caused by the Antiepileptic Zonisamide in a Pediatric Patient With Epilepsy

Poster Presenter: Mawuena Agbonyitor, M.D., M.Sc.

SUMMARY:

Ms. C. is a 14-year-old African-American female with a past medical history of juvenile myoclonic epilepsy who presented to the psychiatric consult service with altered mental status. The patient had multiple seizures four days prior while on zonisamide (which she had been on for around one month) and valproic acid. She was taken to the emergency room, and neurology was consulted, who recommended a clonazepam bridge and increasing the valproic acid dose. Her mother took her home and followed clonazepam bridge, but did not increase valproic acid dose due to concerns. Over the following days, the patient became very sleepy. She then became anxious and had amnesia where she was not oriented to self, place or her family. Her mother brought her to the ED, and the patient was admitted to the general pediatric service and psychiatry was consulted. Initial differential diagnosis from the general pediatric team included active seizures,

prolonged postictal state, psychogenic altered mental status, psychotic episode, and severe mood symptoms. The patient's condition initially worsened, and she made an outcry of being sexually assaulted many months prior. The patient also expressed suicidal ideation. Per psychiatry team recommendation, she was started on risperidone 0.5mg every evening at bedtime for delirium, and zonisamide toxicity was added as part of her differential diagnosis. With guidance from the neurology consult team, the patient was tapered off of zonisamide and on to lamotrigine for seizure control. With these changes in her medications, the patient's mental status improved so that her mood became euthymic, and her affect brighter; she no longer had amnesia, denied suicidal ideation, and denied ever being sexually assaulted or abused. She was discharged home and continued on risperidone for two weeks after discharge. At follow-up via neurology outpatient appointment one month later and via a phone call with the psychiatry team, the patient was no longer taking risperidone and was completely back to baseline. Literature regarding zonisamide toxicity notes case reports where altered mental status has occurred, and in patients who remain on zonisamide, psychosis can be irreversible. In this poster, we discuss this case and review the literature to note the importance of adding zonisamide toxicity as part of the initial differential diagnosis for patients taking the medication who present with altered mental status.

No. 91

Takotsubo Cardiomyopathy Triggered by Bipolar Mania: A Case Report and Literature Review

Poster Presenter: Sridhar Kadiyala, Ph.D., M.B.B.S.

Co-Author: Jeisson Fontecha Hernandez

SUMMARY:

Takotsubo cardiomyopathy is characterized by transient left ventricular dysfunction secondary to myocardial stunning or vessel spasm with symptoms consistent with myocardial ischemia without potential evidence of coronary artery disease. Also known as stress cardiomyopathy, this disease is more prevalent in females older than 55; its incidence is increasing, affecting approximately two patients in 10,000 hospital admissions in the United States. Although no randomized clinical trials exist,

thorough understanding of this illness is essential for the duration and course of the illness, as acute cardiac interventions may not be necessary in most of these patients. This disorder is identified to occur in response to an acute emotional as well as physiological stress caused by several medical conditions and acute medication withdrawals, indicating the potential involvement of hypothalamic pituitary adrenal axis and catecholamines, consequently acquiring the name broken heart syndrome. Previous published studies emphasized the significant role of mood and anxiety disorders, as well as the biopsychosocial factors contributing to the etiology of Takotsubo cardiomyopathy. In addition, other published results indicated the role of psychiatric exacerbation in the etiopathogenesis of Takotsubo cardiomyopathy. Although the causality and pathogenesis of psychiatric illness in Takotsubo cardiomyopathy needs to be established by controlled trials, several hypotheses have been proposed with inconclusive evidence, including the role of inflammation and transient sympathetic hyperactivity. In this poster, we present a case report of Takotsubo cardiomyopathy in a relative young female patient with significant psychological trauma but no significant cardiac history, shortly after a successful electroconvulsive treatment presenting with grossly manic picture and with auditory and visual hallucinations causing remarkable emotional stress potentially leading to severe but intermittent right-sided chest pressure and presyncope. Extensive workup revealed normal troponins with nonspecific T-wave inversions on EKG, consistent with myocardial hypokinesia on transthoracic echocardiogram, with no evidence of blockade on CT coronary angiography. Over the next few days, the patient significantly improved with antimanic treatment while carefully being monitored on telemetry along with safety care. While this case is in accord with previously published case reports with acute cardiac symptoms consistent with Takotsubo syndrome precipitated by the first manic episode, highlighting the important role of “brain-heart” and body connection, there is necessity for randomized controlled trials for developing practice guidelines. In summary, identifying Takotsubo syndrome requires close attention, as these patients respond well to the correction of the underlying

problem and supportive care without acute cardiac interventions.

No. 92

Morgellon’s Disease: Is There a Connection With Opioid Toxicity? a Case Report and Literature Review

Poster Presenter: Mahitha Kalli

Co-Authors: Silpa Balachandran, Katy A. Lalone

SUMMARY:

Background: Morgellons disease (MD) is a rare but devastating dermatologic condition characterized by perceptions of itching, biting and crawling on the skin attributed to either “bugs” or fiber-like filaments arising from the dermis, subsequently leading to excoriations and sores as the sufferer attempts to remove these parasites or filaments. Beyond the unusual skin findings, nonspecific symptoms of fatigue, cognitive and psychiatric impairments are also commonly co-occurring. Often regarded as a delusional disorder, the true etiopathogenesis of this syndrome has remained an enigma despite its gaining popularity over the past few decades. **Methods:** We present a case of a 70-year-old Caucasian woman with a medical history significant for chronic venous stasis, chronic kidney disease and severe arthritis, for which she had been prescribed chronic opiate therapy for many years, with a 12-month history of symptoms of Morgellons disease, which remarkably improved with reduced doses of opioid medication. We sought to better understand the pathophysiology of Morgellons and consider if opiate toxicity could contribute to the development of this disease. **Results:** A literature review assessing the correlation between Morgellons disease and opiate toxicity was conducted. PubMed, Medline, EMBASE, Google scholar, and PsycINFO were searched using terms “Morgellons” AND “opiate use” OR “pathophysiology” OR “etiology,” as well as “Opiate-related pruritus” and “Delusional parasitosis” and manually cross-referenced for other relevant articles. Formication is a known side effect of drug toxicity and withdrawal syndromes that may mimic the symptoms of Morgellons. A CDC investigation of 115 cases showed evidence of drug use in 50% of Morgellons participants. Savely et al. studied a group of 122 patients with Morgellons, of whom 14

(11.5%) reported being on pain medications. Finally, a review of 25 cases by Harvey et al. specifically excluded patients whose symptoms were related to delirium states or opiate withdrawal given concerns for diagnostic confusion. **Conclusion:** To our knowledge, this is the first reported case of Morgellons disease that has been linked to an opiate toxicity after clear improvement in symptoms of Morgellons with resolution of opiate toxicity. Clearly, further research into this unusual phenomenon is warranted to help further clarify both etiologic and diagnostic factors, as well as to guide us toward more targeted treatment options.

No. 93
Understanding Ethical Dilemmas in Capacity Evaluations

Poster Presenter: Houssam Raai, M.D.
Co-Author: Adriana Mateoc, M.D.

SUMMARY:

Facing a growing number of capacity evaluation requests in the general hospital. Physicians are commonly encountered with more ethical issues and dilemmas that drive them to seek unnecessary psychiatric consultations, a practice which raises the expectations that the consultant psychiatrists would be, somehow, the ethicist on board whose role is to bring the most moral solution to their dilemmas. In this poster, we present a case of a 92-year-old woman, living alone with no familial support, who came to the emergency room due to a fall. Incidentally, she was diagnosed with small cell lung carcinoma. Instead of the proposed short-term rehab to receive radiotherapy, the patient insisted that she should be discharged to her home. Psychiatry was consulted to evaluate the patient's capacity to make a decision regarding treatment. The psychiatrist who evaluated the patient felt that she lacked capacity. Palliative care felt strongly that the patient's capacity should not be challenged, arguing that she has been living independently, doing well and is agreeing to treatment. Through this case, this poster will discuss some of the common ethical dilemmas in decisional capacity evaluation. We will review the most updated guidelines on how to perform a capacity evaluation, how these guidelines are incorporated in residency curriculum, and whether residents from various specialties are

being trained on evaluating decisional capacity. We will also explore and suggest optimal ways to educate primary care physicians on how to evaluate decisional capacity and when to seek psychiatrists' expertise for these evaluations.

No. 94
Depression Associated With Gastric Bypass Surgery With Malnutrition

Poster Presenter: Ulfat Shahzadi, M.D., M.B.B.S.
Co-Authors: Syed Saleh Uddin, Abhimanyu Yarramaneni, Asghar Hossain

SUMMARY:

Background: Over 100,000 bariatric surgeries are performed annually, with gastric bypass being the most common. The annual rate of gastric bypass surgeries increased significantly from 7.0 to 38.6 per 100,000 adults between 1998 and 2002 ($p < 0.001$). There are studies that show there might have been association of increased suicide rate and depression with gastric bypass surgery and malnutrition.

Objective: Report a case of gastric bypass surgery with major depressive disorder and review available literature to find similar or other reported cases of association of depression with gastric bypass surgery. **Case:** We discuss the case of a 55-year-old Caucasian female with recent bariatric surgery six months prior and major depressive disorder, admitted for increasing agitation, depression and suicidal ideation. The patient was feeling helpless and hopeless, had poor sleep and poor appetite, and was getting increasingly agitated and aggressive. She was also making suicidal statements of overdosing on prescribed medication. Her depressive symptoms have been worsening since her gastric bypass surgery. **Discussion:** It is possible that depressive symptoms may worsen in patients who have unrealistic expectations about the results of surgery or who struggle not to regain weight after the procedure. One hypothesis of the association of depression could be low level of serotonin in the brain. Therefore, low carbohydrates, which eventually cause low-level serotonin in the brain, might have a role of depression postoperatively in gastric bypass surgery patients. Oftentimes, patients eat protein and supplements to prevent muscle and mineral loss. Even though tryptophan is one of the amino acids making up protein, studies show that

when protein is eaten, little or no tryptophan enters the brain, and only insulin-induced changes in levels of amino acid—tryptophan—can enter brain. Mild depression after surgery is not uncommon, but severe depression is much less common. Suicidal ideation is a serious red flag that should be immediately addressed. Review of available literature has shown there is association of depression with gastric bypass surgery. Suicide rate after bariatric surgery is at least five times higher than in the general population. All patients should receive education before surgery as to the possibility of depression and the higher rates of suicide in this population. They should also be given education on the symptom of depression and concrete step to follow to get help if they notice they are becoming depressed.

No. 95

The Curious Cases of New-Onset Psychosis With B12 Deficiency: Two Case Reports

Poster Presenter: Aysha Sabri, M.D.

Co-Author: Kristin Escamilla

SUMMARY:

Background: B12 is an essential vitamin required for homeostasis and vital to the neurological and hematological systems. B12 deficiency can have a wide range of neuropsychiatric presentations ranging from fatigue, agitation, depression, mania, cognitive changes including delirium or dementia, acute-onset psychosis, irritability, personality changes, and apathy. B12 deficiency resulting in psychosis is well documented in literature as an organic etiology of a new-onset psychosis. We will discuss two cases of new-onset psychosis in the setting of significantly low levels of B12. **Case:** 1) A 60-year-old female with no prior psychiatric history and at baseline health until one month ago now presents with new-onset psychotic symptoms including auditory hallucinations, paranoia and disorganized behavior. Her past medical history included hypertension, gout, type 2 diabetes mellitus, and medications including metformin, amlodipine, losartan, glimepiride, and allopurinol. No gross neurological or medical abnormalities were noted. Labs were significant for remarkably low B12 at 99pg/mL and folate level mildly elevated over 24.8ng/mL. B12 replacement was initiated with low-

dose antipsychotic. Symptoms resolved by day 5, and B12 level was within normal range. 2) A 47-year-old male with no prior psychiatric history was admitted for worsening mood and new-onset psychotic symptoms including delusional thoughts and auditory/visual hallucinations. He had a past medical history of hypertension treated with antihypertensives. Physical and neurological exam was grossly intact. Labs were significant for low B12 level under 100pg/mL. To target symptoms, B12 was repleted and an antipsychotic trial was started. Psychotic symptoms resolved by day 4 with B12 level within normal range. **Discussion:** These cases describe an example of B12 deficiency resulting in new-onset psychosis in patients without prior history of thought disorder. While these cases, along with other cases discussed in literature, have varying initial presentations, psychotic symptoms with abnormally low B12 values and quick resolution of psychotic symptoms upon B12 repletion remain a common link. While low B12 levels are associated with neurological and hematological changes, multiple studies have shown that psychiatric symptoms may present in the absence of these abnormalities. Multiple etiologies exist for B12 deficiency, and currently, the exact etiology in these cases is not clear. Overall, it remains evident that B12 level should routinely be measured in cases of new-onset of psychiatric symptoms.

No. 96

Management and Considerations of Depression in the Subacute NPO Patient

Poster Presenter: John F. Chaves, M.D.

Co-Author: Patcho Santiago

SUMMARY:

Background: Long-term hospitalization, surgeries with complicated outcomes and a history of major depressive disorder (MDD) are all independent risk factors for depression. Whenever these risk factors intersect in the same patient, the consulting psychiatrist must evaluate and treat psychiatric symptoms to optimize outcomes. This task is further complicated when patients are receiving total parenteral nutrition (TPN) for an indefinite period. Authors have reported that patients on a nil per os (NPO) regimen are more likely to experience psychiatric symptoms. In addition, TPN places

patients at risk for various nutritional deficiencies, which may complicate their presentation. Because of these factors, literature published nearly 30 years ago discussed the importance of psychiatric support for patients undergoing TPN. Though low risk and expense and high benefit, bedside therapy may not provide adequate treatment in these patients. Unfortunately, few nonoral pharmacological treatments exist for the depressed patient. **Case:** In this poster, we present C. W., a 56-year-old male with a history of multiple abdominal surgeries with subsequent small bowel obstruction, epilepsy, major depressive disorder, unspecified psychological trauma, and several lifetime episodes of delirium. He was hospitalized for a high-output enterocutaneous fistula. Oral medications passed through his shortened bowel with little to no absorption. The primary team requested consultation for treatment of delirium. However, after C. W.'s delirium resolved, depressive symptoms remained. Through serial interviews, C. W. portrayed dependent and obsessional personality traits, significant shame and demoralization due to his hospital course, and defense mechanisms that included control, intellectualization, and projection of his impatience and anger. His depressed mood symptoms negatively impacted his care and his relationship with his family. Fortunately, C. W. improved with frequent bedside therapy, particularly the challenging of automatic negative thoughts and the gradual confrontation of his shame and anger. Upon recommendation, the primary team increased the patient's perceived control over his care, including timing his medication distribution. **Results:** C. W.'s case is beneficial for the consult psychiatrist on several levels. The competent consultant must understand the importance of the psychiatric team in caring for such a patient, including a thorough formulation and appropriate treatment plan—authors of a recent randomized controlled trial showed that bedside therapy hastens postsurgical recovery. Possible nutritional deficits and their neuropsychiatric symptoms must be anticipated. Most importantly, when patients like C. W. require antidepressants, there are few nonoral options and a lack of published literature on this issue. The study of nonoral or fast-absorbing antidepressant medications requires a modern update.

No. 97

Acute Urinary Retention and Catatonia in Schizophrenic Male Patient: A Case Report

Poster Presenter: Edgar Alfonso Torres Villamil

Co-Author: Robert Gonzalez

SUMMARY:

Background: Catatonia is a neuropsychiatric syndrome characterized by psychomotor, behavioral, psychological, and behavioral abnormalities. While the neuropsychiatric manifestations of the illness have been recognized since the condition was first described by Kahlbaum in 1874, the associated medical complications have received relatively little attention. One such reported complication is urinary retention.

Methods: In this poster, we describe a case of urinary retention associated with catatonia whereby both conditions responded to treatment with benzodiazepines. **Results:** We presented the case of urinary retention associated with catatonia with subsequent resolution of both conditions following benzodiazepine treatment. While there is a great degree of anecdotal information regarding the relationship between catatonia and urinary retention, we found few published articles describing the phenomenon. A PubMed search using the terms catatonic, catatonia and urinary retention retrieved only one article. This article was a case report published in 1971 of a 33-year-old female schizophrenic patient presenting with both catatonia and associated urinary retention. The authors of this case report noted a resolution of both catatonia and urinary retention after electroconvulsive therapy.

Conclusion: Given the lack of complete understanding of the pathophysiology of catatonia, it is difficult to ascertain the exact etiology of the patient's co-occurring catatonia and urinary retention. The response to the benzodiazepine lorazepam does suggest that the positive treatment response was mediated by modulation of the GABA system.

No. 98

A Complicated Case of Psychosis in an SLE patient

Poster Presenter: Roopa Mathur

Co-Author: Natalia Miles

SUMMARY:

A 23-year-old female with a history of systemic lupus erythematosus (SLE) was seen on the consult service with concern for primary psychiatric illness versus SLE psychosis. Her SLE had been poorly managed due to intermittent compliance with her steroid regimen, and she had received high-dose steroids on multiple occasions when presenting to the hospital with flare-ups, which complicated her psychiatric assessment. She presented as grandiose and intrusive and exhibited delusional and paranoid thinking, which was significantly different from her baseline. She was started on olanzapine for steroid-induced psychosis; however, anti-ribosomal P came back positive, indicating active lupus cerebritis. This was consistent with her severe neuropsychiatric manifestations. She was started on Cytoxan, but unfortunately, her psychosis persisted and her behaviors escalated. She became increasingly more psychotic and threatening, which required chemical restraints at times. She was also being treated with high-dose steroids and received her second dose of Cytoxan for her lupus cerebritis. She required multiple trials of antipsychotics. Her steroid dose was decreased to maintenance, and she ultimately stabilized and was discharged from the inpatient unit closer to her baseline than she had been in several months. This case demonstrates difficulties in treating neuropsychiatric manifestations of SLE, which is further exacerbated by the treatment options available. Patients with multiple factors contributing to their psychosis necessitate treatment with antipsychotics.

No. 99**A Case of Psychosis in India: The Impact of the Recruitment of Family on Treatment Response in a Culture Where Mental Health Is Stigmatized**

Poster Presenter: Roopa Mathur

SUMMARY:

Mr. J. is a 22-year-old male who was brought to the outpatient clinic at a government hospital in Mumbai by his parents and eight siblings with complaints of fearfulness, paranoia, withdrawn behavior, gesticulating behavior, increased vomiting, responding to internal stimuli, speaking to himself, not attending to his abilities of daily living (ADLs) and being unable to work for the last two months in the

setting of returning from a weekend of prayer in the outskirts of Mumbai. His parents attempted to get help through several faith healers, fearing it was “black magic,” but these attempts were unsuccessful, and his symptoms progressed to the point of exhibiting catatonia when he presented to the clinic. After complete assessment, Mr. J. was diagnosed with paranoid schizophrenia. He was started on an atypical antipsychotic (olanzapine) and was advised to titrate quickly in hopes for quicker remission of symptoms. His family was educated about psychotic disorders and mental illness, although they had a difficult time understanding that this was a true medical issue. The most emphasis was placed on the necessity of medication, the genetic predilection, and the importance of familial support and responsibility in ensuring that the patient took his medication so he could improve. Each family member was assigned a particular responsibility over Mr. J.’s life. Mr. J. and his family came back to the clinic three weeks later with report of improvement in functioning. The family stated that they all took turns in ensuring Mr. J. was taking his medication, eating and attending to his ADLs. They saw a change in Mr. J.’s ability to engage, and his paranoia subsided fairly quickly and he was eventually able to care for himself with minimal assistance. The patient had been titrated above max daily dose of olanzapine. Culturally understanding mental illness was difficult, which is likely what led to the patient reaching the point of catatonia on initial presentation after two to three months of worsening symptoms. The gravity of the situation forced each family member to take on personal responsibility over the patient’s care. This was the driving force in the patient obtaining help and adhering to proposed treatment. Had the patient’s family not been involved, he may have dealt with life-threatening complications of untreated psychosis. His family was the key to his compliance, remission of symptoms and overall improvement in functioning. Although his family had preconceived notions about mental illness, their love, care and commitment to his improvement trumped the stigma and ultimately led to better quality of treatment and faster recovery than if he had presented on his own. Despite living in poverty and having minimal education, this family was able to rally together to take care of one of their members.

This familial support and initiative is an asset that should be readily identified and utilized by psychiatric providers to aid in treatment of mental illness.

No. 100

Understanding Stigma in Order to Increase Access to Mental Health Services for Chinese Americans at a Community Service Center

Poster Presenter: Shuo S. He

Co-Author: James Griffith, M.D.

SUMMARY:

Background: Stigma against mental illnesses is a barrier to accessing needed mental health services for many members of racial and ethnic minority groups. Stigma types can be categorized according to the different survival concerns and perceived threats to a stigmatizer's group of identity. Some of these types of stigma affecting the lives of mentally ill persons include peril stigma, moral stigma, disruption stigma, empathy fatigue, courtesy stigma, and internalized stigma. **Objective:** This study will evaluate the types of mental health stigma that exist among Chinese-American immigrants who are receiving primary care at a free community clinic in Gaithersburg, Maryland. **Methods:** Participants who are Chinese-speaking, 18 and older, and patients or volunteer primary care physicians at a free Pan Asian Clinic will be recruited to participate in the study. Responses to survey questions will include participants' basic demographic information. Patients will be given a scale where they will rate positive and negative connotation of mental health terms in Chinese and provide answers to the standardized scale, Barriers to Access to Care Evaluation (BACE), to assess types of mental health stigma. Survey questions will be translated into Chinese through certified interpreters. Patients and physicians will participate in individual key-informant interviews that will elicit major themes and patterns regarding types of mental health stigma experienced in the Chinese-American community. **Results:** Expected data analysis will include quantitative data, including descriptive statistics of demographic information, rating of positive or negative connotations of specific mental health terms in Chinese, and responses to the BACE scale. Qualitative data analysis will include results

regarding types of mental health stigma experienced in the Chinese-American community. **Conclusion:** Expected results will include qualitative and quantitative data that will provide further insights into the types of stigma that exist among Chinese-American communities, which can serve the basis for further educational material and anti-stigma strategies targeted toward this population. This study is supported by the APA/SAMHSA Minority Fellowship Award.

No. 101

Use of Restraints in a Psychiatric Emergency

Poster Presenter: Oluwale Jegede, M.D.

Co-Authors: Saad F. Ahmed, M.D., Tolulope Olupona, M.D., Evaristo O. Akerele, M.D., M.P.H.

SUMMARY:

Background: The utilization of restraints in psychiatry is a very old practice that has generated controversy and differing opinions in terms of ethics and clinical usefulness. The use of restraints has become an important quality measure for psychiatric emergencies, as with other psychiatric services. Proactive measures such as behavioral interventions can reduce the need for restraints and the quality of care provided to patients. Identification of the diagnosis most frequently associated with restraints may be one modality of identifying areas in which these proactive behavioral interventions may be most useful. In this study, an attempt is made to identify these diagnoses. **Methods:** We conducted a retrospective review of all restraint orders between January and June 2016 in the psychiatric emergency department of a community hospital in an urban setting. Data were analyzed using descriptive statistics and chi-square to determine correlation between diagnoses and frequency of restraints. Secondary correlations such as demographic variables and drug use were also assessed. **Results:** 2.9% of all encounters at the psychiatric emergency service during the timeframe of this study resulted in the use of restraints. We found a significant relationship between diagnosis and the frequency of restraints ($p=0.004$). **Conclusion:** Our study presents the characteristics and descriptors of patients who required restraints. A recognition and early identification of the patient's diagnosis may help

proactive management and reduction in the use of restraints.

No. 102

Bowel Medical Clearance: The Importance of History, Physical Exam and Treatment of Constipation for Psychiatric Patients

Poster Presenter: Perry L. Dinh

Co-Author: Benjamin K. P. Woo, M.D.

SUMMARY:

Background: There remains a discrepancy between emergency physicians and psychiatrists about sufficient medical clearance for psychiatric patients. However, the history and physical performed by the emergency physician or emergency psychiatrists may safely and cost-effectively separate organic and mental illnesses, as well as identify problems that may complicate psychiatric hospitalization. Physicians usually prioritize the neurological, trauma and mental status exam for psychiatric patients. Less emphasized, the abdominal and rectal examination can detect previously unrecognized medical problems to facilitate a safe transfer to psychiatric service. **Case:** A 51-year-old postmenopausal female with no past psychiatric disorder arrived to the psychiatric emergency room after not eating and drinking for the past 10 days because “demons inside her head” told her to stop. The patient was thin, catatonic and had significant weight loss. She was started on Zyprexa and Remeron and placed on strict intake and output. Staff supervision was required to promote intake of food and fluids. The patient slowly increased her intake, but “the demons inside backed her up by gluing her vagina and anus.” The patient had not had a bowel movement since five days prior to admission. Milk of magnesia failed to produce a bowel movement. After nine days of admission, further physical examination revealed a distended abdomen with left lower quadrant tenderness. Digital rectal examination revealed a large amount of solid feces that was unable to be manually disimpacted. KUB x-ray showed no fecal impaction, with excess feces throughout the colon. However, an unusual lucent shadow in the abdomen raised suspicion of a foreign body (FB). However, abdomen/pelvis CT revealed a vaginal pessary in place but no radio-opaque FB. Revealing a history of cystocele and rectocele, the patient denied ingesting

or inserting any other foreign bodies into any orifice. She was started on Miralax and given a bisacodyl suppository. Before performing a saline fleet enema, the patient’s pessary was removed in order to decrease the risk of bowel perforation. With manual disimpaction and a fleet enema, the patient was able to have relief from the “demons” blocking her.

Discussion: Psychiatric patients may be associated with higher levels of constipation than the general population due to the effects of the psychiatric illness. Psychiatric diseases, especially depression and anxiety, can exacerbate simple medical problems such as constipation by increasing stress levels and promoting inactivity. Also, poor diet, low fluid intake, medication side effects, and FB ingestion place psychiatric inpatients for increased risk fecal impaction, bowel perforation and fecaloma. Equally important as medications, physical disimpaction is a great tool that can help relieve constipation. In this case, manual maneuvers recognized and treated a surreptitious problem that could have prolonged hospitalization.

No. 103

A Case of Pseudologia Fantastica in the Emergency Department

Poster Presenter: Robyn P. Thom

Co-Authors: Polina Teslyar, Rohn Friedman

SUMMARY:

Mr. D. is a 28-year-old man with depression, hepatitis C, biliary colic, multiple concussions, and chronic back pain who presents to the emergency department with abdominal pain clinically concerning for appendicitis. He had been admitted one month prior for a cholecystectomy with challenging postoperative pain management. En route to imaging, he discloses that he has been very depressed since his fiancée died. His pain is treated with intravenous morphine, and psychiatry is asked to quickly evaluate him before he goes to surgery. Imaging is negative for appendicitis, surgery is cancelled, and his disposition from the emergency room is left to psychiatry. He reports he has been depressed and suicidal since his pregnant fiancée was killed in a car crash eight months ago. This is incongruent with the history he provided one month ago when he reported he was engaged. He is unable to recall the date of his fiancée’s death and evades

further discussion of his mood symptoms by spontaneously providing details of his social history, including the deaths of multiple family members during childhood, his work as a physics and mathematics professor at a prestigious university, and success as a Division I football athlete. Records reviewed from our institution and from another institution where he had been psychiatrically hospitalized in the past year revealed he had provided a similar social history to multiple providers but with slight inconsistencies in details supplied, such as causes of death or vacillation in his field in science. This prompts us to obtain collateral information from his father, who indicates that the patient is homeless, unemployed and has severe opioid use disorder with the pattern of peregrinating across hospitals and across states with an elaborate false social history. When gently confronted with these inconsistencies, the patient initially readily provides further details to explain them. However, when further pressed, he says he thought he needed a “dramatic” reason to seek help. He appears perplexed as to why we attempted to clarify his previous statements or their relevance for his care and continues to state that he is very depressed and would not be able to maintain his safety in the community. Although it is not unusual for psychiatrists to encounter deception in the emergency department for a variety of reasons, the multiple disparate themes of his deceptions, the longevity of stories that persisted across multiple visits with different providers and different institutions, the level of detail supplied, and the vast departure from reality make this case unusual. Elements of substance use disorder, malingering, factitious disorder, and narcissistic traits may all contribute to such a presentation. We discuss how this constellation suggests Delbrueck’s description of pseudologia fantastica, review the characteristics of pseudologia fantastica and discuss our approach to management of this case in the emergency department.

No. 104

A Survey to Assess Emergency Department Doctors’ Interest in Telepsychiatry to Provide Emergency Mental Health Care

Poster Presenter: Sudhakar K. Shenoy, M.D.

SUMMARY:

The shortage of psychiatrists across the U.S. has led to overburdened emergency departments (EDs) trying to provide services for patients with mental illness. Telepsychiatry may be a viable option to address this problem. However, the willingness of ED physicians to use telepsychiatry in Illinois has not been addressed. This research will survey ED physicians across Illinois about their willingness to use telepsychiatry in their ED. This study is important because there is increasing use of telepsychiatry, but there is little empirical research pertaining to ED use.

No. 105

Investigating the Ingredients of Synthetic Cannabinoids and Relation to Other Illicit Substances

Poster Presenter: Arushi Kapoor

Co-Author: Partam Manalai, M.D.

SUMMARY:

Background: The use of synthetic cannabinoids (SC) is increasing across the country, especially in the poor neighborhoods of the greater Washington, DC (GWDC) area who are predominantly African Americans. To better treat, prevent complications and devise preventative strategies, it is imperative to know the chemical structure of these SC. **Methods:** In this study, blood/urine samples from 98 individuals presenting with altered mental status to Howard University Hospital (with clinician-suspected SC use) were analyzed for specific SC. **Results:** Ninety-eight samples were sent for analysis, and 69 (70%) samples were positive for synthetic cannabinoids. The two categories of SC were indole- (N=40) and indazole- (N=53) based compounds (total 14 different compounds). Thirty-two patients had a combination of indole- and indazole-based SC. Of those with positive SC results, 68% of the patients had a combination of SC and one or more of the conventional illicit drugs—THC (36%), PCP (22%), cocaine (10%), benzodiazepines (19%), opioids (3%), and others (7%). **Conclusion:** Our results indicate that clinicians are intuitively cognizant of unusual presentation associated with SC. The most common co-occurring substance of misuse was THC, followed by benzodiazepines and PCP. Surprisingly, concurrent use of cocaine was far less common in

our sample, even though cocaine is among the most common illicit substances in the GWDC area.

No. 106

Shrooms and Psychosis: A Case of Prolonged Psychosis Associated With First-Time Psilocybin Use

Poster Presenter: Tarek Aly, M.D.

Co-Authors: Hector Cardiel, Caitlin Aguiar, Ninoshka Lobo, Charles Wilson, Asghar Hossain

SUMMARY:

Investigating the course of illness in a patient within the schizophrenia spectrum is of paramount importance for the treatment of the patient. D. S. is a patient who had an established diagnosis of schizoaffective disorder bipolar type with many years of treatment resistance and a significant functional decline. While investigating her course of illness, we discovered a unique onset of her illness. In the context of minimal risk factors and an absence of any other identifiable significant history, a first-time psychotic episode induced by psilocybin brought positive symptoms prolonging past the expected timeline. Her symptoms persisted past the realm of substance-induced psychosis and a diagnosis in the schizophrenia spectrum was favored. We outline the course of her illness and the treatment regimen that provided symptomatic improvement and better quality of life. We make the argument that the first-time psilocybin use and its effect on 5-HT_{1A/1D/2A/2C} receptors may present a significant trigger in conjunction with a predisposition toward mental illness in a multitude of psychiatric spectra.

No. 107

A Case of Frontal Lobe Tumor and Marital Problems

Poster Presenter: Tarek Aly, M.D.

Co-Authors: Ninoshka Lobo, Charles Wilson

SUMMARY:

It is imperative for psychiatrists in the emergency setting to assess a change from baseline behaviors in a previously healthy, fully functioning adult as a potential warning sign for a severe, life-threatening process present in the brain. We present the case of a 54-year-old man without any significant past medical or psychiatric history who presented with a two-month history of explosive anger outbursts

toward his wife and functional decline in customer service at work. The symptoms worsened until the patient began to complain of “midnight headaches” that were eventually followed by morning headaches and severe daytime migraines. The patient saw his PCP, who, concerned by new-onset neck stiffness, ordered an MRI, for which the patient did not know the results before he presented to the ER the following day secondary to worsening behavioral outbursts and migraines. With the threat of divorce, his wife urged him to come to the ER after discussing the worsening symptoms with his PCP. Repeat MRI found a 4.8 x 3.1 x 4.8cm left anterior frontal mass with extensive vasogenic edema and 12mm of left to right subfalcine herniation and downward herniation with beginnings of uncus herniation. He exhibited symptoms of anosognosia and neglect, unable to acknowledge his migraines, outbursts or repeat the phrases present on the two MRI reports. He refused all medical intervention. We present the challenges faced in treating this patient, his course of hospitalization and his subsequent management in this case report.

No. 108

The Effect of Utilizing Psychiatric Advance-Practice Nurses (APRNs) on Psychiatric Emergency Department Patient Care, Flow and Safety

Poster Presenter: Yehonatan Borenstein

SUMMARY:

Background: Per a CDC report from May 2012, the emergency department (ED) serves the role of the primary care physician for much of the underserved population. The Health Resources and Services Administration estimates that, by 2020, there will be a primary care provider deficiency of about 20,400 full-time equivalent physicians in this country. It also estimates that an increase in primary care nurse practitioners could reduce this shortage by 14,000. The goal of this study was to quantify the effect of utilizing advance practice registered nurses (APRNs) in a busy, urban, inner-city academic hospital’s psychiatric emergency area. We hypothesized that the use of APRNs would improve patient flow and improve patient and staff safety. To test this, we created an APRN “fast track” in our lower-acuity, unlocked walk-in area. **Methods:** Two time periods

were investigated. Period 1, from November 2014 through January 2015, served as our control group, where all psychiatric walk-in cases were evaluated by licensed psychiatrists. In period 2, from November 2015 through January 2016, we implemented the “fast track,” where our attending psychiatrists were assisted by APRNs. The hospital’s electronic medical records systems were searched to identify patients who were registered initially in the psychiatric unlocked area. A total of 1,436 encounters were reviewed; patient volume from each period was assessed by admission to the locked psychiatric ED versus discharge from the walk-in area. We computed the mean length of stay for period 1 versus period 2 and compared these using a t-test. Results are expressed as means and standard deviations. **Results:** In period 2, the number of behavioral response codes for the emergency area decreased by over 50%. For patients who were placed on an involuntary hold, the mean time spent in the locked psychiatric ED decreased significantly. In period 1, the mean time from admission to discharge was 29.4 hours, with a standard deviation of 26.8. In period 2, the mean time from admission to discharge was 24.2 hours, with a standard deviation of 21.7. The difference of 5.2 hours is statistically significant ($t=2.39$, $df=508$, $p=0.017$). **Conclusion:** Use of APRNs in the lower-acuity, unlocked walk-in area of our psychiatric emergency services was associated with a statistically significant decrease of average length of stay of patients dispositioned from the locked, high-acuity area and a significant decrease in use of behavioral restraints, despite equivalent patient volumes in each period studied.

No. 109

Engagement of Ultra-High Utilizer in the Psychiatric Emergency Service

Poster Presenter: Sina Shah-Hosseini, M.D., M.S.E.

SUMMARY:

Lincoln Hospital is part of the Health and Hospital Corporation, which serves the poorest congressional district in the United States and is among the busiest emergency rooms in the country, averaging approximately 170,000 visits per year. We present the case of a 42-year-old man with over 600 emergency department visits complaining of various

psychiatric symptoms, including symptoms suggestive of substance-induced psychosis, substance-induced depression, self-reported symptoms of depression that clear up in less than 12 hours, and self-injurious behaviors such as cutting, overdose of medications and conditional suicidal ideation. Despite intensive efforts to engage the patient in outpatient mental health services, substance use rehabilitation and housing services, the patient has consistently refused or failed to follow up with referrals. The patient has reported repeatedly that he refuses city shelter services because they are too unsafe and has engaged in a recurring pattern of using the emergency department as a place to sleep overnight, subsequently requesting discharge in the morning. This patient has been deemed to be an ultra-high utilizer of the psychiatric emergency service, with a continuous cycle of requesting care and then refusing when needs are met. This case demonstrates that current psychiatric and substance use treatments do not meet the needs of this patient, who is part of a significant subset of patients who demonstrate similar behavior. Previous retrospective studies have shown that high utilizers tend to be homeless, have a developmental delay, have personality disorders, have history of inpatient psychiatric admissions, are uncooperative with treatment recommendations, have history of substance use, have history of incarceration, and/or have poor primary social support. This subset of patients tends to utilize a significant amount of limited clinical resources and may play a part in increasing waiting times in the ED. Cases such as these, with patients refractory to engagement, have intensified the debate of developing targeting programming toward this population subset. Hospitals with such population may benefit from partially reducing the cost of services. Small steps in identification of these subsets of ultra-high utilizers and engagement of these patients can result in significant cost savings. Previous studies have documented efforts in reducing the cost associated with the ED visits of these ultra-high utilizers. However, creative strategies such as designating a small part of the emergency department as a safe haven for these patients and as non-treatment areas with some clinical oversight as needed may help in reducing the cost. It would also make available

resources for patients who need more acute attention.

No. 110

Shots Fired! A Case of Paraplegia Resulting From Security Officer Weapon Use in a Behavioral Emergency

Poster Presenter: Keri A. Stevenson, M.D.

SUMMARY:

Background: The Joint Commission, AMA and APA currently do not have positions on the use of Tasers, pepper spray, handguns, or lethal force by hospital personnel in the setting of behavioral emergencies. *The New York Times* recently reported on several cases of psychiatric patients being severely injured or killed as a result of weapon use by hospital security during behavioral emergencies, and we present one such case. **Case:** A 28-year-old male with a past psychiatric history of schizoaffective disorder, bipolar type, presented voluntarily to a local hospital for evaluation of psychosis. While awaiting transfer to a psychiatric hospital, he became agitated and grabbed a hospital security officer's Taser. He was subsequently shot by the officer and sustained gunshot wounds to the chest, abdomen, arm, and leg, resulting in a T6/T7 spinal cord injury and paraplegia. During the following five-week hospitalization, he was treated by our psychiatry consult service, and his psychosis gradually resolved with the initiation of lithium and risperidone. **Discussion:** A 2014 survey reported that handguns were carried by hospital security officers in 52% of the 340 responding medical centers. This is a notable increase from 22% in a similar 2011 survey. In this case, a psychotic patient voluntarily seeking psychiatric treatment was severely injured and permanently paralyzed from the waist down as a result of four gunshot wounds sustained in an altercation with an armed hospital security officer. The exact details of the ED visit, including whether the patient received any medication prior to the incident, whether de-escalation techniques were used and whether there were any inciting factors that caused the patient to take possession of the officer's Taser, are unknown. It is also unknown whether other staff members, patients or visitors would have been harmed had the officer not intervened in this manner. Nonetheless, the recent

media attention that similar cases have attracted paints a negative picture of emergency psychiatric care. Since this may serve as an additional deterrent to seeking necessary care, a position statement from the APA seems warranted. This issue is currently being examined by the APA's Council of Psychiatry and the Law.

No. 111

Factors Predicting Post-Concussive Symptoms in Military Servicemembers

Poster Presenter: Jacques T. Maxwell, B.A.

SUMMARY:

Background: Mild traumatic brain injury (MTBI) is among the most consequential injuries affecting today's military, with up to a third of all servicemembers returning from deployment with MTBI. Health care costs are nearly four times greater in veterans with TBI, and MTBI is among the most salient risk factors for PTSD and severe depression. Due to varied and individualized responses to MTBI, reliable predictors of postconcussive symptoms (PCS) remain elusive. Using a sample of active duty servicemembers, we examined standardized behavioral measures and demographic characteristics to determine their efficacy in predicting PCS. The goal of this study is to identify key factors that correlate with PCS, describe the extent of reported symptoms and utilize stepwise linear regression to determine which factors possess independent predictive value. **Methods:** Baseline measures and demographic information was collected from 356 active duty servicemembers with history of MTBI by interview during study enrollment. Measures analyzed included the PTSD Checklist–Military Version (PCL-M), Patient Health Questionnaire (PHQ-9), Connor-Davidson Resilience Scale, and Pittsburgh Sleep Quality Index. Demographic factors analyzed included prior mental health treatment, years of education, military occupational specialty (MOS) category, military rank, total prior deployments, cumulative deployment time, and cumulative TBIs. PCS outcomes were measured by the Rivermead Post-Concussion Symptoms Questionnaire score. **Results:** Higher sleep quality and higher resilience scores predicted reduced levels of PCS. Higher PCL-M and PHQ-9 scores, past mental health treatment, support-

oriented MOSs, and greater cumulative TBIs predicted greater levels of PCS. Surprisingly, total prior deployments, cumulative deployment time, education years, combat-oriented MOSs, and military rank showed no PCS predictive value. Overall, individual behavioral measure scores showed greater predictive value than demographic factors when predicting PCS. **Conclusion:** Selected behavioral measures and demographic factors demonstrate significant prognostic value in determining PCS following MTBI. Our results inform the identification of high-risk patient subgroups and support selection of treatment targets amenable to modification such as sleep interventions and resiliency education.

No. 112

Response to Voluntary Stopping of Eating and Drinking as a Means of Suicide in an Elderly Patient: An Ethical Dilemma

Poster Presenter: Erin Dooley, M.D.

Co-Authors: Chelsea Wolf, M.D., Donna Chen, M.D., M.P.H.

SUMMARY:

Background: Voluntary stopping of eating and drinking (VSED) is defined as an act by a capacitated individual who deliberately chooses to stop eating and drinking with the intent of hastening death due to unendurable suffering. We present the case of an elderly woman with a history of untreated depression who refuses nutrition and hydration as a means of suicide. **Case:** Ms. N. is an 89-year-old female with a history of untreated depression since the death of her husband seven years ago who was voluntarily admitted to the inpatient psychiatric unit for the treatment of suicidal ideation. Three days prior to admission, the patient had stopped eating and drinking and expressed a desire to end her life this way. She endorsed hopelessness regarding non-life-threatening residual deficits from a stroke several weeks prior and identified the acute trigger for her suicidal ideation as a recent argument with her son-in-law. According to family members, the patient had a history of manipulative behavior, and they suspected that she was behaving in an attention-seeking manner. The patient admitted that if she was able to reconcile with her family, she might reconsider her desire to die. However, her

family was unwilling to make amends. The patient was deemed to have decision-making capacity. Given this, as well as given the possibility that treatment of this patient would likely include involuntary feeding, an ethics consult was sought. Her long-term PCP was involved in the discussion as well and reported that her wish to die was consistent with previous attitudes that the patient had expressed to him intermittently over the past several years. Ultimately, the ethics committee recommended that the patient's wishes to stop eating and drinking be honored. Shortly thereafter, she was discharged to hospice, where she died a few days later. **Discussion:** There is growing acceptance in the field of medical ethics that if a person has capacity, then he or she has the right to refuse nutrition and hydration. A primary role of psychiatrists, however, is the prevention of suicide. Allowing someone who is not terminally ill to stop eating and drinking with the intention of killing themselves contradicts what we typically do in psychiatry, raising the ethical dilemma of respect for one's autonomy versus beneficence. **Conclusion:** This case brings to light interesting issues of the influence of depression on one's medical decision-making capacity, the rationality of VSED in a patient with a primary psychiatric diagnosis in the absence of a terminal physical illness, the perceived ability to treat the diagnosis in question, psychiatrists' response to VSED as an autonomous act or as a means of suicide requiring intervention, and the influence of types of stigmata, including age and mental illness, on suicide intervention.

No. 113

Surrogate Decision Making in a Homeless Patient With Post-Stroke Dysphagia and Combative Behavior: Highlighting Legal and Ethical Considerations

Poster Presenter: Kristin Beizai, M.D.

Lead Author: Yash Joshi, M.D., Ph.D.

SUMMARY:

Mr. R., a 57-year-old homeless male with an unknown psychiatric history and a past medical history of left middle cerebral artery stroke with residual expressive aphasia and right-sided hemiparesis presented to the hospital with acute altered mental status. He had a longstanding history

of multiple medical problems and nonadherence with medications and follow-up care. He was admitted after he was found to be in hypertensive emergency and transferred to the ICU. After stabilization and transfer to the medical floor, he continued to be altered, with fluctuating obtundation and intermittent episodes of agitation with assaultive behavior. MRI revealed early acute infarct of the posterior limb of the right internal capsule and right globus pallidus, as well as medial left superior cerebellum. He had significant dysphagia and dysarthria, which required him to be placed on NPO restriction, but Mr. R. persistently demanded oral food and water, which precipitated psychiatric consultation to evaluate decision-making capacity. Interview of Mr. R. was limited by expressive aphasia, and he was noted to be paranoid, particularly of the health care staff, and was unable to express understanding of his current medical condition and recommended treatment. He was found to lack decision-making capacity. Over the next several days, Mr. R. attempted elopement multiple times and was subsequently placed on an involuntary hold for grave disability. Mr. R. had ongoing difficulties communicating with and trusting providers and volunteered information so that contact could be made with Mr. T., the son of the owner of the bar (now deceased) where Mr. R. had worked some years ago. They had maintained a relationship over the years, with Mr. R. performing odd jobs for Mr. T. and collecting his mail from Mr. T.'s home address. Interestingly, Mr. R. had given Mr. T. his bank card, which held funds from his monthly social security income, which Mr. T. disbursed to Mr. R. on a weekly basis. Mr. T. was approached to serve as Mr. R.'s surrogate decision maker since Mr. R. did not have an advance care directive or any known next of kin, and Mr. T. agreed. The hospital ethics team was also consulted to help coordinate care and assist with navigating potential dilemmas in this case. As Mr. R.'s cognition slowly improved, he still demanded the lifting of dietary restrictions and declined dysphagia rehabilitation and physical therapy. Mr. T. was an active surrogate in many critical decisions, including advancement of the diet and appropriateness of a feeding tube. Mr. T. consistently based his decisions on his longstanding understanding of Mr. R.'s values, which included a need for independence. In this

poster, we use this case to highlight the multiple ethical and legal dilemmas that must be considered by psychiatric consultants when using surrogate decision makers who know patients in unusual circumstances, all with the goal of honoring the patient's values and expressed wishes.

No. 114

A Request for a Penile Prosthesis in a Man With a History of Pedophilia: Ethical Analysis of Duty to Treat and Duty to Prevent Harm

Poster Presenter: Kristin Beizai, M.D.

Lead Author: Yash Joshi, M.D., Ph.D.

SUMMARY:

Studies done on recidivism in sex offenders show that the overall rate is relatively low: 10–15% after five years, approximately 20% after ten years and approximately 30% after twenty years. These data suggest that limiting therapy for erectile dysfunction may be ethically problematic in those with history of sexual offense and that each case must be considered individually. In this poster, we describe a case that illustrates this tension. Mr. A., a 66-year-old married domiciled male with a history of an unspecified anxiety disorder, presented to urology at his local hospital for evaluation of penile prosthesis. He had a history of erectile dysfunction and had failed oral therapy. Mr. A. had a history of being incarcerated for three years in his 40s for a single sex offense of a toddler, but denied being a pedophile. Ethics consultation was requested because urology providers felt uncomfortable placing a penile prosthesis in Mr. A. out of concerns of the risk of pedophilia and sexual violence recidivism. The patient had been assessed by general psychology consultants one year prior and determined to be at a low risk for recidivism, but on discussion of the case with members of the ethics and urology teams, an individualized assessment of the potential risks was recommended from a mental health clinician with expertise in forensics. The patient was subsequently referred for specialty psychological evaluation by a clinician with expertise in working with sexual offenders and underwent formal sexual violence screening. The evaluation revealed that the patient was at an elevated risk for sexual violence, and a behavioral intervention plan was created for Mr. A. to seek further psychological treatment prior to

consideration of the penile prosthesis. We provide an overview of the ethical case formulation involved in treating those with sexual offenses for erectile dysfunction, including considerations in the usage of oral agents or penile prosthetics. We discuss conflicting duties to treat and provide care balanced against the obligation to prevent harm and protect others, contrasting the dilemmas in this case from those that arise in the treatment of erectile dysfunction in those who have sexually transmissible infections.

No. 115

Medical, Ethical and Legal Consideration in Treating Chronic Psychiatrically Ill Female Patients of Reproductive Age

Poster Presenter: Elizabeth Leung

Co-Author: Lidia Klepacz, M.D.

SUMMARY:

Ms. J. is a 42-year-old African-American pregnant female at 32 weeks gestation with a past psychiatric history of schizophrenia and treatment noncompliance, followed by the ACT team and with her last discharged from the psychiatric inpatient unit one week prior after Haldol decanoate intramuscular injection was given prior to discharge. She was brought in by ambulance requested by the outpatient obstetrician to labor and delivery for medical workup to rule out preeclampsia after presenting with suspected symptoms. Upon arrival, psychiatry consult was requested by obstetrical service for the patient having active psychotic symptoms and paranoid delusions, denying pregnancy, and refusing all medical interventions including vital signs, blood pressure and fetal monitor, and labs. Ms. J. was assessed to have no capacity to refuse medical treatment. After she was determined to be medically stable, she was admitted under involuntary status to the inpatient psychiatric service as her third admission during this pregnancy. Ms. J. has a long history of schizophrenia with predominant paranoid features, treatment noncompliance, and prior history of giving birth at home to a 24-week fetus, who did not survive, and a baby boy in the toilet, who is being raised by her niece. Ms. J. was transferred from the inpatient psychiatric unit to labor and delivery when she was in labor; child protective service was involved, and

her child's custody was expected to be taken away from her. The clinical management when encountering pregnant women with chronic psychiatric illness can present major ethical dilemmas to clinicians for the challenges of how to respect a patient's autonomy while assisting to prevent possible adverse consequences for the patient and pregnancy. Pregnancy complications including low birth weight, trauma associated with birth and poor prenatal care are not uncommon in this population, and 50% of mothers with schizophrenia lose custody of their children. In this poster, we will discuss and review literatures on the medical, legal and ethical considerations regarding management of female patients of reproductive age with severe psychiatric illness, decision making capacity, and assisted and surrogate decision making, with consideration to weigh the autonomy of the pregnant patient and the best interest of the fetus.

No. 116

Transgender and Intellectually Disabled: An Ethical Dilemma

Poster Presenter: Melanie K. Miller, M.D.

SUMMARY:

C. is a 39-year-old patient born biologically male and seen at an outpatient clinic. He has a diagnosis of mild intellectual disability and is followed for depression and gender dysphoria. During the early years of his treatment, he frequently expressed that he preferred to dress in women's clothing when he was in private but could not do so in public because of his parents' disapproval. He referred to himself as male at this time. His presentation was complicated by hypersexual behaviors that acutely worsened and consisted of him grabbing women's genitalia and making frequent inappropriate comments about their bodies. He was referred to endocrinology at this time, and during their initial assessment, he endorsed the wish to take hormones to transition to female. He did not feel comfortable discussing this issue with his parents, who to this point had assisted in all medical decision making, due to their disapproval. He was started on medroxyprogesterone 150mg intramuscularly weekly to treat his hypersexuality. Of note, he and his parents were in agreement about starting this

medication. His hypersexual behaviors improved significantly, but he continued to ask about transitioning to female. Endocrinology referred to psychiatry to help determine if he had the capacity to make this decision. The purpose of this poster is to examine the ethics of both using chemicals to blunt sexuality in patients with intellectual disabilities as well as their ability to choose to transition to the opposite sex. Both of these issues fall under the larger spectrum problem of attempts to blunt expression of sexuality in patients with intellectual disabilities. His behaviors toward women were inappropriate and therefore did need to be addressed, but is it right to use a chemical to suppress his desires? If he continues to express the desire to transition, is he able to make this decision?

No. 117

Postpartum Exacerbation of OCD: A Case Report

Poster Presenter: Melanie K. Miller, M.D.

SUMMARY:

Mrs. B. is a 31-year-old Caucasian female with a past psychiatric history of OCD and MDD who presented to outpatient psychiatry to establish care. She was first evaluated by psychiatry two years prior when she had an inpatient admission for intrusive thoughts of doing sexual things to her sister's children. She reported an onset in the eighth grade of intrusive thoughts of harming others that progressed to thoughts of sexually harming children. These thoughts were associated with arousal, causing them to be particularly distressing for her. She began avoiding situations where she would be around children and worried constantly that she might have done something. She did not seek treatment until her psychiatric admission and had not told her family about these thoughts until this time. During her hospital stay, she was started on fluoxetine and risperidone and was discharged after some improvement. Upon presentation to the clinic two years later, 15 months after the birth of her child, she complained of a significant increase in intrusive thoughts of sexually violating her infant. These thoughts were associated with sexual arousal and subsequent shame and avoidance and had been ongoing since giving birth, but due to shame, she did not report them. She had been off all medications since her pregnancy and was restarted on fluoxetine

after presenting to the outpatient clinic. OCD is an illness that goes hand in hand with shame. New mothers are a group particularly at risk as there is an increase in OCD symptoms in the postpartum period. The more concerning the thought, the less likely the patient will be to volunteer these in an appointment, especially if they are of a sexual nature toward her new infant. Additionally, this is a crucial time in mother-infant bonding, and women will commonly withdraw from their child due to fear of harming them in some way. The purpose of this case report is to highlight one particular case of severe postpartum OCD and discuss potential screening tools that can be used in the postpartum period.

No. 118

A Case Report of Transdermal Selegiline Use in Pregnancy and Lactation

Poster Presenter: Joanne Orfei, D.O.

Lead Author: Rebecca L. Bauer, M.D.

Co-Author: Christina L. Wichman, D.O.

SUMMARY:

Background: The effects of untreated maternal mental illness are associated with significant risk to maternal and infant well-being. Providers are acknowledging the importance of incorporating psychiatric treatment into perinatal and postnatal care. In the past decade, research surrounding psychotropic drug use in pregnancy has expanded. Antidepressants such as serotonin reuptake inhibitors have been extensively researched; however, monoamine oxidase inhibitors, an older class of antidepressants, have little to no literature on their safety profile in pregnancy. The transdermal selegiline patch, which at low doses does not require dietary restrictions, is appealing to providers and patients. Monoamine oxidase inhibitors play an important role in management of treatment-resistant depression and atypical depression.

Methods: This is a case report of maternal use of the transdermal selegiline patch during pregnancy for management of treatment-resistant depression. The case focuses on pregnancy outcomes and postpartum considerations such as breastfeeding and infant exposure through breastmilk transfer.

Results: A female with treatment-resistant depression who demonstrated a positive response to the transdermal selegiline patch continued

medication throughout conception up until eight weeks gestation. Selegiline was discontinued from weeks 8–17 gestation, then resumed at 17 weeks gestation throughout the duration of her pregnancy. No adverse fetal effects, including congenital malformations, growth development or postnatal withdrawal symptoms, were observed. On infant serum testing, selegiline levels were undetectable, demonstrating low transfer in the breast milk.

Discussion: To our knowledge, this is the first case report of selegiline use in pregnancy for treatment of depression. This case highlights a positive outcome with use of the transdermal selegiline patch in pregnancy in regards to treatment of maternal depression, no observed pregnancy complications and low infant exposure to the drug with breastfeeding. Additional research is necessary to confirm the safety profile of monoamine oxidase inhibitors during pregnancy and in breastfeeding.

No. 119

Considerations in Treating Insomnia in the Pregnant Patient

Poster Presenter: Simriti K. Chaudhry, M.D.

Co-Author: Leah Susser, M.D.

SUMMARY:

Background: Insomnia in pregnancy is common, and disrupted sleep affects up to 94% of women in their third trimester of pregnancy. Despite the prevalence of sleep impairment in pregnancy, there is very little known about the safety of sleep aid medications and the effects of their use on the developing fetus. We present pertinent issues pertaining to sleep in pregnancy, especially in the setting of psychiatric illness, as well as a review of the literature on psychotherapeutic and pharmacological interventions for the treatment of insomnia.

Methods: We will discuss risks and benefits of various treatments of perinatal insomnia in the context of mood and anxiety disorders, including psychotherapy (CBT, sleep hygiene) and medication management. We conducted a PubMed search of published articles that reviewed commonly prescribed sleep aid medications and their use in pregnancy. These medications include antihistamines, benzodiazepines, hypnotic benzodiazepine receptor agonists (HBRA), trazodone, and melatonin. We present a summary of

findings regarding potential risks and benefits of these medications in pregnancy. **Results:** In women who have sleep disruptions resulting from normal physiological changes, nonpharmacological interventions such as sleep hygiene techniques and stimulus control are often effective and should be considered primary interventions. Studies assessing the safety of the aforementioned sleep aids present with mixed results; however, many of these studies have significant methodologic limitations. The safety profile of melatonin use during pregnancy is especially limited. Overall, the results of the aforementioned medication studies, other than melatonin, are reassuring, and these medications do not appear to be major teratogens. While less is known about melatonin, there are various potential safety concerns that will be discussed. **Conclusion:** There is a bidirectional association between sleep disruption and psychiatric disorders. Consequently, it is important to treat sleep impairment symptoms in the context of the underlying psychiatric illness and to focus on sleep maintenance to prevent symptom burden during the perinatal period. The safety of commonly prescribed sleep aids during pregnancy is understudied and often limited by study design and confounding variables of concurrent medication use. Further well-designed studies assessing the safety of commonly prescribed medications for insomnia are warranted.

No. 120

Improving Access to Family Planning at an Inpatient Psychiatric Facility

Poster Presenter: Stephanie C. Tung, M.D.

Lead Author: Young Ji Jenice Kim

Co-Authors: Jeffrey Tran, Cynthia Chavira, Timothy Botello

SUMMARY:

Background: Many female psychiatric patients are sexually active and express interest in obtaining family planning counseling. However, family planning counseling is not routinely performed in mental health settings. This quality improvement project aims to assess the level of interest in and efficacy of family planning referrals from an inpatient psychiatric facility. **Methods:** Female patients, ages 18 to 45, who were hospitalized between August 2013 and April 2016 were

identified. Resident physicians attempted to meet with eligible patients to discuss reproductive health and offer referrals to a family planning clinic (FPC). Demographic information and OB/GYN history were recorded. Data regarding attendance to scheduled FPC appointments and initiation of contraceptives were obtained. **Results:** 320 patients were screened. 221 were interviewed, and 162 were considered eligible for an FPC referral. Sixty-two patients were referred to FPC appointments, 17 patients attended the appointments and 12 received birth control. **Conclusion:** Despite having multiple risk factors for reproductive health problems, including substance use, acute psychiatric illness, history of unplanned pregnancies, low rates of contraceptive use, and the use of potentially teratogenic medications, fewer than half of eligible patients expressed interest in family planning referrals (44%), and of those interested patients, only 25% attended scheduled FPC appointments. Further research is needed to determine and address the barriers to providing family planning to patients in the psychiatric inpatient setting.

No. 121

Improving Perinatal Mental Health Knowledge and Capacity Among Psychiatrists

Poster Presenter: Stephanie C. Tung, M.D.

Co-Authors: Lavanya Wusirika, Isabel Lagomasino, Emily Dossett

SUMMARY:

Background: Perinatal mental illnesses are common and lead to adverse effects on mothers, children and families. Most psychiatrists lack expertise in caring for patients with these disorders. By training faculty psychiatrists in perinatal mental health, the clinical capacity and quality of care for patients with perinatal mental illness may be improved. **Objective:** Develop and pilot an educational intervention on perinatal mental health for faculty psychiatrists, evaluate the effectiveness of this intervention on faculty knowledge and self-efficacy, and evaluate whether faculty outcomes are related to changes in residents' knowledge and self-efficacy. **Methods:** Five faculty psychiatrists and eight residents in an outpatient psychiatric clinic were recruited. At baseline and three months, faculty and residents completed a 28-question assessment of knowledge

and self-efficacy. This assessment evaluated four educational areas: diagnosis of perinatal illness, informed consent, antidepressant use in the perinatal period, and antipsychotic and mood stabilizer use in the perinatal period. **Results:** At baseline, faculty had received limited training in perinatal mental health. After the educational intervention, overall faculty knowledge scores increased by 8.6% ($p=0.04$). Resident scores decreased by 4.2% after the intervention. **Discussion:** Faculty experienced the greatest knowledge gains in the areas of diagnoses and informed consent. These results are consistent with recent continuing medical education (CME), which suggests that educational meetings can result in small to moderate improvements in knowledge and professional practice. Multiple exposures to clinical material have been demonstrated to be more effective than single exposures. It is therefore likely that increased exposure of faculty to educational content combined with an increased number of patient cases would lead to greater improvements in knowledge and efficacy. Future directions include revamping the educational assessment to include more case-based scenarios and making monthly meetings more didactic in nature. Additionally, we hope to examine whether these educational efforts impact patient outcomes.

No. 122

Women and Substance Use in a Residential Treatment Facility: A Retrospective Look at the Substance Alcohol Rehabilitation Program at Point Loma

Poster Presenter: Bethany Gaylord, D.O.

Co-Authors: Sean Hurdiss, M.D., Paulette R. T. Cazares, M.D., M.P.H.

SUMMARY:

This poster utilizes existing medical records, quantitative benchmarks and treatment outcomes from the substance abuse and rehabilitation program (SARP) at Point Loma Naval Base, specifically focused upon female patients, in order to assess for differences in success rates, recidivism, nuances in treatment plans, and subsequent care within the active duty female population. There currently exist too few studies analyzing gender-specific differences in a one-month residential

substance treatment program, though previous research does suggest a different phenomenological model for female patients in intensive substance use treatment compared to males. The modalities studied and programs analyzed vary greatly, from different population subsets, different lengths of treatment and the program models themselves. Currently, there appear no focused studies comparing male to female success rates in a residential substance treatment program. That being the case, this retrospective study uses the results of a structured treatment program with female patients and provide more insight into active duty female sailors and Marines as they concluded their treatment. In addition, if certain themes and trends differ between men and women, the study hopes to help lay the foundation for more patient-tailored treatments in the future. Through the use of multiple metrics and a comprehensive record review, hard data will then pave the way for future possible changes to both the SARP Point Loma program and possibly substance treatment programs throughout the DoD.

No. 123

Postpartum Psychosis. A Case of Bipolar I Disorder Exacerbation in a Postpartum Patient

Poster Presenter: Natalia Miles

Co-Author: Roopa Mathur

SUMMARY:

Background: Approximately 85% of women experience some form of postpartum mood disorder after giving birth. The *DSM-5* defines the postpartum period as the first four weeks following childbirth. These mood disorders can take the form of postpartum or “baby” blues, postpartum depression and, when most severe, postpartum psychosis. Between one and two out of 1,000 women will experience this devastating postpartum psychiatric illness, and when they do, it can be a life-changing event that encompasses not just themselves but their entire family. This makes the diagnosis and appropriate management of this potentially life-threatening event particularly important. **Case:** A 34-year-old female with prior history of bipolar I disorder, previously well maintained with both psychotherapy and psychopharmacology was admitted to an inpatient psychiatric unit due to

concern for onset of manic symptoms. The patient was two weeks into the postpartum period of her first pregnancy. In the days prior to her inpatient admission, she was evaluated by the psychiatric consultation service, where she was found to be exhibiting only subtle hypomanic symptoms. Depakote and lithium had previously been decreased in order to reduce risk of fetal birth defects. Her previous psychiatric decompensation and resultant inpatient hospitalization had been approximately eight years prior. Her presentation at this time included religious preoccupations, mood lability, irritability, and fluctuating thoughts of suicide and homicidal ideations toward her infant. Her existing medication regime of lithium, Zyprexa and Depakote was initially increased; however, her symptoms were ongoing. Additional medication trials were tried with poor effect. During the course of her nearly 90-day admission, she experienced extreme worsening of her symptoms, which only began to remit, slowly, with introduction of ECT. The patient was eventually able to have supervised visits with her infant and family while on the unit, responded well to medications and was eventually discharged home to close outpatient care. This case depicts the extreme importance of close monitoring of postpartum patients with existing psychiatric illnesses, especially in the setting of pharmacological alterations in treatment. Providers and patients must weigh the risks of fetal versus maternal complications and be vigilant in watching for the emergence of psychiatric symptoms with a focus on early intervention.

No. 124

Obsessive-Compulsive Disorder in the Perinatal Period

Poster Presenter: Jennifer Ann Albert, M.D.

SUMMARY:

While obsessive-compulsive disorder (OCD) in pregnancy and the postpartum period has not been well studied, current literature describes its unique clinical presentation required for diagnosis and current medication management practices, which will be reviewed. Research studies indicate that mothers, who are mentally unstable during pregnancy and the postpartum period, have an increased risk of having infants who are born

prematurely with a low birth weight, are more difficult to soothe, and have an increased risk of attentional deficits. Since these are well-known risks, diagnosis and proper treatment to expectant and postpartum mothers are essential. Despite this, OCD in the perinatal period is largely underrecognized. The purpose of this poster is to present current research on OCD in the perinatal period, the potential causes and optimal treatment methods. This poster will also present two cases of OCD, one with a first onset during pregnancy and the other, also first onset, during the postpartum period.

No. 125

Thrombocytosis and Transaminitis in a Breastfed Infant Exposed to Lamotrigine: A Case Report and Literature Review

Poster Presenter: Nicole Shirvani

Co-Author: Lilian Gonsalves

SUMMARY:

In 2003, the anticonvulsant lamotrigine was given FDA approval for mood stabilization in bipolar disorder. The information on the long-term effects of lamotrigine on the fetus or infant is sparse. While the goal is to prevent drug exposure to the fetus and infant, discontinuing the mother's use of lamotrigine during pregnancy increases the risk for relapse of the mother's symptoms, particularly mania. Such symptoms may include engaging in harmful behaviors and difficulty bonding with the infant. With this in mind, studies have shown that lamotrigine is excreted in large amounts in breast milk and that serum plasma levels of lamotrigine in the breastfed infant can reach anywhere from six to 50% of maternal serum concentrations; one study found a mean infant serum concentration of 18%. A recent case of mild thrombocytosis and transaminitis in a nine-month-old infant exposed to lamotrigine via breast milk was brought to treatment. The mother slowly began to decrease breastfeeding frequency while introducing solid foods and supplementing with formula. The infant's lab values returned to normal within the next two months; the mother continued to breastfeed. A review of the literature was conducted, focusing on the effects of lamotrigine on breastfed infants. To date, there is one case report of apnea in a nursing 16-day-old infant with elevated lamotrigine levels. In several

studies of lamotrigine use, there have been no reports of adverse effects to infants exposed to the medication, either in-utero or through breast milk. In a 2008 study, Newport et al. report mild thrombocytosis in seven out of eight infants. Based on these findings, unless clinically indicated, there is no absolute contraindication to breastfeeding while taking lamotrigine. The decision to continue or start the medication should be made with an individualized risk-benefit analysis, and close monitoring of breastfed infants is recommended.

No. 126

LGBTQ Topics in Child and Adolescent Psychiatry Fellowship Training: Implementing a Formal Curriculum to Improve Fellow Confidence and Knowledge Base

Poster Presenter: Wesley Hill, M.D.

Co-Authors: Yusuf Ali, M.D., Mariam Rahmani, M.D., Nikhil Rao, M.D.

SUMMARY:

Background: Research has shown there is a significant disparity for LGBTQ patients within the health care system. Many residency and fellowship programs lack formal education regarding LGBTQ issues. Addressing this training/practice gap may be an area of intervention to improve health outcomes for the LGBTQ population. **Objective:** Improve the knowledge base and confidence of child psychiatry fellow trainees regarding the treatment of LGBTQ patients. **Hypothesis:** Embedding topics specifically dedicated to LGBTQ issues within the child fellow didactics curriculum will improve fellows' knowledge and confidence when treating this population. **Methods:** A pre-survey was administered to assess the University of Florida Child and Adolescent Psychiatry fellows' knowledge and confidence in treating LGBTQ patients. A month of didactics, with a total of 16 lecture hours, was exclusively dedicated to studying LGBTQ topics. Knowledge and confidence were reassessed with a post-survey. **Results:** Comparison of pre- and post-survey results showed fellows' subjective self-reported confidence levels for treating LGBTQ patients and the scores of knowledge-based questions both improved following the month-long LGBTQ-themed didactics seminar series. There was no change in frequency of asking sexual orientation in clinic assessments. **Conclusion:**

This study indicates that dedicating as little as one month of didactics to LGBTQ topics has the potential to improve knowledge and confidence of child and adolescent psychiatry fellows when treating this underserved and vulnerable population. Limitations of the study include a small sample size (six fellows participated in the pre-survey and five in the post-survey) and the subjective nature of questions regarding confidence and practice habits.

No. 127

Open Transgender Service in the U.S. Military: Military- and Veteran-Specific Treatment Issues and the Development of an Active Duty Gender Clinic

Poster Presenter: Aidith Flores-Carrera, D.O.

Lead Author: Andrew C. Buchholz, D.O., M.P.H.

SUMMARY:

On July 28, 2015, United States Secretary of Defense Ashton Carter signed a memorandum that effectively ended mandatory administrative separation of members from the United States military on the basis of gender identity. This memorandum paved the way for the issuance of Department of Defense Instruction (DODINST) 1300.28—"In-Service Transition for Transgender Servicemembers." This instruction, effective October 1, 2016, provides the necessary guidance to allow for open transgender military service and a pathway by which servicemembers may receive gender-affirming medical treatment. Despite this statutory acceptance, strong stigma and multiple perceived barriers to the full integration of transgender servicemembers in the United States military remain. Such significant external negative perception is multiplicative with internalized stigma in transgender individuals and is strongly associated with the development or exacerbation of comorbid mental illness. With an estimated 15,000 transgender individuals currently on active duty and another 130,000 transgender veterans living in the United States, it is imperative for all psychiatrists—regardless of military affiliation—to increase their awareness so they may appropriately treat gender dysphoria and mental illness in transgender military members. As such, the purpose of this poster is threefold. First, we review DODINST 1300.28 with focus on the role of the military-affiliated psychiatrist. Second, we provide a primer on military

culture and a discussion of military-related stigma and explore the emphasis on hypermasculinity placed on servicemembers—which often persists in veterans long after their military service is completed. Finally, we present the development of an active duty gender affirmation clinic at a major military treatment facility to serve as a potential model for military- and veteran-specific transgender treatment going forward.

No. 128

Gender Dysphoria and Self-Castration: A Case Report

Poster Presenter: Francis Smith

SUMMARY:

Gender dysphoria made its debut in the *DSM-5* as a replacement for gender identity disorder. Gender dysphoria refers to the distress caused by an incongruence between one's experienced or expressed gender and one's assigned gender. Recently, the media has focused attention on transgender celebrities who can afford the costly reassignment surgeries. However, many gender dysphoric patients are unable to pay for the expensive procedures. Pricing for the various surgeries can easily exceed \$100,000 in out of pocket cost. For those patients without insurance or those denied by their plan, transition surgery is essentially unattainable. This case report highlights the plight of an individual who resorted to self-castration in an attempt to become her true self.

No. 129

Understanding LGBT Refugee Mental Health: Informing Clinical Care

Poster Presenter: Mark Messih, M.D.

SUMMARY:

Within the United States and globally, there has been a shift toward acceptance of lesbian, gay, bisexual, and transgender (LGBT) individuals. Despite these advances, many nations continue to stigmatize, criminalize and legitimize abuse of these communities. Global statistics reflect high levels of violence targeting individuals based on sexual orientation and/or gender identity. Concurrently, the number of refugees seeking asylum within the United States is rising. In 2013, 69,909 refugees

applied for asylum, an increase from 58,159 in 2012. 3.8–10% of refugees entering the United States identify as LGBT, translating to approximately between 2,656 and 6,991 LGBT refugees. Studies have looked at mental illness and service provision in refugees and, others, on mental health in LGBT populations. Increasingly, researchers are looking at the intersection of these areas, focusing on mental illness in LGBT refugee communities. In this poster, the most commonly cited psychiatric conditions facing LGBT asylum seekers will be presented. Next, the role of psychiatrists in the asylum-seeking process will be reviewed. Finally, guidelines informed by existing literature will be put forward to inform clinical care. It is important to note researchers working in psychiatry, psychology, traumatology, social justice, and ethics have explored this topic in recent years; the focus of this work is to review their experiences and relay findings to the psychiatric community.

No. 130

Decreasing Cardiometabolic Risk in Outpatient Psychiatry: A Quality Improvement Initiative

Poster Presenter: Rouzi Shengelia, M.D.

Co-Authors: Ketki Shah, M.D., Jeffrey Levine, M.D., Panagiota Korenis, M.D., Ahmed Albassam, M.D., Frozan Walyzada, M.D., Wen Gu, Ph.D., Amina Hanif, M.D., Reminder Chema, M.D., Muhammad Zeshan, M.D., Sabina Fink, M.D., Juan A. Rivolta, M.D., Ronak Patel, M.D., Houssam Raai, M.D., Gregory Davidson, L.S.W.C.

SUMMARY:

Patients with chronic mental illness die on average 10 years earlier than the general population. Only 17.5% of this mortality is attributed to suicide and unintentional injuries, and most of these deaths are related to comorbid medical conditions, specifically of cardiac, pulmonary and infectious etiology. Of those, 60% are related to cardiovascular disease. It has also been well reported that atypical antipsychotic medications increase the risk for developing metabolic syndrome, risk factors such as abdominal obesity, high triglycerides, hypertension, and elevated fasting glucose, which increase one's chance of developing heart disease, stroke and diabetes. While research has helped psychiatrists understand who is at risk for developing metabolic

syndrome and has identified areas of focus that may decrease mortality, including smoking, substance use, physical inactivity, and poor diet, there remains little understanding about how psychiatrists can effectively translate this knowledge to effective practices in their day-to-day patient encounters. This performance improvement project involved 300 psychiatric patients from our outpatient psychiatry clinic who were identified as having high cardiometabolic risk based on being prescribed one of two atypical antipsychotics (olanzapine and Seroquel), which have been identified as medications likely to cause metabolic syndrome. We employed evidence-based strategies including educating the patient and the provider about metabolic risk, switching to different antipsychotic medication, and engaging those who were eligible in a physical activity program (InShape). We aim to review the clinical characteristics of such patients before and after the interventions utilizing Healthcare Effectiveness Data and Information Set (HEDIS) performance measures. Pharmacological and nonpharmacological interventions shown to decrease cardiometabolic risk will be discussed.

No. 131

Risperidone-Induced Leukopenia and Neutropenia: Review

Poster Presenter: Pratik Bahekar, M.B.B.S.

Co-Authors: Archana Adikey, Michael J. Politis, D.O., Vasiliki Eirini Karagiorga, M.D.

SUMMARY:

Background: Risperidone-associated leukopenia and neutropenia occur in up to four percent of patients receiving risperidone. Our literature review attempts to identify the clinical significance of these findings.

Methods: We conducted an extensive literature search on PubMed with the following MeSH terms: allergy and immunology, immunology, risperidone, interleukins, prostaglandins, neutrophils, leukocyte count, schizophrenia spectrum and other psychotic disorders, blood, cerebrospinal fluid, cytology, immunology, physiology, and physiopathology.

Results: Risperidone-induced neutropenia occurs within one to two weeks of treatment, which is reversible. Severity is associated with the dosage and duration of exposure. Proposed mechanisms include direct bone marrow suppression, antibody

formation against hematologic precursors, and peripheral WBC destruction. The mean nuclear lobe number in neutrophils found in the peripheral blood smear suggested predicting the patients at risk for neutropenia. Patients who developed leukopenia as a result of one antipsychotic appear to be at higher risk of developing leukopenia when given another antipsychotic, indicative of a possible genetic predisposition. Possible risk factors are African-Caribbean race who have a higher prevalence of benign ethnic neutropenia, younger age and a low baseline WBC count. The interaction of different cofactors, cumulatively, could lead to risperidone blood count dyscrasias. Additional proposed mechanisms include interference with bone marrow hematopoiesis, the damaging of mature blood cells related to toxic effects, or immunological mechanisms in genetically predisposed patients. Lithium was also reported to correct leukopenia of various etiologies, causing leukocytosis, via direct stem cell stimulation, stimulation of G-CSF, cytokines, and demargination. **Conclusion:** Leukopenia and agranulocytosis are life-threatening side effects, but routine WBC count monitoring is not indicated in treatment with atypical antipsychotics, except clozapine. A reasonable approach would be an ANC at baseline, after one or two weeks and after three to six months, especially in the African-Caribbean population, those who have a higher prevalence of benign ethnic neutropenia, younger population, and patients who have developed leukopenia and neutropenia with other antipsychotic administration. Because of diurnal variation, blood sampling should be avoided in the morning. Lithium may be used to reduce the extent of leukopenia and neutropenia, especially for the patients demonstrating a poor clinical response to other antipsychotics. More studies are needed to identify mechanisms behind the development of neutropenia and leukopenia to decrease morbidity, curtail the trial and error approach of psychopharmacology, ensure better patient adherence and outcomes, and lower treatment costs.

No. 132

Role of Homocysteine in Psychiatry

Poster Presenter: Narissa R. Etwaroo

Co-Authors: Aastik Joshi, Shawn E. McNeil, M.D.,

Krutika P. Chokhawala

SUMMARY:

Although homocysteine has been widely implicated in the etiology of various physical health impairments, especially cardiovascular diseases, overwhelming evidence indicates that homocysteine is also involved in the pathophysiology of various psychiatric disorders. There are several mechanisms linking homocysteine to biological underpinnings of mental health disorders. It has been found that homocysteine interacts with NMDA receptors, initiates oxidative stress, induces apoptosis, triggers mitochondrial dysfunction, and leads to vascular damage. Elevated homocysteine levels might also contribute to cognitive impairment that is widely observed among patients with affective disorders and schizophrenia. A plausible hypothesis for these associations is that high homocysteine levels cause cerebral vascular disease and neurotransmitter deficiency, which causes psychiatric morbidity.

No. 133

A Rare Case of Galactorrhea Associated With Citalopram

Poster Presenter: Sarayu Vasan, M.D., M.P.H.

SUMMARY:

Background: An elevated prolactin level with resultant galactorrhea as a side effect of antidepressants is not well understood, although it has been well documented with a multitude of physiological and pathological causes. However, with the increased use of antidepressant medications, there has been a rise in the frequency of these rare reported symptoms, leading to interest in the mechanism of hyperprolactinemia associated with selective serotonin reuptake inhibitors (SSRIs). We report a rare case of elevated prolactin levels and subsequent galactorrhea while on treatment with citalopram, which resolved after discontinuation of the medication. **Case:** A 39-year-old Hispanic female with no past psychiatric illness and past medical history significant only for hypertension was evaluated and treated for depression with citalopram that was titrated up to 40mg daily. A positive response to the treatment was noted; however, after three months, she developed new-onset galactorrhea. Laboratory findings revealed

elevated prolactin. Investigations to rule out organic etiologies were found to be negative, including pregnancy test. Magnetic resonance imaging (MRI) of the brain was found to be unremarkable, with no findings of mass lesions or pituitary adenoma. It was hypothesized that galactorrhea was an adverse effect of treatment with citalopram, which was eventually tapered off, and a repeat prolactin level after six weeks was found to be within normal range. Subsequently, galactorrhea also resolved.

Discussion: Citalopram is a combination of two enantiomers, R and S. It is believed that the efficacy of this drug is due to high affinity binding to serotonin receptors. The neurotransmitters responsible for prolactin release include serotonin and dopamine. Serotonin works directly by stimulating postsynaptic 5HT receptors, releasing neuropeptides known as prolactin-releasing factors located in the paraventricular nucleus, regulating the transcription of prolactin. Serotonin also indirectly leads to prolactin release by inhibiting dopaminergic transmission at tuberoinfundibular dopaminergic neurons. However, the mechanisms and interactions between dopaminergic and serotonergic systems are complex and not well understood. Long-term serotonergic and subsequent antidopaminergic effects due to citalopram therapy could be a plausible cause in this case, as she developed galactorrhea after three months. **Conclusion:** A few case reports suggest galactorrhea associated with escitalopram, sertraline, fluoxetine, and fluvoxamine. However, to the best of our knowledge this is the first report of hyperprolactinemic galactorrhea in association with citalopram. These findings signify a strong association of SSRIs with prolactin abnormalities. This calls for future research and confirmation in large double-blind studies to further illustrate the prevalence and precise mechanisms of hyperprolactinemia and galactorrhea due to SSRIs.

No. 134

Physical Exercise and Depression: A Review

Poster Presenter: Tyler Kimm, M.D.

SUMMARY:

Major depression (MDD) is a relatively common and disabling disorder. Large, empirical studies have evaluated the effectiveness of pharmacological

treatment. The Sequential Treatment Alternatives to Relieve Depression (STAR*D) study demonstrated that up to half of patients may not meet remission criteria after two sequential medication trials, and just over 30% may not meet those criteria after four. Nonpharmacological treatment paradigms have also been studied. Physical exercise, including aerobic exercise and resistance training, has been demonstrated to have significant beneficial effects for patients with depression and with anxiety. Exercise may also improve depressive symptoms in those with comorbidities such as cancer and other chronic illnesses. Reviewed next is a brief summary of the evidence of the efficacy of exercise in the treatment of major depression. Rethorst et al. performed a meta-analysis of randomized clinical trials (RCTs), analyzing 58 trials with a total N of 2,982. Their analysis calculated an overall effect size (ES) of -0.80 for exercise versus control groups, for whom the ES was not found to statistically differ from 0. After limiting the analysis to participants determined to be clinically depressed (N=574), the ES changed to -1.03, with decrements in the BDI and HRSD scores of 10.60 and 8.11, respectively. Wegner et al. reviewed 32 meta-analyses of the effects of exercise on depression, with a total N of 48,207. Their analysis showed an overall ES of 0.56, indicating a moderate effect. The antidepressant effect of exercise increased for those participants experiencing depressive symptoms prior to the intervention (ES=0.73), as compared to control participants. As shown above, physical exercise has a beneficial, alleviating effect on the symptoms of depression. Exercise was not found to differ significantly from medication or psychotherapy treatment arms in these studies. In addition to its efficacy, exercise carries a low dropout rate, which did not differ from placebo. One study noted no difference in rates of adverse effects between exercise groups and controls, except that those in the active intervention reported less musculoskeletal pain. Exercise interventions may show long-lasting therapeutic effects, and those who continue exercising may show decreased depressive symptoms in the future. The exact causative pathophysiology of MDD is unknown. The adult neurogenesis hypothesis postulates that disruption of hippocampal neurogenesis is associated with MDD. The antidepressant effects of exercise may be

related to the production of factors known to play roles in neurogenesis and neuroplasticity, including BDNF, VEGF and other molecules. Additionally, exercise may dampen the response of an overactive HPA axis, decreasing glucocorticoid-related damage to the hippocampus.

No. 135

GWAS and System Biology Analysis of Depressive Symptoms Among the COPDGene Cohort

Poster Presenter: Jonathan Heinzman

Co-Author: Gen Shinozaki, M.D.

SUMMARY:

Background: Depression is the most common psychiatric disorder in the United States, having a prevalence of around 16.2%. Although research on twin studies supports genetic factors influencing depression, few genetic risk factors have been found. Because depression is likely a heterogeneous disorder whereby synergetic effects from many mutations with small effect sizes cause depression, a hypothesis-free approach with a genome-wide association study (GWAS) is needed. To detect such small effect sizes, a large sample size is vital. However, collecting both genotypic and phenotypic data on large sample sizes is quite difficult and expensive. To overcome these challenges, this study used the available genome-wide genotypic data and phenotypic information from over 10,000 subjects collected through the COPDGene study. The COPD patient population was used because depression has higher prevalence among COPD patients and depression is also associated with increased mortality of COPD patients. This study attempts to determine if genetic risk factors are associated with depression phenotypes among the COPDGene cohort. **Methods:** This study used data from the COPDGene study and created African-American (AA) and non-Hispanic White (NHW) subgroups. The NHW group had 1,639 cases (24.6%) and 5,031 controls. The AA group had 407 cases (12.3%) and 2,893 controls. Depression phenotype was defined using combinations of the Hospital Anxiety and Depression Scale (HADS) and antidepressant use. An established pipeline of GWAS was used to obtain a list of the top hit genes for each ethnic group. The top hit genes were then analyzed through various network analysis tools such as GeneMANIA, DAVID,

ConsensusPathDB, and GLITTER to determine if the top hit genes and their networks were relevant to depression. DAVID and ConsensusPathDB determined common pathways between the genes, while GeneMANIA investigated genetic interactions between the genes, and GLITTER analyzed the expression of the top hit genes in various tissues from the human body, including different parts of the brain. **Results:** Top hit genes were in the range of $p \approx 10^{-7}$, not surviving the genome-wide significance level. Among top hits, however, several genes from NHW were associated with depression and other psychiatric conditions in the literature. Network analysis showed that top hit genes were forming networks involved in synaptic transmission functions. Further, top hit genes showed a trend of expression that was greater in the brain than in other tissues. These findings indicate that, even from an imperfect phenotypic definition of depression used in this study, the COPDGene dataset can provide significant opportunity for genetic association studies of depression. **Conclusion:** Future studies using the COPDGene study data with improved psychiatric phenotype would significantly contribute to the understanding of the genetic factors of depression.

No. 136

Pathway Analysis of Genetic Overlap of Schizophrenia, Bipolar Disorder and Autism Spectrum Disorder Characterizing Common Etiology

Poster Presenter: Naveen S. Khazada

SUMMARY:

Background: Bipolar disorder (BPD) and schizophrenia (SCH) collectively present with similar neuropsychiatric behavioral disturbances. Autism spectrum disorder (ASD) also presents with impaired social interaction and communication or repetitive behaviors. Each of these illnesses have complex inheritance estimates of over 80%, with multiple overlapping genetic and environmental influences implicated in disease risk and course. Further, these disorders have been proposed to share common etiology, although the underlying molecular structure of this overlap has not been specifically characterized. Recent applications of whole-genome technologies have discovered rare copy number variants and common single-nucleotide

polymorphisms associated with the risk of developing these disorders. We sought to characterize the functional attributes of clinically and etiologically relevant genetic overlap between BPD, SCH and ASD. **Methods:** We utilized recently published lists of susceptible genes for ASD (792 genes), BPD (290 genes) and SCH (560 genes) and identified overlapping genetic influences common to all three conditions. The resulting list of genes was submitted to GeneAnalytics software for pathways analysis and genetic profiling. GeneAnalytics, powered by GeneCards, profiles tissues and cells, diseases, pathways, and phenotypes of submitted gene lists to provide rank scores subdivided into categories (e.g., diseases, tissues, pathways, and phenotypes). Disease-matching scores are derived from the number of overlapping genes and the nature of the gene-disease association, tissue specificity, abundance, and function of the gene. **Results:** Twenty-three genes were identified as common to SCH, BPD and ASD. The top five of nine biological super pathways identified for this list included circadian entrainment (10 genes, score=37.0), amphetamine addiction (five genes, 24.2), SID susceptibility (six genes, 24.1), selective serotonin reuptake inhibitor (three genes, 17.5), and monoamine transport pathways (three genes, 16.6). Five brain tissues types were identified: medulla oblongata (11 genes, scores 2.1), thalamus (10 genes, 2.0), hypothalamus (nine genes, 2.0), hippocampus (nine genes, 1.9), and cerebellum (eight genes, 1.9). Six genes were common to all five tissue types (BDNF, DRD2, CHRNA7, HTR2A, SLC6A3, and TPH2). **Conclusion:** Genetic overlap between SCH, BPD and ASD strongly mapped to biological super pathways, especially circadian entrainment and brain tissue types related to cognition and memory. Overlapping genes were related to brain growth and development (e.g., BDNF) and neurotransmitter functions (e.g., DRD2, HTR2A). The results illustrate the converging influences of dopamine, serotonin and acetylcholine pathways involved in mood, behavior, cognition, and impaired social functions disturbed in these disorders.

No. 137

The Use of Pharmacogenetics to Improve Outcomes in Treatment-Resistant Schizophrenia

Poster Presenter: Hannah Shehata

Co-Authors: Jesus Bucardo, M.D., Julia L. Hoang, M.D.

SUMMARY:

Background: A patient's response to antipsychotic medications is partially dependent upon how the drug is metabolized by the CYP metabolic enzymes in a person. Studies have shown that people vary in the alleles that encode multiple CYP enzymes and that the difference in an individual's alleles affect how quickly a patient metabolizes the medication. They may range differently among ethnicities from a poor metabolizer to an ultra-rapid metabolizer, and this may significantly affect how physicians prescribe psychotropic medications. Pharmacogenetics is beginning to help physicians understand why patients are not always responsive to medications and can help reduce polypharmacy. This is especially true in treatment-resistant schizophrenia, where the use of multiple antipsychotic medications has become the rule rather than the exception.

Methods: The study looked at three treatment-resistant schizophrenia patients who had failed multiple trials of antipsychotic medications and underwent pharmacogenetic testing using a commercially available test. A saliva sample was collected by cheek swab and sent for CYP enzyme activity analysis. A report of the genetic profile for each patient was generated detailing enzyme metabolic activity and a list of antipsychotic medications ideal for the individual's treatment. Medication changes were made based on the recommendation of the pharmacogenetic report. Efficacy was measured based on the Clinical Global Impressions Scale (CGI) and Global Assessment of Function (GAF). **Results:** Improvement occurred in all three patients. CGI-I scores before pharmacogenetic testing was 6 in all three patients. After medication changes were made based on pharmacogenetic results, CGI-I scores ranged from 1 to 2.

Furthermore, GAF improved from 15–20 to 60–65.

Conclusion: Pharmacogenetics is a new way to help clinicians determine which medications are ideal for treatment of their patients on a genetic level. It can allow clinicians to move away from trial-and-error dosing to more individualized care. Other pharmacogenetic studies recommend using pharmacogenetics for new-onset schizophrenia before initiating any type of treatment to prevent

the trial-and-error approach of prescribing antipsychotic medications, but no true guidelines have been established. Pharmacogenetics has the potential to help clinicians minimize polypharmacy as well as improve the function and outcomes of not only treatment-resistant schizophrenic patients but of those suffering from other mental health illnesses as well.

No. 138

Apical Petrositis and Clivus Osteomyelitis: Two Cases of Gradenigo Syndrome Illustrating the Importance of Patient Compliance

Poster Presenter: Jenilee Generalla, M.D.

Co-Author: Sanjay Yadav

SUMMARY:

Background: Gradenigo's syndrome, or apical petrositis, is a rare complication of otitis media. The petrous bone is located adjacent to the deeper clivus bone. We compare and discuss the case of a relatively compliant patient and the case of a noncompliant patient, both with Gradenigo's syndrome with significant differences in course and duration. **Case:** 1) A 28-year-old female diagnosed with borderline personality disorder and followed at outpatient an psychiatry clinic presented with cough and congestion. A week later, she complained of right ear pain and fever, diagnosed with otitis externa and prescribed Cortisporin drops for 10 days. A week after this, she was diagnosed with acute otitis media and otitis externa and prescribed antibiotic otic drops. Four days later, she complained of double vision and right-sided headache, with elevated white count. She was diagnosed with right petrous apicitis, and symptoms resolved following transcranial drainage, mastoidectomy and tympanostomy tube placement. 2) A 53-year-old male diagnosed with depressive disorder unspecified with medical history significant for uncontrolled diabetes, diabetic nephropathy progressed to chronic kidney disease, diabetic retinopathy, ischemic cardiomyopathy, hypertension, hyperlipidemia, and lumbar radiculopathy presented with falls due to weakness, left-sided headaches, deafness, and diplopia. Compliance to medication was poor, with HbA1c as high as 15.9 and at least six no-show appointments with neurology and nephrology over 10 months. Fourteen months ago,

he presented with mastoiditis and was later diagnosed with pseudomonas requiring mastoidectomy and drainage. About a year later, he was hospitalized for progressive dysphagia, and PEG was placed. A month later, he presented with fall associated with weakness, double vision, deafness in left ear, headache, and persistent dysphagia. Imaging was limited by severe claustrophobia related to a childhood trauma of being locked in a laundry machine. He was clinically suspected to have Gradenigo's syndrome, which was then confirmed with CT only when instructed to specifically look at the petrous bone. He was sent to an advanced academic hospital, where he was diagnosed and treated for clivus osteomyelitis, infected with pseudomonas. **Discussion:** Although the incidence of Gradenigo's syndrome is rare, even more so is clivus osteomyelitis. Anatomically, the petrous bone is laterally adjacent to the clivus, a deeper and central bone. When uncomplicated, the diagnosis and treatment of Gradenigo's syndrome can be completed in less than a month, as demonstrated by case 1. Case 2 illustrates a 14-month course and ultimate infectious spread deeper into the clivus bone, leading to an even rarer type of osteomyelitis. The case 2 patient had a long history of noncompliance, as evidenced by his uncontrolled diabetes, which had already led to renal, cardiac and ocular end organ disease. His noncompliance led to a significantly longer and complicated course of events.

No. 139

Fear-Related Reaction Times During Inspiration vs. Expiration: A Possible Biomarker for Anxiety States

Poster Presenter: Maryam Soltani, M.D., Ph.D.

Co-Author: Christina Zelano

SUMMARY:

Background: Local field potential activity in the human olfactory system tracks the respiratory cycle in the form of rhythmically enhanced delta oscillations upon inhale. Recent data from our lab suggest that these olfactory cortical respiratory oscillations may propagate to the amygdala, where they could potentially impact fear-related response times, suggesting the possibility that amygdala-associated behaviors may be affected by the respiratory cycle. Preliminary data suggest that fear

recognition is faster when stimuli are encountered during inhale compared to exhale. Differences in fearful response times over the respiratory cycle could infer a behavioral advantage during times of heightened stress due to stress-related changes in breathing patterns. In this way, the effect could act as a biomarker of healthy emotional processing in the brain. This raises the possibility that respiratory-linked changes in fear recognition might break down in clinical populations such as those with generalized anxiety disorder. **Methods:** Healthy subjects ages 18–30 will be recruited. Prior to beginning the study, subjects will be affixed with either a pneumotachometer positioned in front of the nostrils (nasal task) or with breathing belts placed around the abdomen (oral task). Subjects in the oral task will have tape placed across their nostrils to minimize nasal contributions to breathing. The emotion task requires viewing faces with either a fearful or a surprised expression and indicating by button press the expression viewed. Stimulus duration will be 100ms, with an intertrial interval (ITI) randomly jittered between two and five seconds (mean ITI of 3.5 seconds) to ensure that stimuli will fully “tile” all phases of the respiratory cycle. Eighteen different faces will be presented, each repeated 10 times. A single session consists of 180 emotion recognition trials. Subjects will also participate in a control gender discrimination task, viewing faces with either a happy or neutral expression. Task parameters are otherwise identical. The order of the emotion and gender tasks will be counterbalanced across subjects. Stimuli will come from the Ekman face set. **Conclusion:** The human olfactory system has considerable anatomical overlap with brain areas affected by psychiatric diseases, including schizophrenia, depression and anxiety and is interconnected with the amygdala, critical for emotion and fear processing. We will present data linking respiration-modified fear responses to trait anxiety scores in a cohort of healthy human subjects, with the future goal of testing these effects in clinical populations.

No. 140

Diagnostic Utility of EXIT25 in Hoarding Disorder: A New DSM-5 Diagnosis

Poster Presenter: Mallikarjuna Bagewadi Ellur, M.D.

SUMMARY:

Background: Hoarding disorder (HD) is a new neuroscientifically proven DSM-5 diagnosis, which was long debated as diagnostic criteria of OCD rather than a disease entity. Neurocognitive impairment has been proposed as major difference between these two disorders. Executive function, which is likely mediated by frontostriatal neural substrates, is believed to characterize HD and contribute to symptom development and maintenance. Hence, we review the utility of The Executive Test (EXIT25) as a diagnostic tool.

Objective: Understand neuropsychological functioning in hoarding disorder, assess and compare executive functioning deficit using EXIT25 among patients diagnosed with hoarding disorder and healthy controls, and emphasize the need for thorough cognitive function assessment in patients with hoarding disorder. **Methods:** Two patients diagnosed with hoarding disorder and two healthy controls without hoarding habits were included in the study. The Executive Interview (EXIT25), a 25-item bedside examination of executive function that takes 15 minutes for a trained examiner to administer, was performed on all four individuals.

Results: Results of EXIT25 were reviewed and interpreted based on the score obtained. Higher EXIT 25 scores indicate greater executive cognitive dyscontrol. When compared between two study groups, the group diagnosed with hoarding disorder had significantly higher scores, indicating impairment in executive function. **Conclusion:** These results have broader clinical implications, suggesting the use of executive function tests like EXIT25 at bedside when developing intervention strategies for patients with hoarding disorder. This could also further help them in their rehabilitation and recovery. Hoarding disorder is rarely diagnosed in the hospital setting. Enhancing the awareness among PM psychiatrists to use cognitive function tools at the bedside could help in identifying and evaluating this disorder.

No. 141

Clozapine Initiation and Relapse Rates in a State Safety Net Hospital

Poster Presenter: William Levitt, M.D.

SUMMARY:

The use of clozapine has long been reserved for treatment-resistant schizophrenia. Clozapine goes underutilized nationwide. We will research the rates of initiation of clozapine in a 343-bed psychiatric state safety net hospital with a large population of treatment-resistant schizophrenics. Patients will be followed in outpatient clinic for compliance. Additionally, we plan to investigate the reasoning behind its underutilization here.

No. 142

Culture, Religion and Mental Health: A Proof of Concept Case Report

Poster Presenter: Anum Bhatia

Co-Authors: Umang Shah, Mark Famador, M.D.

SUMMARY:

According to the CDC, most of the communities in the U.S. have a multiethnic population. It has become imperative for health care professionals to discover and respect individual cultural values as a significant part of the biopsychosocial model. Moreover, this integrated approach for assessing and treating our patients becomes very essential while working in a multiethnic society for stronger alliance and better treatment results. This case report provides proof of such concept, discussing an immigrant from the Dominican Republic (DR) who presented to emergency room at Cooper Hospital in New Jersey with complains of being the victim of witchcraft. The patient started to have progressively worsening auditory and tactile hallucinations for a month, with a strong intent to end his life. Pharmacological treatments and therapies had minimal improvement on his condition during initial course of admission at the psychiatry inpatient unit. An exorcism was performed by a chaplain at the unit, respecting his wishes to get the demon out of his body, with resultant significant improvement of symptoms and overall well-being. Culture, religion and spirituality can all play a significant role as precipitating, perpetuating and protective factors in the biopsychosocial model of an individual. While the biological approach—more particularly pharmacological intervention—facilitates a speedy and sustained recovery, a more holistic approach that integrates the social aspect (in this particular case, the accepted practice or rite of exorcism within the Catholic faith) can potentially offer better

treatment results. Above all, it ultimately enhances the therapeutic alliance, which is the foundation of any doctor-patient relationship.

No. 143

Racial/Ethnic Differences in Health Care Access Deficits Among Adults With Chronic Disease and Depression

Poster Presenter: Jeffrey Duong

Co-Author: Jaesu Han, M.D.

SUMMARY:

Background: Studies have shown that individuals with chronic disease and depression face significant barriers to care, yet less is known about racial/ethnic disparities in health care access among those with comorbid conditions. This study examines links between race/ethnicity and health care access deficits according to individuals' chronic disease and depression status. **Methods:** Data from the CDC's 2014 Behavioral Risk Factor Surveillance System (BRFSS), an annual cross-sectional survey of adults asked about their health status and behaviors, were analyzed. Bivariate cross-tabulations were used to compute the prevalence of health care access deficits (e.g., did not have a personal doctor, chose to forgo care when needed due to cost in the past year, and did not have an annual routine checkup) among different racial/ethnic groups across four health status strata (no chronic disease or depression, chronic disease only, depression only, or both). Multiple group analyses in Mplus were used to model links between individuals' race/ethnicity and health care access deficits and to determine whether health status moderated these associations. **Results:** Our sample of 464,664 adults was racially/ethnically diverse (21.6% non-White). Over half had been told they had chronic disease or depression (13.4% both, 38.3% chronic disease or 5.5% depression only). Health care access deficits were also common (15.3% no personal doctor, 10.6% forgone care and 25.4% no routine checkup). In multiple group analyses, associations between race/ethnicity and health care access deficits varied significantly by individuals' health status. For those never diagnosed with chronic disease or depression, the odds of not having a personal doctor compared to Whites were higher in American Indians/Alaskan Natives (OR=1.96; $p<0.001$), but lower in Blacks

(OR=0.75; $p<0.001$), yet Blacks were more likely to forgo care (OR=1.23; $p<0.001$), even if previously diagnosed with chronic disease or depression. Both American Indian/Alaskan Natives and Hispanics/Latinos were more likely to not have a personal doctor and forgo care, especially if they had prior diagnoses of both chronic disease and depression. Forgoing care was especially more likely among Hispanics/Latinos who only had a previous depression diagnosis (OR=1.26; $p=0.015$). Finally, Blacks and Hispanics/Latinos were less likely to miss routine checkups compared to Whites. **Conclusion:** This study revealed patterns of health care access in individuals across race/ethnicity groups with chronic disease and depression. Our findings suggest the need to connect Hispanics/Latinos and American Indians/Alaskan Natives to usual sources of care. Efforts to bolster means for Blacks and Hispanics/Latinos to access care also represent a priority. Providers may use annual checkups as potential opportunities to help these groups navigate barriers. The lead author conducted this study as part of the APA Medical Student Summer Mentoring Program.

No. 144

Sharing a Successful, Atypical Model for a Family Psychoeducation Group

Poster Presenter: Isuan Suzy Asikhia, M.D.

Co-Authors: Eileen Trigoboff, D.N.S., R.N., Josie L. Olympia, M.D.

SUMMARY:

Formats for family psychoeducation groups vary. One that has been successful, and durable, at a state psychiatric facility has been active monthly for over 15 years with characteristics described below. This model can be replicated by mental health providers to promote access to necessary information for family and friends of those with mental health issues. Family psychoeducation provides two important benefits—the family knowing more about their loved one’s mental health issue and the person who has the mental health issue benefitting from a knowledgeable and supportive family. Outcomes of family psychoeducation indicate a reduction in relapses/rehospitalizations, as well as an improvement to family well-being. Families select the topic in this open-to-the-community framework.

It is free of charge, does not require notification of attendance in advance, adheres to an all-inclusive definition of family, does not include the patient, and is co-led by two mental health professionals. Without patient participation, the service is not billable; however, the group contributes not only to better short-term outcomes but also long-term benefits in recovery. There is a long-term investment, as the literature supports. Awareness and advertising of the group’s existence is through local Mental Health Association listings in area resources, by word of mouth, and a Facebook posting of each month’s topic on the facility’s social media account. Psychopharmacology, therapeutic styles and goals (such as cognitive behavior therapy), how one contributes to another’s care and recovery, and maneuvering through the mental health provision system are examples of topics presented. Group features include 1) reliable leaders with adequate facilitation skills; 2) clear parameters for group members’ confidentiality; 3) adequate space for comfort and communication ease; 4) dependable schedule; 5) specifically for family and friends without the dampening effect of the individuals with mental health issues being present so members have freedom of expression without constraints; 6) topics determined by group members every month for the succeeding month; 7) use of community speakers and resources as requested; 8) timing is structured; and 9) open forums as topics from time to time respond to new members’ concerns. One of the consistently appreciated aspects of the family psychoeducation group is the access to professionals before, during and after group. Telephone and email contact is encouraged to answer basic questions about psychiatric and mental health issues while maintaining the clear separation between this as psychoeducation and the therapeutic relationship any member has with a provider of care. The ethical demands of keeping these roles distinct is reinforced often.

No. 145

Experiences of Korean-American Christian Pastors With Child Mental Health

Poster Presenter: Eun Kyung J. Lee

SUMMARY:

Background: Korean churches are the most

prominent community centers among Korean populations in the U.S., where Christians as well as non-Christians tend to gather for resources and social support beyond spiritual support. This study anonymously surveyed Korean-American pastors to identify how they recognize and respond to child and adolescent psychiatric symptoms in Korean churches. **Methods:** We obtained a multiregional, convenience sample of U.S. Korean youth pastors working in Korean churches. Surveys in both Korean and English were sent out anonymously. **Results:** Of the 492 pastors with functional email addresses, 110 responded—61 English speaking (ES) and 49 Korean speaking (KS). Of these 110 pastors, 76 completed the full survey—43 ES and 33 KS. Demographic information of ES versus KS pastors differed in that ES pastors were younger (88% under age 40 compared to 12% in KS), more likely to be American-born (42% versus 0% in KS), and more likely to work for a larger church and therefore have more children under 12 years old in the congregation (27% of ES worked for a church with over 500 members versus 9% of KS; 41% of ES reported having more than 50 children in their congregation versus 19% of KS). Both ES and KS reported seeing various psychiatric symptoms in their ministry, including excessive worry (54% ES; 47% KS), witnessed domestic violence (15% ES; 38% KS), inability to focus or pay attention (51% ES; 28% KS), excessive sadness (46% ES; 22% KS), and more. However, 43.2% of ES and 6.9% of KS pastors reported that they never refer, as well as 32.8% ES and 27.1% KS rarely refer, church member to a mental health professional, despite a high percentage of observed psychiatric symptoms. The most significant barriers to referral were expectation of shame and embarrassment associated with mental health services (73% ES; 59% KS), financial concerns (59% ES; 58% KS) and lack of available resources (46% ES; 41% KS). Also, 24% of ES and 10% of KS reported concern that the strength of their faith would be questioned by the congregation if a referral to mental health services is made. **Conclusion:** Although both ES and KS pastors find mental health professionals and the therapy used as useful, barriers such as 1) stigma and shame associated with public opinion of mental health and potential negative implications of their faith; 2) financial and language barriers; and 3) limited access to Korean and Christian mental health professionals

result in few referrals actually being made by the pastors. Future recommendations include further collaboration with Korean-American pastors and church communities to provide workshops to further educate, reduce stigma and promote utilization of mental health services.

No. 146

Quality of Life and Medication Adherence Among People Living With Severe and Persistent Mental Illness

Poster Presenter: Shreedhar Paudel, M.D., M.P.H.

Co-Authors: Rabin Dahal, M.D., Melinda Randall

SUMMARY:

Background: Psychotropic medications have been the mainstay of treating people with severe psychiatric illnesses, including schizophrenia and schizoaffective disorder, but it is not clear if medication adherence will lead to better quality of life among people living with severe and persistent mental illnesses. This study measures quality of life of the people with severe and persistent mental illness and explores its association with medication adherence. **Methods:** Out of 78 people enrolled in community-based flexible supports (CBFS) services who had capacity to provide consent, 45 people participated in our study. The Personal Evaluation for Transition in Treatment (PETIT) questionnaire was used to evaluate quality of life, and the Medication Adherence Rating Scale (MARS) was used for evaluating medication adherence. Electronic medical records were reviewed for basic demographic features, diagnosis and currently prescribed antipsychotic medications. Cronbach's alpha was used as a measure of internal consistency, and Pearson's correlation coefficient was used to analyze the correlation between medication adherence and quality of life. The study was approved by the institutional review board of Berkshire Medical Center. **Results:** The average age of the study participants was 54, and 60% of them were female. The most common primary psychiatric diagnosis was chronic psychosis (71.11%), and 33.33% of them carried the diagnosis of posttraumatic stress disorder. Most of the people (86.66%) in the study were on at least one antipsychotic medication, and 28.88% of them were on two antipsychotic medications. Average

adherence score was 7.6 (SD=1.98). Interestingly, most believed that medication will help them think clearly (80%) and prevent them from getting sick (82.2%), but adherence behaviors were found to be low (18.3%). Average PETiT score for our study population was 37 (SD=9.38). The Pearson's correlation coefficient between average score on quality of life and average score on medication adherence (r) was 0.22 ($p>0.05$). While looking at individual questions on PETiT questionnaire, we found significant but weak to moderate correlation between quality of life (14 out of 30 PETiT questions) and medication adherence. We found good internal consistency while responding to questions by our study participants (Cronbach's $\alpha=0.7$).

Conclusion: Our study found weak but statistically significant correlation between certain aspects of quality of life and medication adherence, but there was no significant correlation between average quality of life and average medication adherence. Even though people with severe and persistent mental illness might have a good attitude about their medications, that might not translate into medication adherence. The reason for low adherence behavior might be because of side effects of the medications. Prospective and randomized trials might be able to validate our findings.

No. 147

Perceived Disability and Its Correlates Among Inpatient Population at an Academic County Psychiatric Hospital

Poster Presenter: Jigar K. Chotalia, M.D., M.P.H.

Co-Authors: Ajay K. Parsaik, M.D., M.S., Noha

AbdelGawad, Teresa Pigott, M.D.

SUMMARY:

Background: Psychiatric illnesses significantly impact quality of life due to disabilities associated with them. Higher levels of perceived disability are also associated with worse outcomes and longer hospital stays in inpatient populations with mental illness. We performed a detailed analysis between perceived disability measured through the Sheehan Disability Scale (SDS) and a variety of mental health characteristics and outcomes, including length of stay (LOS), in our population. **Methods:** The research population consists of adult subjects admitted to an academic psychiatric hospital in Houston, Texas,

between July 1 and December 31, 2014. They completed the SDS and Clinician-Rated Dimensions of Psychosis Symptom Severity Scale. The SDS is a brief self-reported tool reported on 10 points visual analog score measuring impairment in three areas, including work/school life, social life and family life. The scores are reported as mild (<3), moderate (4–6), marked (7–9), and extreme (10). It is recommended that scores 5 or greater correlate with a significant level of functional impairment. We added all three area scores and divided populations in two categories: mild/moderate function impairment (<21) and marked to extreme levels of functional impairment (≥ 21). Univariate analysis was conducted to evaluate the distribution of variables, and bivariate analysis through t-test and chi-square was conducted to assess associations. Regression model adjusted for multiple comparisons was used to examine the association between SDS score and LOS. **Results:** 174 patients (54% bipolar disorder, 23% depressive disorder, 13% schizoaffective disorder, five percent substance-induced mood disorder, and four percent primary psychotic disorder) were included, of which 53% were male and the mean age was 35 ± 11.6 years. 106 subjects (63.1%) reported at least one substance abuse disorder, while 22.2% had three substance abuse disorders. The mean total SDS score was 16.3 ± 9.4 . Most patients reported moderate levels of disability in their daily functioning in all three areas, including work/school (4.9 ± 3.4), social life (5.3 ± 3.3), and family life (5.4 ± 3.4). In the multivariate models predicting correlates of perceived disability, we found gender ($\beta=-3.05$, $SE=1.41$, $p=0.03$) and race ($\beta=1.8$, $SE=0.87$, $p=0.04$) were significant correlates of higher scores on the SDS. After adjusting for age, gender, previous hospitalization, substance use, psychosis severity, readmission within 30 days, and history of childhood trauma, we did not find any significant association between perceived disability and length of inpatient stay. **Conclusion:** The SDS is a self-reported tool for perceived disability due to any ailments. Although we did not find any significant correlation between length of inpatient stay and perceived disability, we found some important predictors like gender, race, and psychosis severity.

No. 148

Pica Prevalence in a West Virginian Dialysis

Population

Poster Presenter: Rebecca Creel

SUMMARY:

Pica, or the eating of non-food substances, has a recognized association with certain medical disorders, including end-stage renal disease (ESRD) requiring dialysis. Such patients have described obsessive-compulsive disorder (OCD)-like urges for ingestion of particular substances or textures. There may also be cultural influences to the behavior. ESRD requiring dialysis causes not only significant lifestyle changes and psychological stressors, but physical changes, given the inability of the body to excrete substances through the kidneys. Ice chips, chalk, dirt, clay, and rubber have been well documented as recurring target substances. Patients often hide their behavior, which can lead to difficulties in diagnosing pica in such cases. Studies examining the prevalence of pica in dialysis patients have findings ranging from 10 to 38.3%. While earlier studies have not always use structured interviews or reported demographic and laboratory data fully, a newer study by Stillman and Gonzalez did use a structured script and questionnaire in dialysis patients and a non-dialysis control group to normalize pica behavior for more honest reporting. The focus of their study was to not only examine pica in dialysis patients in correlation with certain demographic information and laboratory values, but to also demonstrate pagophagia, or the compulsive consumption of ice or iced drinks, as the most common form of pica reported. The prevalence of pica has not been examined in rural populations, including an Appalachian population. Also, despite possible theories regarding a link to psychiatric issues, there has been no study examining specific psychiatric symptoms or diagnoses in relation to pica in dialysis populations. In this study, we examined 120 patients at a rural Appalachian outpatient dialysis center for the presence of pica. Prevalence of pica was determined using a normalizing script and structured interview to assess. Demographic and clinical variables were also assessed. In addition, we examined possible associated psychiatric symptoms by using a cognitive screen (the Folstein MMSE), a screen for depression that is valid in medically ill populations (the Geriatric Depression Scale), and a screen for obsessive-compulsive disorder (the

Florida Obsessive-Compulsive Inventory [FOCI]). Finally, patients' lab work, including BMP, CBC with differential and TSH, was also obtained via chart review. Data were analyzed by SPSS for analysis of the hypotheses. Results and future directions are discussed.

No. 149

Bringing Care to New Moms: Collaboration Between Pediatrics and Psychiatry for the Evaluation and Treatment of Postpartum Depression

Poster Presenter: Claire Selinger

Co-Authors: Katherine Williams, Baraka Floyd

SUMMARY:

Background: Postpartum depression has a prevalence of at least 10% and approaches 25% or higher in women with a history of a mood disorder. Exposure to maternal depression is associated with multiple adverse effects on developing children, and the estimated annual financial cost of untreated maternal depression in the U.S. is \$5.7 billion per year. The American Academy of Pediatrics (AAP) and the American Obstetrics and Gynecology Association (ACOG) recommend universal screening for postpartum depression in new mothers. **Objective:** Evaluate the feasibility of implementing universal screening for postpartum depression using the Edinburgh Postnatal Depression Scale (EPDS) in a community pediatric clinic. **Methods:** All women whose children are receiving care at the Gardner Packard Children's Health Center will complete the EPDS as part of their routine clinic visit at their baby's newborn, two-, four-, and six-month checkups. Women who score higher than 12 on the EPDS will be referred to the Stanford psychiatry resident for further evaluation and potential treatment of postpartum depression within the pediatric clinic or to the appropriate county resources. We will utilize qualitative questionnaires to assess reasons for not accepting referrals when indicated. **Discussion:** This small scholarly project's goal of assessing the feasibility of universal screening at a community clinic, clarifying the prevalence of postpartum depression at this site and the success of implementing "embedded" psychiatric care for new moms, will be significant. Determining barriers to receiving appropriate care will likely lead to project

quality improvement and thus increase the number of completed referrals. This project will contribute to clinical innovation and community service by enabling the Women's Wellness Clinic to expand its postpartum psychiatric evaluation and treatment service to a community setting. This project will foster the advancement of science by providing important data that will contribute to the understanding of risk factors for postpartum depression, the effectiveness of screening and "embedded" psychiatric treatment programs.

No. 150

The Complicated Conversion: Diagnosis and Management of Prolonged Conversion Disorder With Multiple Deficits

Poster Presenter: Clare Bajamundi

SUMMARY:

A 33-year-old male with no previous psychiatric history first presented in January 2015 from a local prison. After an assault in this prison, the patient was refusing to eat, refusing to speak, and refusing to interact with jail staff or follow commands. He was also noted to have significant ataxia and was unable to walk or stand unassisted. He had no prior history of these deficits. He was admitted with a preliminary diagnosis of "unspecified psychosis, rule out schizophrenia with catatonic features." Head CT was performed, which showed no intracranial abnormality. Throughout admission, he would not respond to auditory stimuli and refused to speak. However, he was noted to have improvements in ability to take care of his own hygiene and began to eat. The patient was also able to make "groaning" and "grunting" noises and was noted to have better mobility when not being observed. Diagnosis was changed to "malingering," and he was returned to jail. However, symptoms worsened in jail, so the patient was re-admitted in February and again in July of the same year. The patient has been under psychiatric care since this time. Numerous exams and procedures were performed to determine the etiology of his symptoms, including multiple MRIs, EEG, neuropsychological testing, and audiometry with ABR. Throughout this time period, the patient remained mute and deaf. He additionally demonstrated echopraxia and echographia. Ataxic gait persisted, and the patient could only ambulate

with assistance of a walker. Diagnostic studies could not be correlated to any specific neurological disorder, so diagnoses of conversion motor paralysis, deafness and aphonia were made. This patient participated in weekly physical therapy sessions and showed great improvements in gait. He has since learned to walk without assistance of a walker. The patient learned American Sign Language to communicate and began to participate in speech therapy. He is able to understand written sentences and no longer demonstrates echographia, so he can write simple responses to questions. However, the patient still has significant speech and hearing deficits. He is still actively participating in speech and physical therapy. Resolution of deficits is occurring, but complete remission remains to be seen. This case highlights complexities in diagnosis and treatment of conversion disorder. The varied symptoms with no apparent physiological basis often confound the diagnostic picture, particularly when there are multiple deficits. As this case shows, symptoms do not always spontaneously regress, which can further complicate diagnosis and treatment. Deficits are reversible, and active participation in continuous therapy can make gradual improvements in symptoms.

No. 151

Efficacy of Cognitive Behavior Therapy Delivered Over the Internet for Depressive Symptoms

Poster Presenter: Charles Koransky, M.D.

Co-Authors: Leah Fegan, Dina M. Sztein, M.D., M.P.H.

SUMMARY:

Background: Cognitive behavior therapy (CBT) has been shown to improve depressive symptoms in adults with mild to moderate depression. To overcome many of the barriers associated with delivering this treatment, attempts have been made to deliver CBT via the Internet (iCBT). **Objective:** Assess whether iCBT delivered to adults with depressive symptoms leads to a reduction in these symptoms, compared to those who receive no therapy. **Methods:** In September 2015, the Cochrane, PubMed and PsycINFO databases were searched. Studies were also found through bibliography searches. Studies were included if they were randomized controlled trials published in

English between 2005 and 2015 conducted with adults over 18 years old with mild to moderate depression where study subjects received iCBT and the control group was placed on a waitlist. The search yielded 257 articles, and 14 of these were included in the meta-analysis. Three researchers independently examined each study and extracted data, as well as assessed risk bias, validity and quality. **Results:** Internet-delivered CBT had a medium effect on reducing depressive symptoms at the end of the study period (SMD: 0.74, 95% Confidence Interval [CI] [0.63, 0.86], $p < 0.001$). Internet-delivered CBT also has a large sustained effect in maintaining reduction of depressive symptoms in follow-up measures done three to six months after the conclusion of the therapy (SMD: 0.85, 95% CI [0.71, 0.99], $p < 0.001$). There was no statistically significant difference between improvements in depressive symptoms in studies where clinicians participated in the iCBT program and those without clinician assistance. There was no publication bias and low heterogeneity. **Conclusion:** CBT delivered over the Internet leads to immediate and sustained reduction in depressive symptoms; thus, it may be a good treatment modality for individuals unable to access traditional face-to-face therapy.

No. 152

Harnessing Technology in Addressing Cannabis Use Disorders in Youth: A Systematic Review

Poster Presenter: Kammarauche Asuzu, M.H.S.

Co-Authors: Asna Matin, M.D., Megan Van Noord, M.S., B.A., Edore Onigu-Otite, M.D.

SUMMARY:

Background: Cannabis is the most commonly used illicit substance in adolescents. Cannabis use in adolescence has been found to be associated with cognitive changes, psychosis, depression, anxiety, and multiple psychosocial problems. Although there are evidence-based treatments for substance use disorders, barriers to care limit access to these treatments. Technology has been shown to decrease barriers to care. This study is a systematic review evaluating the efficacy of technology-based interventions in reducing cannabis use in adolescents and emerging adults. **Methods:** Through major databases PubMed, Cochrane, EMBASE,

PsycINFO, and Web of Science and using relevant keywords, articles on technological interventions for substance use disorders published before July 2016 were searched. An article was included if it was a randomized trial and if the purpose was to evaluate a technology-based (Internet, mobile, CD-ROM) intervention in reducing cannabis use and substance use behaviors in adolescents and/or emerging adults. Articles were reliably selected, and two authors reviewed all selected articles for data extraction. **Results:** The initial search resulted in 1,749 articles after excluding duplicates. Titles and abstracts were reviewed, and 50 articles were selected for full article review. Fourteen articles were included for systematic review following full article review based on inclusion criteria. Quality of studies ranged from 2 to 5 on the Jadad scale. Articles varied in the type of intervention and target population. Use of technology ranged from web-based sessions to CD-ROMs. There was a wide range of variability in the intervention type, making comparison challenging. Interventions in most studies were also directed at other substances. Studies were feasible and mostly accepted in the adolescent population. **Conclusion:** Technology-based interventions are a useful care delivery option in the adolescent population. This review revealed mixed results on the effectiveness of technology-based interventions in reducing and/or preventing cannabis use and related addictive behaviors in adolescents and emerging adults. Technology-based interventions increase access to care, and interventions can be delivered at the participant's discretion. More research is needed to identify and develop specific aspects of this modality, which influences change within adolescents and emerging adults with regard to cannabis use.

No. 153

Improvement of Catatonia After Cardiac Arrest Resuscitation

Poster Presenter: Marissa Flaherty, M.D.

Co-Author: Michael S. Peroski, D.O.

SUMMARY:

A 69-year-old female with bipolar disorder with psychotic features was directly admitted to geriatric psychiatry from her nursing home for electroconvulsive treatment of her catatonia. Her

hospital course was complicated by transfer to a primary medical service for hypertensive urgency, delirium, no PO intake resulting in malnutrition requiring placement of a feeding tube, aspiration pneumonia, and cardiac arrest. Throughout her prolonged hospital course, consultation-liaison psychiatry monitored the progression of her catatonia and continued her on medications. After the patient's cardiac arrest, she was noted to have improvement in her catatonia for the first time since admission. This raised the question of the etiology of the improvement without the change in medications. ECT is a well-established treatment (along with medical supplementation) for catatonia. The patient above had a very similar reaction to a cardiac arrest, bringing to light the question of the mechanism of action that hyperperfusion (via medications and compressions) to the brain has on catatonia. Studies have shown that during ECT treatments and generalized seizures, there often is increased cerebral blood flow to the brain. It has been hypothesized that the increased cerebral blood flow to the anterior cingulate, medial frontal cortex and thalamus are responsible for resolution of depressive symptoms. There is less research regarding the effect that the changes in blood flow have on symptoms of catatonia. This case serves as a platform for discussion and future directions for treatment of refractory catatonia.

No. 154

Combined Antipsychotics and Electroconvulsive Therapy in an Acutely Psychotic Patient With Treatment-Resistant Schizophrenia

Poster Presenter: Ruth S. Rayikanti

Co-Authors: Iga Lentowicz, Badari Birur, M.D., Li Li, M.D., Ph.D.

SUMMARY:

Antipsychotics (AP) are the first line for treatment of schizophrenia but do not alleviate symptoms in 10 to 30% patients who fit criteria for treatment-resistant schizophrenia (TRS). The criteria for TRS differ significantly in literature. We defined these criteria as little or no symptomatic response to at least two AP trials for at least six weeks in therapeutic dosages. Clozapine (Clz) is recognized as the most effective AP medication for TRS, but as many as 40 to 70% of patients remain resistant to this drug as

well. Treatment of this subgroup is challenging. Several alternative treatment strategies are reported in studies, one of which includes augmenting Clz with electroconvulsive therapy (ECT). We present a case report of a 38-year-old female with TRS with no significant past medical history who responded effectively to this combined strategy. This patient was under the care of an assertive community treatment team and had failed multiple APs, including two Clz trials due to agranulocytosis. After Clz was discontinued, she quickly decompensated and presented to a local emergency room (ER) with prominent negative symptoms, as reflected by her scores on the Positive and Negative Syndrome Scale (PANSS) of 135/210 and the St. Louis University Mental Status Exam (SLUMS) of 3/30. After medical clearance from the ER, she was admitted voluntarily to an inpatient psychiatric unit. Given her clinical presentation, lack of capacity and urgent necessity to alleviate symptoms, intervention with ECT was done after obtaining consent from the patient's mother. Unilateral ECT was chosen due to the patient's cognitive impairments. Over her nine-day hospital course, she received five right unilateral ECT sessions as adjunct to Clz, which was slowly titrated up from 25mg per day to 62.5mg per day, along with aripiprazole 10mg twice a day. No significant adverse effects were noted, with a notable clinical improvement in this short time period of nine days. Given her stability, the patient refused further ECT treatments after five sessions. Clz titration was continued up to a total of 200mg per day, until her absolute neutrophil count decreased below 1,500, warranting its cessation. Significant improvement was noted in PANSS, with a 44% decrease in total scores and a SLUMS score of 22 with just five ECT sessions. Months later, she agreed to monthly maintenance ECT (14 total) while on olanzapine and lithium. Our case indicates that a trial of Clz augmented with ECT may be safe and effective in management of acute psychosis in TRS patients. If tolerated without significant adverse effects, maintenance ECT with antipsychotics may result in remission of positive and negative symptoms, allowing greater functional and social stability in this difficult to treat subgroup.

No. 155

Prolonged Unresponsiveness After ECT: A Case of

Suspected Nonconvulsive Status Epilepticus

Poster Presenter: Awais Aftab, M.D.

Co-Author: Keming Gao, M.D., Ph.D.

SUMMARY:

Status epilepticus is a rare complication of electroconvulsive therapy (ECT), and nonconvulsive status epilepticus (NCSE) is rarer still. Over the last three decades, only about a dozen cases have been reported. NCSE is defined as ongoing or intermittent seizure activity without convulsions for at least 5–10 minutes, without recovery of consciousness between attacks. A diagnosis of NCSE is difficult and is often clinically missed. The primary manifestation of NCSE is altered mental status. The gold standard for diagnosis is the presence of electrographic seizure activity. In this poster, we describe a case of ECT-related NCSE. Ms. C. was a 38-year-old Caucasian female without prior seizure disorder presenting with bipolar I depression along with generalized anxiety disorder. She had failed multiple mood stabilizers, antipsychotics and antidepressants. She started with an acute ECT series with 10 treatments followed by nine weekly to biweekly maintenance ECT (mECT) sessions. She had a second acute series with three right unilateral treatments followed by weekly mECT treatments. She tolerated these sessions well without complications or prolonged seizure activity. Her seizure duration gradually shortened. After maximizing the settings, aminophylline 200mg by IV was added along with hyperventilation. In her ninth weekly mECT session, no motor seizure was observed, although the EEG seizure was 35s. At the tenth weekly mECT, aminophylline was increased to 400mg by IV, and there was a motor seizure of 32s and EEG seizure of 57s. Following that session, she was vitally stable but unresponsive, even to painful stimuli. Lorazepam 2mg and naloxone 4mg were administered by IV, but she was still unresponsive. Medical consultant suspected status epilepticus and levetiracetam 1000mg was given by IV. She was transferred to the ICU. A stat CT head was unremarkable. She was not maintaining her airway, and her jaws were clenched hard. Facial fasciculations were also noted. Midazolam 2mg was given to allow for intubation, and she was sedated via propofol. Arterial blood gas drawn prior to intubation showed respiratory acidosis. Lab work

was noticeable for leukocytosis (18.4) without left shift. Electrolytes, liver function and renal function were within normal limits. Lithium level was nontoxic (0.65). Urinalysis and blood cultures were negative. Her psychotropics (lithium 600mg daily and Invega Sustenna 234mg intramuscularly monthly) had been unchanged for months. Neurology attending suspected that the patient had experienced status epilepticus secondary to ECT. Levetiracetam 1,000mg twice daily was continued. EEG was conducted several hours after the patient had been sedated with propofol, as urgent EEG in that hospital setting was not available; it showed severe diffuse encephalopathy without any epileptiform discharges or lateralizing signs. She was successfully taken off ventilator the next day. She remained stable for 24 hours and was discharged home. ECT was subsequently not resumed.

No. 156

Electroconvulsive Therapy as a Treatment for Elderly Psychiatric Patients: Reviewing Outcomes

Poster Presenter: Jessica S. Bayner, M.D.

Co-Authors: Muhammad W. Khan, Anni Al-Najjar, M.D., Adel Nesheiwat, Asghar Hossain

SUMMARY:

Background: Electroconvulsive therapy (ECT) is a biological treatment that uses a transitory electric stimulus to produce a generalized seizure. It is one of the most active biological methods for many resistant and severe psychiatric illnesses. Additionally, ECT is often used for elderly patients suffering from major depressive disorder with or without psychotic features, as well as bipolar disorder, and is renowned as one of the most successful treatments for catatonic schizophrenia. However, side effects must be considered when evaluating whether to use ECT for such patients. **Objective:** Our goal is to study the outcomes of ECT in elderly patients treated for depression and/or psychosis and to observe the effects on their cognitive functioning. **Methods:** ECT was performed on multiple geriatric patients undergoing treatment in a psychiatric hospital in Bergen County, NJ. Participants were administered the Mini Mental Status Exam (MMSE), Hamilton Depression Rating Scale (HAM-D) and Brief Psychotic Rating Scale (BPRS) before and after treatment in order to

monitor any changes in symptoms and cognition. A literature search via PubMed and Google Scholar was also conducted using search terms that included “electroconvulsive elderly outcomes,” “electroconvulsive geriatric outcomes,” “ECT and elderly outcomes,” “ECT elderly cognition,” and “ECT BPRS.” **Discussion:** There has been much research done in order to establish the relationship between electroconvulsive therapy and its efficacy. This include studies pertaining to ECT done with elderly patients suffering from depressive disorders as well as intractable catatonic-type schizophrenia. It has been observed that the geriatric population benefits from ECT more than the non-geriatric population, with a subsequent lower rate of psychiatric rehospitalization. ECT has proven to be successful and well tolerated in the elderly, with limited cognitive sequelae. This study monitored a series of elderly patients who were hospitalized in Bergen County, NJ, and were treated with ECT for severe mood and psychotic symptoms. The MMSE, HAM-D and BPRS were used to record cognitive function before and after ECT was performed. Outcomes of the study revealed little to no changes in cognition and vast improvements with regard to the various psychiatric symptoms of the participants.

Conclusion: Electroconvulsive therapy is an effective and relatively safe modality of treatment for elderly patients with psychiatric disorders. This especially applies to those presenting with depression and psychotic features. The outcomes and adverse events have been noted, but the benefits of ECT appear to outweigh the risks, as evidenced by overall improvement in MMSE, BPRS and HAM-D scores of the participants in the given study. Still, further evaluation and research are warranted in order to have a more definitive understanding of ECT on a broader scale.

No. 157

End-of-Life Care Preferences in Patients With Severe and Persistent Mental Illness and Chronic Physical Health Conditions: Project Presentation

Poster Presenter: Dominique Elie

Co-Authors: Soham Rej, Amanda Marino, Karl Looper, Marilyn Segal, Saeid Noohi

SUMMARY:

Background: Patients with severe and persistent

mental illness (SPMI) often present with poorer physical health and increased mortality compared to the general population. As severe or terminal illnesses are frequently associated with a destabilization or exacerbation of psychiatric symptoms, it may be difficult for SPMI patients to effectively communicate their end-of-life care preferences with the treating team. In light of the new Quebec end-of-life care legislation, we want to compare SPMI and chronic medically ill patients’ end-of-life care preferences and interests in participating to an advance medical directives regime. **Methods:** A total of 100–200 capable individuals aged 40 years or above diagnosed with either an SPMI (schizophrenia, schizoaffective disorder, severe depression) or cardiometabolic diseases for at least two years will be recruited over a four-month period at the Jewish General Hospital, Montreal, Canada. Patients’ attitudes toward advance medical planning and end-of-life care preferences regarding artificial life support, pain management and terminal palliative sedation will be collected through a semi-structured interview using the Health Care Preferences Questionnaire (modified). Chi-square, t-tests and multivariate regression analyses will be performed to detect statistical differences between the two study groups (SPMI vs. medically ill). **Hypothesis:** We expect SPMI and chronic medically ill patients to have similar end-of-life care preferences. We also expect older SPMI and chronic medically ill patients to show more interests in advance medical planning. **Conclusion:** We hope this study will encourage clinicians to discuss advance medical planning with vulnerable populations, such as older SPMI patients.

No. 158

Breaking Bad News: A Side of Medicine That Is Not Easy

Poster Presenter: Sahil Munjal, M.D.

SUMMARY:

In our field, we infrequently have to encounter life-threatening diagnoses. Even more infrequently, we have to break the bad news to the patient and their family members. I present a case of a 59-year-old male who was initially admitted in the inpatient unit with depressive symptoms who was eventually diagnosed with an aggressive glioblastoma

multiforme. Through this case, I will discuss the difficulty faced by residents/medical students in breaking bad news and how this topic has been neglected in medical school. I will also review the literature on effectively breaking bad news along with my own experiences while dealing with this case. Through this case, I have learned, even in the toughest of situations, breaking bad news in an empathetic way along with being involved in the struggle of loved ones can make a difference in their suffering. Discussion should be in a place with some privacy, away from distractions, using simple language to discuss all the facts that are known or unknown and giving the caregiver space to understand the information. As we can never fully understand what the caregiver is going through, the best approach is to validate and support their emotions. In these situations, moving closer to the caregiver or even maintaining physical contact like putting a hand on their shoulder is appropriate, as it facilitates a sense of comfort for the caregiver. Being there for the patient and their family, understanding what they are going through, and making us available for questions to mitigate their uncertainty helps them in their ability to process the situation.

No. 159

Putting Baby in the Corner: Paraphilic Infantilism in an Inpatient Setting

Poster Presenter: Seth Lopic, D.O.

Co-Author: Timothy Malone, M.D.

SUMMARY:

Mr. W., a 17-year-old Caucasian male with a past psychiatric history of other specified depressive disorder and ADHD, presented to the emergency department for suicidal ideation with a plan. The patient had a number of recent social stressors, which had led to his admission and suicidal ideation. He was admitted to the inpatient psychiatric service. While taking the patient's history, he identified himself as "AB/DL" or "adult baby/diaper lover." The patient discussed how autonepiophilia, or diaper fetish, as well as paraphilic infantilism, the self-image of a baby, had become a significant part of his day-to-day life. He stated that it began at the age of 12 with urophilia, or sexual pleasure with urination. Over time, this pleasure evolved and included other aspects, such as coprophilia, or pleasure with

defecation. Eventually, this led to the patient's current searching for a partner who would role play as a parental figure and provide for the patient in similar ways that a parent would provide for a baby. While research on these fetishes is limited, there have been studies conducted from Internet communities. It has been estimated that less than one percent of fetishes are diaper fetishes. Because of the rarity of similar presentations, further knowledge about these areas is important to not only build rapport with patients, but also to allow the treating physician to be cognizant of other possible related factors, such as trauma. This allows for a better treatment plan going forward, should the patient decide to take the step in treating these paraphilias.

Medical Student/Resident Poster Competition 2

No. 1

Neuropsychiatric Manifestation of 5HTR2C Gene Deletion in Children

Poster Presenter: Shajuddin F. Mohammed

Co-Author: Alexander C. L. Lerman, M.D.

SUMMARY:

The patient is a six-year-old African-American male with past history of seizure disorder who presented to the psychiatry ER for evaluation after displaying aggressive and homicidal behavior at home. As per his mother, the patient was behaving normally at his therapist's office the same day, but after returning home, he started acting out and became aggressive when limits were set. He pulled out a kitchen knife and tried to hurt his mother. She was able to grab it and sent him to his room. The patient went to his room, hid in a closet for some time, and came out angry and tried to attack his grandmother with a knife. His mother contacted the therapist, and the patient was brought to the psychiatry ER for evaluation, finding no co-occurring depression, mania, anxiety, nightmares, or flashbacks; no history of physical or sexual abuse; and no recent change in sleep/appetite/energy or concentration. The patient was admitted twice to the hospital in the past for self-injurious behavior. He was first admitted to a psychiatric hospital at age four for biting, screaming, kicking, aggression, hitting his head against the wall, and trying to cut himself. The patient also

complained of visual hallucinations and unsteady gait periodically. The patient was scratching his arms, as he was seeing spiders, and was paranoid that someone was trying to kill himself and would hide under the table and cry. The patient could not see his mother even though she would be standing next to him. He was initially on escitalopram/aripiprazole and risperidone, but was later switched to escitalopram/quetiapine and VPA. Visual hallucinations were well controlled on VPA. The patient was an NSVD born at 42 weeks pregnancy. During delivery, his mother had some unreported uterine infection, and the baby and mother had fever immediately following delivery. Mom and baby were treated with antibiotics, and the baby spent some time in the NICU and was eventually discharged home healthy. The patient was asymptomatic until one and half years old, when he had his first episode of seizure. The patient had eye rolling movements associated with spasms, and he had around 100 such episodes in a day. The patient was in the hospital for one and a half months and was diagnosed with infantile spasms. The patient was started on ACTH for two months, but continued to have seizures, so ACTH was switched to gabapentin, and his seizures were controlled. After three to four months, his medications were stopped, as he was seizure free. For the next year, the patient was not on any medications. At the age of 2.5, the patient started having multiple unknown infections, which would cause febrile seizures, and phenobarbital was started. The patient continued to have on and off seizures, but less frequently. Phenobarbital was slowly weaned off, and the patient remained seizure free until age four, when he started hallucinating and was paranoid.

No. 2

Adolescent Grief and Transvestism (Crossdressing): A Case Report and Literature Review

Poster Presenter: Muhammad Zeshan, M.D.

Co-Authors: Juan A. Rivolta, M.D., Luisa Gonzalez, M.D., Raminder Pal Cheema, M.D., Panagiota Korenis, M.D., Amina Hanif, M.D.

SUMMARY:

Background: One in nine American adolescents loses a parent before the age of 20. While the death of a parent may be stressful for anyone at any age,

reviewed literature suggests that such a loss during adolescence can have a profound impact on the subsequent life course of the individual. The intensity of the emotional response to parental death varies according to many factors, including the importance attributed to the loss, circumstances of the death, degree of attachment, nature of current and past affiliation with parents, relationship ambivalence, and time of death. If the death occurs at a decisive time in the adolescent's life, such as a birthday or a holiday, dealing and coping with the loss can be even more difficult. Adolescent grief can be as unique as a fingerprint, and it can include acting out behaviors, social isolation, poor school performance, anxiety disorders, and depression. Current studies suggest that many adolescents respond to the death of a parent primarily with depressive symptoms and substance use. While rare, it has also been reported that a few may adopt crossdressing (transvestism) in response to the loss of an overtly rejecting mother. It is hypothesized that the use of maternal garments may act as a fantasized protector that reverses the loss when an adolescent feels depressed. **Case:** In this poster, we present the case of a bisexual male patient who was abandoned by his mother during his early childhood and who began crossdressing after her sudden death on New Year's Eve. He was rejected by his peers and family due to his feminine appearance. Upon evaluation, he expressed hopelessness and emptiness and coped with his symptoms by smoking marijuana. While he was on the inpatient unit, the treatment team explored the manifestation of his unresolved grief—particularly his depressive symptoms, substance use and transvestism.

Conclusion: Adolescent grief is an area of continuing interest and research. Parental death before adulthood has a tremendous impact on the life course of the individual. The loss affects an adult's personality development, the person's sense of security and their relationships with surviving relatives. We use this case to understand the course of grief in children and adolescents and emphasize the nuanced manner in which grief can present in this challenging population.

No. 3

Are Children With Corpus Callosum Agenesis at a Higher Risk for Developing ADHD: A Case Report

Poster Presenter: Rasha Elkady, M.D.

Co-Author: Balkozar Adam, M.D.

SUMMARY:

Background: Corpus callosum is the flat neuronal bundle that transfers information between the two cerebral hemispheres. Agenesis of corpus callosum (ACC) is a rare disorder that occurs in 1 in 4,000 in the general population. It happens when the axons making the neuronal bundle do not cross the midline of the brain. Inheritance is autosomal recessive or X-linked dominant and can also be acquired by maternal infection during pregnancy and fetal alcohol syndrome. ACC is usually diagnosed by occurrence of seizures in the first few years of life and can also present as developmental delays, hydrocephalus, non-progressive ID, impairment in eye/hand coordination, and visual or auditory processing. In mild cases, it may be asymptomatic or even discovered incidentally on an MRI scan. Treatment is usually symptomatic. Physical and cognitive symptoms of ACC have been established. Psychiatric comorbidities are not well investigated. This is a case report of a male with ACC and comorbid ADHD. **Case:** Our patient is a 14-year-old Caucasian male with a diagnosis of ACC. The patient was diagnosed when he was three years old following a seizure episode. He had emotional lability, difficulties processing tasks bilaterally and difficulties with abstract thinking. He was also diagnosed with ADHD, which was well managed by medication and psychotherapeutic interventions that allowed him to be academically successful. **Discussion:** In general, individuals with ACC have normal or above normal IQ. Lynn et al. performed a longitudinal study on 17 children diagnosed with ACC in the prenatal period, and nearly all of them had behavior problems. Review of literature revealed a consistent pattern of cognitive and developmental deficits. These patients were unable to effectively plan and execute daily activities such as showering, homework and paying bills; they had impoverished, superficial relationships and interpersonal conflicts at work and home due to misinterpretation of social cues. Rogers Sperry commented on deficits in cognitive processing time, arithmetic, abstract reasoning, short-term memory, and alexithymia in patients who had undergone commissurotomy (surgical removal of corpus

callosum for treatment of intractable seizures). It is clear that some of the deficits listed above overlap with diagnostic criteria of ADHD. Studies showed altered morphology of corpus callosum in ADHD. Morphometric analysis of MRI scan revealed that, compared to non-disabled children, children with ADHD had smaller corpus callosum, particularly in the region of the genu, the splenium and the area anterior to the splenium. George et al. compared MRI brain scans in seven children with ADHD to MRI scans of 10 control children and found evidence that supports a significant difference in corpus callosum of children with ADHD. **Conclusion:** This case report proposes the presence of a link between ACC and ADHD based on brain morphology and clinical presentation.

No. 4

Prader-Willi Syndrome—“Challenges in Treating Eating Behaviors”: A Case Study and Literature Review

Poster Presenter: Nidhi Shree Karingula, M.D., M.P.H.

Co-Author: Shilpika R. Varma, M.D., M.B.B.S.

SUMMARY:

Background: Prader-Willi syndrome (PWS) is a complex neurodevelopmental and rare multisystem genetic syndrome with an estimated one in 50,000 population prevalence. It leads to an array of early disabilities including early onset poor feeding and lack of appetite in infancy, followed by lack of satiety with uninhibited appetite after age two. **Objective:** Our case highlights challenges in addressing early onset childhood morbid obesity. Children with PWS greatly benefit from early diagnosis, allowing for implementation of multidimensional therapeutic interventions. Medications along with lifestyle changes are vital in the management of obesity and accompanying metabolic issues that ultimately affect quality of life, leading to higher morbidity and mortality left untreated. **Case:** Patient is an 11-year-old African-American male in sixth grade domiciled with his foster mother. He has a psychiatric history of developmental delay, attention deficit/hyperactivity disorder and obsessive-compulsive disorder managed on aripiprazole and methylphenidate ER with multiple psychiatric hospitalizations. With a medical history of morbid obesity (body mass Index over 90%), sleep apnea

and asthma, the patient was last admitted in November 2015 for psychiatric stabilization by school referral for hyperactive/impulsive and aggressive behaviors. While on the unit, the patient was preoccupied with eating and vocalized obsessive thoughts of obtaining food. Staff reported that despite eating three meals daily, the patient was requesting extra meals and snacks and was observed hoarding food. Medications moderately managed his hyperactivity with no effect on suppressing his appetite or compulsive eating. PWS was never confirmed, as genetic testing was recommended but declined due to cost. However, based on patient symptom profile and dysmorphic features, a high clinical suspicion remains. **Discussion:** Functional MRI (fMRI) studies showed increased activation in the hypothalamus and prefrontal cortex in response to high- versus low-caloric foods in patients with PWS compared to healthy weight controls (HWCs). Another study based on viewing pictures of foods after an oral glucose challenge in patients with PWS and HWCs showed increased reward value for food may underlie the excessive hunger and hyperphagia in PWS, thus confirming the vital role of the frontal cortex in modulating this response. **Conclusion:** We may be able to disrupt the onset of disordered eating behaviors by understanding the connection between neuro-endocrine systems and early management of uncontrolled compulsive eating patterns. Management should entail psychoeducation, strict dietary coaching and exercise regimens ensuring adequate energy expenditure, alongside FDA-approved medications, including naltrexone/bupropion or phentermine/topiramate, designed to maintain satiety, reduce cravings and ameliorate obesity.

No. 5

Child Psychiatry Movie Night: Faculty and Fellow Perceptions

Poster Presenter: Wesley Hill, M.D.

Co-Authors: Mariam Rahmani, M.D., Michael Shapiro, M.D.

SUMMARY:

Background: Engaging child and adolescent psychiatry (CAP) fellows in social activities with faculty may improve both implicit education and morale among members of a child psychiatry

training program. While there is some literature regarding film clubs for general psychiatry residency training programs, there is scarce information for similar models in CAP fellowship training programs. As CAP programs tend to be smaller, improving morale and relationships in a smaller setting may be important in strengthening a bond and sense of belonging. This may help facilitate education and recruitment of graduating fellows to stay in the program as faculty. **Objective:** A growing body of literature supports the use of movies in teaching psychiatry residents. Movies can illustrate psychotherapeutic principles, psychopathology and misconceptions of mental illness. There is less literature supporting the use of film in teaching child and adolescent psychiatry (CAP) fellows and if there are non-educational benefits. **Methods:** Child psychiatry faculty hosted “Child Psychiatry Movie Night” once per quarter for the CAP fellows for the 2015–2016 academic year. At the time of the third movie night, an anonymous survey was sent to the fellows and faculty participants regarding their perceptions of the experience. **Results:** Five fellows and three faculty completed the survey. “Bonding with fellows” was the most important reason given for attending Movie Night by both fellows and faculty. The next most important reasons for fellows were bonding with faculty, watching a good movie and enhancing education. For faculty, they were bonding with faculty, enhancing education and watching a good movie. Fellows also indicated that morale and relationships were more enhanced than education as a result of attending Movie Night. **Conclusion:** Movie Night was well received by both CAP fellows and faculty. Although prior literature successfully discusses the educational—both implicit and explicit—benefits of film clubs, our survey revealed that morale and fellow/faculty relationships were more highly rated both as reasons for attending and perceived benefits.

No. 6

Comparing Child and Adolescent First Mental Health Contacts With a Mobile Crisis Team

Poster Presenter: Rachel H. Olfson

Co-Authors: Victoria Balkoski, Ingrid Allard

SUMMARY:

Background: Public mental health strategies

commonly emphasize the importance of early detection and intervention for mental health problems as a means of reducing morbidity and improving clinical outcomes. However, the initial contact with the mental health care system sometimes occurs within the setting of behavioral health crises. Mobile crisis teams (MCTs) are interdisciplinary teams of mental health professionals that provide crisis interventions in the community. Little is currently known about the role of MCTs as a first point of mental health care contact for children and adolescents. This study compares sociodemographic and clinical characteristics in children versus adolescents whose first lifetime mental health contacts were MCT visits. **Methods:** Archival data were analyzed of young persons who received MCT visits between June 2010 and June 2015, provided by the Capital Region Child and Adolescent Mobile Crisis Team. During the study period, 20.7% of total MCT visits were first lifetime mental health contacts. Within this sample of first mental health contacts, children (N=151, ages 4–12) and adolescents (N=257, ages 13–18) were compared with respect to sociodemographic and clinical characteristics overall and stratified by source of referral (home, school or ED). All patients were rated by onsite MCT clinicians on a validated five-point Likert Crisis Triage Rating Scale. **Results:** Children were significantly more likely than the adolescents to be referred for crisis services from schools (33.7% vs. 13.2%, $p<0.001$) and less likely to be referred from EDs (31.1% vs. 46.7%, $p=0.002$). Among school referrals, adolescents had significantly higher clinical acuity than corresponding children ($p=0.01$). Although children referred from EDs had significantly higher clinical acuity than children referred from schools ($p=0.02$), adolescents referred from EDs and schools had a comparable level of acuity ($p=0.77$). Following the crisis visit, adolescents were significantly more likely than children to be referred for further psychiatric evaluation (10.3% vs. 0%, $p<0.001$). In addition, females were proportionately more common in the adolescent sample than the child sample (63.8% vs. 47.1% $p<0.001$). **Conclusion:** In the flow of young people into community mental health services, schools appear to play a larger role in crisis referrals for children than adolescents, though school-referred adolescents tend to have clinically more acute

presentations than school-referred children. These patterns underscore opportunities for early identification and referral of children and adolescents with mental health problems in schools and thereby reduce reliance on mobile crisis services as a first point of mental health contact.

No. 7

Identifying Symptoms of Trauma in Children and Adolescents on the Inpatient Psychiatry Service

Poster Presenter: Monica Badillo, M.D.

Co-Authors: Aas S. Mohammed Ameen, M.D., Viviana Chiappetta, M.D., Panagiota Korenis, M.D., Luisa Gonzalez, M.D., Michelle Kohut, M.S.W., Wen Gu, Ph.D.

SUMMARY:

Trauma is the result of a deeply distressing and disturbing incident in which the traumatic event overwhelms the individual's ability to cope with the experience, which can result in possible posttraumatic symptoms. A literature review estimates that 68% of children and adolescents have experienced a potentially traumatic event by age 16. About three million children are abused or neglected, and more than one in three children reported being emotionally bullied. Exposure to trauma can be associated with specific psychosocial characteristics that increase the risk of developing posttraumatic symptoms and later increase risk of posttraumatic stress disorder. These characteristics include separation from parents at an early age, experiencing neglect or abuse, or having preexisting anxiety or depression. In addition, those with posttraumatic symptoms are also at risk of having other psychiatric comorbidities such as anxiety, mood disturbances and substance use disorders. Reviewed literature indicates an increased incidence of posttraumatic symptoms of patients on the inpatient psychiatric service, and limited data exist on how this affects the treatment planning and outcome for patients on the inpatient unit. A performance improvement project was conducted in an urban inner city hospital on all newly admitted child and adolescent patients to the inpatient psychiatry service over a two-month period. Baseline data were collected, which identified not only the prevalence of posttraumatic symptoms, but also the clinical characteristics of these young patients. We

aim to appreciate and to further understand what traumatic experience is most prevalent in our child and adolescent community, with the goal to improve detection and management of posttraumatic pathologies.

No. 8

Hiding in Plain Sight: Catatonia as a Cause of Global Regression in a Patient With Down Syndrome

Poster Presenter: Vijeta Kushwaha, M.D.

Co-Author: Antoinette Jakobi, M.D.

SUMMARY:

Catatonia is a severe neuropsychiatric syndrome with its own set of diagnostic challenges in the pediatric population. In pediatric patients, its prevalence varies from 5 to 17%, depending upon the setting in which it is observed. Certain pediatric subset may be more prone to developing catatonia, and it is not an uncommon presentation of psychiatric and other medical disorders. Some of the challenges faced regarding diagnosis and management of catatonia in pediatric settings are related to its diagnostic overshadowing by autism spectrum disorder and other developmental disorders; the greater likelihood of Catatonia presenting in the office of a primary care physician, who may lack familiarity with its presentation in this subset; the ongoing perception of catatonia as a subtype of schizophrenia; and concerns regarding use of benzodiazepines and ECT in the pediatric subset. In this poster, we present a remarkable case of the ordeal of a family with a child who had history of Down syndrome and struggled with symptoms of catatonia for about two years before it was diagnosed and adequately managed. This is a case of a 10-year-old girl with Down syndrome and other medical comorbidities presenting with a gradual onset of global regression starting about when she was eight years old involving functioning in the areas of activities of daily living, social and interpersonal domains, language, and motor skills, along with marked withdrawal. Review of her history revealed intermittent presence of episodes of staring, stereotypic movements, incontinence, poor intake unrelated to medical issues, and episodes of unexplained laughing or crying occurring for about one year prior to her current presentation. The patient had been following up with her pediatrician,

and during the course of her regression, she was seen by a developmental pediatrician, sleep specialist and neurologist. Catatonia was considered as one of the differentials during the course of her workup, and after other potential causes were ruled out, she was admitted to receive a trial of intravenous lorazepam. The patient responded very well to the trial and has since been maintain well on oral lorazepam. There have been only a handful of case reports of catatonia in Down syndrome. The presentation of catatonia may be atypical in this subset. It is thus important to raise awareness and recognize the presentation for timely management and helping patients and families.

No. 9

Self-Harming Behavior in Adolescents With a History of Bullying: A Case Report

Poster Presenter: Raminder Pal Cheema, M.D.

Co-Authors: Muhammad Zeshan, M.D., Kamalpreet Singh, M.D., Panagiota Korenis, M.D.

SUMMARY:

Worldwide, there were more than three million reported cases of self-harm in 2013. Self-harm is more common in adolescence and young adulthood, especially in females age 13–24 and males age 12–34. The relationship between self-harm and suicide is very complex, with suicide rarely being the intent. However, people with history of self-harm are at increased risk of suicide, with self-harm found in 40–60% suicides. Self-harming behavior may be found in a wide range of psychiatric diagnoses, including personality disorders, mood disorders, psychotic disorders, and trauma-related disorders. Often, self-harm is used as a coping mechanism that provides temporary relief of intense feelings such as anxiety, depression, stress, emotional numbness, or low self-esteem. The incidence of self-harm in the younger population has been rising over the past decade, especially in settings of physical, sexual and emotional abuse, and especially in victims of bullying. In this poster, we present case of a 13-year-old girl who presented with depressed mood, passive suicidal ideations without a plan and hopelessness for two months. On evaluation, the patient also reported history of self-harming behavior (mainly cutting herself with sharp objects over her forearms and thighs) and history of trying

to stay outdoors during a snow storm in context of passive suicidal thoughts, but eventually coming inside after she experienced pain from the cold. The patient also reported a history of ongoing bullying at school, beginning when she was seven years old. The bullying was related to her appearance and resulted in low self-esteem and recurrent nightmares. Family history was positive for eating disorder and self-harming behavior in both her elder siblings. The patient had also reported “whispering voices” and “seeing shadows.” The patient’s initial workup showed no organic factors contributing to her symptoms. She was started on an SSRI and aripiprazole in addition to cognitive behavior therapy (CBT), which helped with mood/psychotic symptoms as well as self-harming behavior. Early childhood trauma is a widely researched area of interest, with an extensive range of physical and behavioral presentations. We illustrate the challenges faced by providers while treating adolescents and young adults, especially in the context of the changes in the psychosocial environment of children and adolescents over the past two decades contributing to the ever-changing emotional stressors. We also want to emphasize the importance of early identification and timely and appropriate intervention to prevent the long-term manifestations of adverse childhood experiences.

No. 10
Impact of Media Reports of Bomb Blasts and Political Unrest on a Child: A Case Report and Literature Review

Poster Presenter: Xiaojing Shi

Co-Authors: Vasudha Nekkanti, M.D., M.P.H., Zuleika Arroyo, Rashi Aggarwal, M.D.

SUMMARY:

Background: Many children develop stress or anxiety reactions such as agoraphobia and separation anxiety after direct exposure to natural disasters and mass violence. Viewing and hearing about these events on televised news programs may also trigger such reactions in children. These reactions are often mediated by factors such as the child’s developmental stage, temperament, pre-exposure psychological functioning, and home and school environment and level of support. Adults may underestimate children’s distress simply because

children exhibit their responses differently than adults. **Case:** We present the case of a 10-year-old girl who was brought to the emergency room by her concerned parents. The patient had developed insomnia and psychosis for three days after hearing her parents plan a trip to their native countries of Greece and Turkey. She had also watched televised news reports regarding the recent acts of mass violence in Europe. The patient reported that when she tried to fall asleep she saw “images in her head of people in the streets” from her bedroom window; she heard people’s voices, which corresponded to the “images” she saw; and she feared being left alone by her parents and brother. She also experienced the sensation of an “egg in her throat,” nausea, vomiting, and abdominal discomfort before going to bed each night. Our treatment team concluded a diagnosis of adjustment disorder with anxiety and recommended outpatient therapy that could foster appropriate coping strategies.

Discussion: The broadcast journalism of today increasingly sensationalizes current events with “instant replay” of highly graphic violence. Exposure to such intense media can trigger the overproduction of stress hormones that can disrupt the normal development of the brain in children and affect learning and behavior. We suggest that children watch news coverage with more emphasis on debate and discussion of events rather than graphic imagery. Creating links to literature and history can inspire further conversation and sharing among children, parents, teachers, and peers. In turn, such actions can promote more mature coping mechanisms in children such as problem solving, abstract reasoning, accurate analysis of events, and consideration of alternate perspectives. Parents should carefully monitor the media that children utilize and also heed warning signs of stress and anxiety responses in children. If such signs develop, parents should reassure the child of his safety, encourage him to express his feelings about the event, and, if signs persist or are severe, bring the child to a psychiatrist for proper evaluation.

No. 11
Clinical Case Study: An Adolescent With Conversion Disorder vs. Epileptic Seizure

Poster Presenter: Erik Carpio

Lead Author: Julia L. Hoang, M.D.

Co-Author: Takesha Cooper, M.D.

SUMMARY:

Background: According to the *DSM-5*, pseudoseizures, also known as psychogenic nonepileptic seizures (PNES), are a conversion disorder with the subtype “attacks or seizures with or without psychological stressor” and fall under the broader diagnostic category of somatic symptom disorder. As opposed to epileptic seizures, PNES are not connected to CNS dysfunction and rather have a psychogenic etiology (i.e., emotional, stress-related).

Case: An 18-year-old male presented with multiple seizure-like episodes associated with unresponsiveness, shaking, and headaches occurring two to five times a week and lasting from two minutes to hour. The first episode began on the fourth anniversary of when his mother was admitted to the hospital for leukemia and subsequently died three weeks later. The patient was angry at his father for causing her more stress and blamed him for contributing to her illness. These attacks would occur when he was faced with stress or anxiety.

Particularly, it was triggered when his father would pray at night. He was seen by neurology and started on valproic acid for seizure prophylaxis until he had an extensive workup and 24-hour EEG, which eventually reported no epileptiform activity. **Results:**

The patient is now seeing a therapist twice a week and has been prescribed a trial of desvenlafaxine titrated to 50mg by mouth every night at bedtime after multiple failed trials of other antidepressants. With continued treatment, his pseudoseizures have shown significant reduction in frequency.

Discussion: In the case presented, it appears that the traumatic experience of his mother’s death and the dysfunctional relationship between the patient and his father may be the precipitating factor for his symptoms. The gold standard for the diagnosis of PNES is video-electroencephalography. About 73–96% of patients will have a pseudoseizure within 48 hours of monitoring. CBT target changes to behaviors and thoughts that may increase stress and have shown that the incidence of pseudoseizures can be decreased. One study comprising 66 patients showed that those receiving CBT resulted in significantly fewer monthly pseudoseizures than those in the control group (2.0 compared to 6.8 episodes). Group therapy and family-based

education/therapy may also prove helpful in alleviating symptoms. Psychotropic medications can help address comorbid conditions such as depression, anxiety and PTSD, which are often associated with PNES. A thorough history, workup and full neurological assessment should be considered before diagnosing and treating patients with PNES. Once neurological pathophysiology is ruled out to be the cause of neurological symptoms, a psychogenic etiology could be considered.

No. 12

Addressing the Gap in Child and Adolescent Psychiatry Through Primary Care: Online Module-Based Curriculum Development

Poster Presenter: Laura Pientka, D.O.

Co-Authors: Colin J. Wendt, B.A., Claire Garber, Travis Fahrenkamp, Derek Leroux-Smith, Katie Steingraeber, M.D.

SUMMARY:

As the shortage of child and adolescent psychiatrists grow, so does the need for more providers to treat mental health disorders. Until the shortage of psychiatrists can be resolved, the burden falls on primary care providers. It is essential that medical students have the appropriate knowledge and training in managing or co-managing basic mental health concerns. All University of Minnesota medical students must complete a six-week psychiatry clerkship in their third or fourth year. Three weeks are completed on an adult psychiatric service, and students have the option to complete up to three weeks on a child and adolescent psychiatric service or on another adult psychiatric service. Less than 20% of students who complete a psychiatric rotation (required or elective) rotate on a child and adolescent psychiatric service. Almost half of the 2016 University of Minnesota Medical School graduates matched into a primary care residency program. For many medical students, choosing to spend three weeks on a child and adolescent psychiatric service during their required clerkship or as an elective may be the only training they receive regarding treatment and management of child and adolescent mental health disorders. This continues to follow a nationwide trend as nearly half of the NRMP match positions filled in 2016 were in primary care specialties. In addition, the required psychiatry

clerkship length varies by medical school and can be anywhere from three to six weeks long.

Opportunities to rotate on a child and adolescent psychiatry service are also medical school-dependent. The University of Minnesota Child and Adolescent Psychiatry Program plans to create resident-led teaching modules to help prepare medical students for assessing, diagnosing and managing mental health concerns in pediatric and adolescent populations. The modules are designed to be brief and assist medical students in evaluating, diagnosing and treating basic mental health concerns, as well as addressing when a referral to a psychiatric provider is indicated. Ten modules are currently being developed and will be taught to medical students rotating on the child and adolescent units, covering depressive disorders, PTSD, ADHD, autism spectrum disorder, symptoms of first-episode psychosis and prodromal phase, biopsychosocial assessment with child interview basics, attachment disorders, substance abuse in children and adolescents, specific anxiety disorders, neurodevelopmental milestones, and normal child development. This poster will evaluate the current need for more child and adolescent psychiatric services and providers in Minnesota, the way in which primary care providers can help to accommodate this need, and the creative ways in which this can be addressed through teaching future primary care providers through online modules. In doing so, the project hopes to address the shortage of child and adolescent providers not only in Minnesota but also nationwide.

No. 13

Treating Symptoms of Aggression in Prader-Willi Syndrome: A Case Report

Poster Presenter: Pratikkumar Desai, M.D., M.P.H.

Co-Authors: Benjamin Yee, M.D., Iram Kazimi, M.D.

SUMMARY:

Background: Prader-Willi syndrome (PWS) is the most common genetic cause of obesity. Symptoms include short stature, hypotonia, hypogonadism, mental retardation, and later increased appetite resulting in obesity. PWS coexists with multiple psychiatric comorbidities such as sleep disturbances, ADHD, disruptive behaviors, anxiety and mood disorders, psychosis, OCD, and impulse control

disorders. The majority of PWS patients are reported to have mild intellectual disability, which makes diagnosis and treatment of comorbid psychiatric illness challenging. Behavioral phenotype of PWS is associated with the presence of behavioral symptoms including food-related behaviors, oppositional defiant behaviors, cognitive rigidity or inflexibility, anxiety or insecurity, and skin picking.

Case: Mr. X. is an eight-year-old white male with history of PWS who was admitted to an inpatient psychiatric hospital for uncontrollable aggressive outbursts. He was medically cleared by the pediatric facility. En route to the hospital, he required physical restraints and intramuscular midazolam. He refused to cooperate with nursing assessment and physician interview, became angrier and irritable upon questioning, and spat on physicians. He was disruptive to the unit milieu and difficult to redirect. He received chlorpromazine 25mg orally three times in 12 hours to control agitation, which resulted in minimal improvement in his violent behavior. According to his mother, at school, the patient reportedly flipped the desk and bookshelf and destroyed school properties. She volunteered to fill out the Modified Overt Aggression Scale (MOAS) for the patient's symptoms within seven days prior to admission and scored 19 out of 30. On day two of hospitalization, the patient was prescribed clonidine 0.05mg twice daily and showed dramatic improvement in his behavioral symptoms. He was observed for four days and discharged to home. The patient's mother was contacted 10 days after the discharge. She reported that the patient's aggression had significantly decreased. She filled out the MOAS on phone, the patient's aggression scored at 5.

Conclusion: To our knowledge, this is the first report suggesting use of clonidine to control behavioral symptoms of PWS. A crisis of behavioral symptoms in children with PWS can tempt physicians to initiate aggressive pharmacological intervention including mood stabilizers, SSRIs or antipsychotics. Research on these medications to control behavior symptoms of PWS is limited and warrants more randomized clinical trials. Psychotropic medications can be useful in treating symptoms acutely, but their long-term side effects should be weighed against their benefits. Clonidine has not been studied in clinical trials for PWS. This case report suggests benefit of clonidine in treating behavioral crisis in PWS. The finding was

supported by reduction in MOAS score from 19 to 5 after 15 days of treatment. Further research regarding efficacy and tolerability of clonidine is warranted in PWS patients.

No. 14

The Case of the Missing Tooth: Behavioral Auto-Extraction of a Permanent Tooth in a Pediatric Patient

Poster Presenter: Martha J. Ignaszewski

Co-Authors: Serena Kankash, Shadi Zaghloul

SUMMARY:

Background: Oral self-inflicted lesions are an uncommon but known type of self-injury in clinical practice that are well established in patients with underlying intellectual disability. There are case reports describing dental autoextractions in these and acutely psychotic adult patients; however, there is a paucity of information about oral self-injurious behaviors leading to dental autoextraction in patients with predominant psychiatric issues without intellectual disabilities. We present a vignette describing a patient without any intellectual impairment presenting with loss of two permanent teeth, with behaviors resulting from a previously unknown spectrum of self-injury and repetitive body-focused behavior, and summarize the literature. **Methods:** We collaborated with the BMC Department of Pediatrics and the NYU Lutheran Department of Dental Medicine. We utilized PubMed and Medline for our literature review.

Results: Our patient is a 10-year-old Caucasian male who was admitted to Baystate Medical Center after apparent spontaneous loss of his permanent maxillary right central incisor. He was evaluated by dentistry, with a physical exam revealing a slightly mobile lateral incisor with no other abnormalities. Psychiatric assessment disclosed an otherwise healthy, though shy, boy of gifted intelligence with suspected diagnosis of Sutton disease and treatment of depression with 37.5mg of Zoloft, with recent psychiatric hospitalization for suicidal ideation, step-down to child partial hospitalization program, and Adderall XR 25mg for longstanding ADHD. Both the patient and family members adamantly denied any behavior leading to dental loss. Medical workup in the hospital was unremarkable. Three months later, he lost a second permanent tooth, and a diagnosis

was made of self-inflicted behavior leading to repeat dental loss. **Conclusion:** Dental autoextraction is a rare type of self-injurious behavior that has been infrequently described in the literature, with cases usually occurring in patients with underlying intellectual disability or significant psychotic illnesses. Dentists and psychiatrists alike should recognize such behavior as potentially representing an undiagnosed mental illness and should recognize a wide spectrum of self-injurious behaviors leading to oral cavity harm.

No. 15

Numbing the Pain: The Relationship Between PTSD Symptomatology and Deliberate Self-Harm

Poster Presenter: Anastasia Marie Pemberton, M.D.

Co-Authors: Pratikkumar Desai, M.D., M.P.H., Isha Jalnapurkar, M.D., Dana Hipp, M.D., Zachary J. Sullivan, D.O., Allison E. Engstrom, B.A., Teresa Pigott, M.D.

SUMMARY:

Background: Deliberate self-injurious behavior (SIB) is defined as "an act by an individual with the intent of harming himself/herself physically." The estimated prevalence of SIB in adolescents is 13.2%, and the most common methods include self-cutting, overdosing or self-poisoning. Ten percent of adolescents will reportedly engage in SIB by the time they finish secondary school. Individuals with SIB are more likely to have a psychiatric diagnosis as well as a past history of abuse and/or posttraumatic stress disorder (PTSD) symptoms. With these issues in mind, this study examined prevalence of SIB and PTSD symptoms in children and adolescents hospitalized in an acute psychiatric facility, as well as the potential relationship between SIB and PTSD symptoms with various demographic and clinical variables. **Methods:** Fifty-eight children and adolescents (ages 8–17) admitted to an acute psychiatric inpatient unit completed the Child PTSD Symptom Scale (CPSS), a 24-item self-report measure for assessing PTSD symptom severity in children; 17 items correspond to *DSM-IV* criteria. The total CPSS score ranges from 0–51, but a total score over 15 is considered criteria for high PTSD symptom severity in clinical samples. Relationships between PTSD scores (CPSS) with sociodemographic (age, race, gender) and clinical (diagnosis and self-

harm behaviors) variables were analyzed using independent sample t-tests and χ -square tests. An Independent sample t-test was used to compare SIB and other variables in high vs. low PTSD symptom severity groups. **Results:** Using *DSM-IV* criteria, 69% (40/58) of the pediatric inpatients met criteria for a primary mood disorder, 12.1% (7/58) a psychotic disorder, 10.3% (6/58) an impulse/conduct disorder, 5.2% (3/58) ADHD, and 3.4% (2/58) PTSD. Seventy-four percent (43/58) of the inpatient sample reported SIB and were significantly more likely to be female ($p<0.05$) or Caucasian ($p<0.05$). Children and adolescents with mood disorders were significantly more likely to endorse SIB (82%, 33/40) in comparison to the other diagnostic groups, including impulse/conduct (66.7%), PTSD (50%) and psychotic (28.6%) disorders. Using the CPSS, 43% were classified as high PTSD versus 57% low PTSD symptom severity. The association between high PTSD symptom severity and higher rates of SIB approached significance ($p=0.06$). That is, 88% of those with high PTSD reported SIB, whereas 64% had SIB in the low PTSD group. **Conclusion:** Results from this study suggest that children and adolescents admitted to inpatient psychiatric facilities have elevated rates of SIB and also PTSD symptoms. Moreover, those with a primary mood disorder are particularly at risk for SIB, and Caucasian race and female gender also appear to increase risk for SIB. In addition, the presence of greater PTSD symptom severity may also signal an increased risk for SIB. While preliminary, these results demonstrate the importance of screening for SIB and PTSD symptoms in pediatric psychiatric inpatients.

No. 16

Difficulties in Managing Aggression in a Patient With Autism and Rubinstein-Taybi Syndrome

Poster Presenter: Brett Chamberlain, M.D.

Co-Author: Garima Singh, M.D.

SUMMARY:

Rubinstein-Taybi syndrome (RTS), also called broad thumb-hallux syndrome, is a rare genetic syndrome occurring in 1 in 100,000–125,000 newborns and characterized by short stature, moderate to severe intellectual disability, distinctive facial features, and broad thumbs and first toes. There are also some studies demonstrating the co-occurrence of

behavioral concerns, attention problems and repetitive behaviors with this syndrome. We present a rare case of a child with RTS and autism spectrum disorder (ASD) and discuss the treatment challenges with the case. Mr. R. is an 11-year-old Caucasian male with a history of autism, intellectual disability and Rubinstein-Taybi syndrome who presented to the psychiatry clinic for management of behavioral issues, primarily increased aggression. The patient is nonverbal and was accompanied by his mother, who relayed her concerns. His concerning behaviors included skin picking on his legs and stomach, self-harm in the form of hitting himself, harming others—primarily his mother—and breaking items in the house. The patient was highly demanding, aggressive when his demands were not met and extremely difficult to satisfy. The patient's mother lives alone with the patient and has the support of the maternal grandparents, who provide care while the patient's mother is working and occasional extra care for respite. Behavioral interventions have been attempted, and the patient was on aripiprazole 5mg daily for aggression, risperidone 0.5mg at bedtime for sleep and aggression, and sertraline 37.5mg daily for skin picking and obsessive compulsive-like behaviors. After the initial meeting with psychiatry, his risperidone was stopped to reduce side effects associated with multiple antipsychotic regimens, and his aripiprazole was increased to 5mg twice daily for his mood and aggression. For sleep management, melatonin was initiated, and the patient's mother was asked to follow up via phone call with results in one week. She was also referred to applied behavioral analysis (ABA) to address the behavioral outbursts. Follow-up appointment one month later showed little improvement, and so aripiprazole was further increased to 7.5mg in the morning and 5mg in the evening; no other medication changes were made. The patient and his mother were again encouraged to follow up at the severe behavior clinic, which, as of this writing, has not been completed. This case serves to further illustrate behavioral issues found in patients with Rubinstein-Taybi syndrome and the challenges associated with treating these behavioral issues along with managing comorbid conditions such as autism, which contribute to these behavioral symptoms. Very limited literature is available on this topic, and the association with autism spectrum disorder makes

this case more rare and severe. More research and studies are needed to find further treatment and management options to help our patient and families.

No. 17

Improving Collaboration Between Psychiatry and the Foster Care System

Poster Presenter: Venkata B. Kollu

Lead Author: Yon J. Chong, M.D., M.P.H., M.B.A.

Co-Author: John A. Pesavento, M.D.

SUMMARY:

Background: The child foster care system in the United States is comprised of a vast network of state agencies and workers aimed to promote the well-being of children. In the most recent annual report by the Nebraska Foster Care Review Office from July 1, 2013, through June 30, 2014, a total of 5,466 children (not counting youth under the Office of Juvenile Services or the Office of Probation Administration) were in out of home care during some portion of their lives. We observe a lack of communication between agencies in caring for these child and adolescents, impacting delivery. **Objective:** Identify opportunities to improve mental health of children in foster care and explore areas of information exchange and collaboration in treating foster care children. **Methods:** Following a review of the American Academy of Child and Adolescent Psychiatry (AACAP) practice parameters and recognizing issues with caring for these children in foster care, a meeting with Nebraska Families Collaborative (NFC), an organization that is contracted by the state of Nebraska to provide foster care services, was completed. A survey questionnaire was circulated to NFC caseworkers and to the Dodge Street Psychiatry staff in Omaha, Nebraska. **Results:** We received 100% response (6/6) from front desk staff that the problems for caring for children under care of NFC included scheduling initial appointments, obtaining guarantor information, obtaining consent, and releases of information. Our survey response from NFC was 33% (49/150). Eighty-five percent of caseworkers took care of more than 15 children at any time. More than 50% of the child and adolescents in their care had mental health issues. Caseworkers report providers not responding in a timely manner,

followed by heavy case load as a primary impediment in communication. Sixty-three percent felt communication is less than adequate. The qualitative analysis suggests using a point of contact, having an efficient and timely means of sharing information. Implications This "Do" of the PDSA (Plan Do Study Act) will be accomplished via multidisciplinary coordination, optimizing intake packets, having a designated point of contact and champions from both organizations, and having regular coordination meetings.

No. 18

Collaborative Care Approach for Treating Children With Depression With Associated Psychogenic Movement Disorders

Poster Presenter: Suneela Cherlopalli, M.D.

Lead Author: Anil K. Bachu, M.D.

Co-Authors: Raman Marwaha, M.D., Amit Thour, M.B.B.S., Ramya Javvaji

SUMMARY:

Depressive disorder presenting as psychogenic movement disorders (PMD) has been rarely reported in childhood. We reviewed a case series of adolescent patients whose depressive disorder presented with psychogenic motor abnormalities that demonstrated the challenge of assessment and management of children and adolescents with such problems. We highlight the importance of working in a multidisciplinary team that is a core component of treating abnormal movement disorders of psychogenic origin.

No. 19

Two 10-Year-Old Asian-American Children Admitted for Restricted Eating and Rapid Weight Loss

Poster Presenter: Meredith Harewood, M.D.

SUMMARY:

Within weeks of each other, two unrelated 10-year-old children of East Asian ethnicity, one female and one male, with no past psychiatric history, presented to a children's hospital with restricted eating leading to rapid weight loss. Eating disorders are uncommon in children of this age and have traditionally been viewed as uncommon in Asian Americans. Both children were first-generation Americans from high

socioeconomic status families and were compliant academically high-achieving. The medical workups were negative. The boy presented with anxiety, depression, restricted eating, and several obsessive-compulsive symptoms. Anxiety and its somatic manifestations preceded the restricted eating, also leading to depression. His course was complicated by significant guilt and feelings of failure when he did not complete meals. The girl espoused vague concerns with being overweight, but no typical antecedents to developing body image concerns. She eventually revealed depressive symptoms, possibly stemming from social differences with her peer group and her family. The children were difficult to refeed and complained of significant abdominal pain throughout the process. Their parents were resistant to several aspects of the eating disorder protocol and hesitant to consent to pharmacological treatment. Both families were anxious and required considerable time from both the psychology and psychiatry consultation-liaison services. SSRIs for comorbid depression and/or anxiety were recommended for both children, with the addition of mealtime anti-anxiety medications for the boy. The refeeding process and weight gain were slow, and both children required additional treatment in an eating disorders partial hospitalization program after inpatient discharge. In patients who do not conform to the typical profile of eating disorders, it is important to consider the role of comorbid conditions and psychosocial factors, including family dynamics, in the etiology.

No. 20

Anxiety Symptoms in Pediatric Psychiatric Illness Exacerbation: Prevalence and Potential Impact on Demographics, BMI and Length of Stay

Poster Presenter: Dana Hipp, M.D.

Co-Authors: Pratikkumar Desai, M.D., M.P.H., Isha Jalnapurkar, M.D., Anastasia Marie Pemberton, M.D., Allison E. Engstrom, B.A., Robyn Douglas, Teresa Pigott, M.D.

SUMMARY:

Background: Comorbid anxiety disorders are not uncommon in children and adolescents with mood disorders, ADHD or conduct disorders, but there is limited data concerning their prevalence in inpatient samples. Since the majority of treatment cost is

associated with inpatient treatment, identifying clinical features that may impact LOS is important. Obesity has increasingly emerged as a critical problem in children and teens with significant health, social and psychological consequences, as well as increased medical care costs. With these issues in mind, this study examined anxiety symptoms and body mass index (BMI) in acutely hospitalized pediatric patients with primary mood, psychotic, or ADHD/conduct disorders, respectively, and also analyzed the potential relationship between anxiety severity and BMI with various demographic and clinical variables. **Methods:** Fifty-eight children and adolescents (33 female, 25 male) ages eight to 17 admitted to an acute psychiatric inpatient unit completed the Screen for Childhood Anxiety-Related Emotional Disorders (SCARED), a 41-item questionnaire that screens for symptoms associated with specific anxiety disorders as well as symptoms common across anxiety disorders based on *DSM-IV* criteria. The total SCARED score ranges from 0–82, but total score over 25 is considered criteria for high anxiety and was used to divide the sample into two groups: high versus low anxiety. LOS was used to measure clinical outcome. Descriptive statistics, analysis of variance and linear regression were used to examine relationships between anxiety scores (SCARED) and variables of interest. Independent sample t-tests were used to compare BMI and LOS with gender, a one-way ANOVA was used to compare BMI and LOS with race, and diagnosis and linear regression were used to compare BMI and LOS with age. An Independent sample t-test was used to compare BMI and LOS in the high- versus low-anxiety groups. **Results:** Fifty-five percent (32/58) of the children and adolescents admitted to the acute psychiatric unit met criteria for high anxiety. No group differences in primary psychiatric diagnosis, gender, race, or LOS were detected between the high- versus low-anxiety groups. There was also no significant linear relationship identified between total SCARED scores or LOS ($r^2=0.0002$, $p=0.8786$). Age, gender, race, and diagnosis did not have a significant correlation with BMI and LOS, and there was no group difference in mean BMI and LOS. **Conclusion:** These results suggest that over half of children and adolescents hospitalized for an acute exacerbation of a primary mood, psychotic or ADHD/conduct disorder endorsed high anxiety.

While high anxiety levels were not significantly associated with demographic, BMI or clinical variables, these results are preliminary, as the current study is ongoing and a total sample size of 150 is expected. Nonetheless, this is one of the first studies to examine comorbid anxiety and BMI in children and adolescents hospitalized for psychiatric illness.

No. 21

Objective Sleep in Adolescents and Young Adults With Anxiety Disorders

Poster Presenter: Sumeet Sandhu

SUMMARY:

Background: Anxiety disorders in adolescents and young adults are known to be associated with sleep disturbances. However, most of these studies examined subjective sleep disturbances. The few studies that attempted to examine objective sleep in anxiety disorders were limited by small sample size and/or clinical samples. In this study, we examined the association between anxiety disorders and objective sleep using both actigraph and polysomnogram in a general population sample aged between 12–22 years. **Methods:** The data were collected in a general population sample of 12–22-year-olds who were originally recruited for a larger study examining sleep and cardiometabolic factors. Anxiety disorders and other axis I psychiatric disorders were evaluated by a structured diagnostic interview (Mini International Neuropsychiatric Interview). Objective sleep was assessed using seven consecutive nights of actigraph and one night of polysomnogram. **Results:** Among the 213 subjects who completed all the required procedures for this study, 29 (13.6%) had at least one *DSM-IV-TR* axis I anxiety disorder. The subjects with versus without anxiety disorders were similar in age, gender and percentile BMI for age and gender. Subjects with anxiety disorders had significantly increased prevalence of depression ($p=0.041$). There was no difference in polysomnographic sleep in those with versus without anxiety disorders. Adjusted (age, gender, percentile BMI for age and gender, depression, alcohol/substance use disorders) night-to-night actigraphic total sleep time (TST) variability was significantly higher in subjects with anxiety disorder ($p=0.030$). **Conclusion:** Actigraphically

assessed night-to-night variability in total sleep time was independently associated with anxiety in this general population sample of adolescents and young adults. The cause and effect relationship cannot be assessed from this cross-sectional study. It is possible that instability in the sleep-wake system may increase the risk of anxiety disorders or anxiety disorders may cause disturbances in sleep-wake patterns or the possibility of a common underlying mechanism leading to disturbances in the sleep-wake system and increased risk of anxiety disorders. The American Foundation for Suicide Prevention (AFSP) supported this research—need grant number: NIH R01 HL 97615 and the CTSI UL1 RR033184, and C06 016499.

No. 22

Phagophobia in a Pediatric Patient Treated With Psychopharmacological Intervention Along With Psychotherapy: A Case Report

Poster Presenter: Yeji S. Kim, D.O.

SUMMARY:

Phagophobia, fear of swallowing, is characterized by significant complaints about swallowing despite normal physical examination and laboratory findings and can be defined as a form of psychogenic dysphagia. Since patients with phagophobia are fearful and avoid oral intake, they can present with weight loss, dehydration and malnutrition. We present a case of a 10-year-old female with history of two episodes of near-choking within a week, along with history of sexual trauma, who developed phagophobia and ceased all oral intake over a period of two months, requiring inpatient level of care for NG tube placement due to dehydration and weight loss. After she was cleared medically, she was transferred to psychiatry and treated for phagophobia. Initially, it took the patient at least four hours to finish her meals, and the patient was making minimal progress. She was started on lorazepam prior to meals and sertraline as psychopharmacological intervention along with psychotherapy. With these interventions, the time to finish her meals decreased, her weight increased by two pounds and she was able to tolerate solid foods. In this case study, an anxiolytic and an SSRI were started, and symptoms quickly improved; the anxiolytic was discontinued prior to discharge with

the treatment plan to continue on cognitive behavior therapy (CBT) with SSRI. However, once the anxiolytic was discontinued, the patient quickly decompensated, requiring readmission for IV hydration. The anxiolytic was restarted, which alleviated the anxiety associated with eating and was able to improve her symptoms to help her bridge to outpatient level of care along with CBT.

No. 23

Sensory Processing Disorder: Categorization, Controversy and Psychiatric Comorbidity

Poster Presenter: Carolyn Elaine Auffman, M.D.

Co-Authors: Katherine Rosenblum, Ph.D., Sarah Mohiuddin

SUMMARY:

Sensory processing disorder (SPD), a term primarily from the occupational therapy literature, refers to individuals who report or exhibit unusual or exaggerated sensitivities to stimuli. SPD has been the focus of significant controversy, as the evidence base of both diagnostic and treatment algorithms has been limited. The American Academy of Pediatrics issued a policy statement in 2012 recommending against the diagnosis of SPD, citing the paucity of available evidence, instead encouraging practitioners to evaluate a child presenting with sensory sensitivities for other diagnoses. Since the time of that statement, however, evidence has emerged supporting the existence of sensory processing disorder as a phenomenologically distinct diagnosis with unique psychiatric comorbidities and compounding functional impairments for both patients and their families. This poster will explore the most recent literature describing the categorization, controversy and psychiatric comorbidities associated with sensory processing disorder, explain why it is vital for psychiatrists to have a working knowledge of these symptom clusters, and provide practical recommendations for psychiatrists encountering these questions from patients and their families.

No. 24

PANDAS and FNDS: Immunologic Dysfunctions With Similar Neurobiological Manifestations

Poster Presenter: Jorge A. Diaz, M.D.

Co-Authors: Brandon K. Baker, D.O., Philip Laplante,

D.O., Americo Padilla, M.D.

SUMMARY:

Background: Recently, the role of the immune system in the development of psychiatric manifestations has been highlighted by the discovery of lymphatic vessels in the central nervous system. In this poster, we present two cases illustrating the impact of immunologic dysregulation on inducing similar clinical symptomatology of two distinct psychiatric disorders. **Case:** 1) A 17-year-old Cuban male presented to Nicklaus Children's Hospital due to a three-day history of new-onset hyperactivity, insomnia and hallucinations. He was experiencing nighttime fear, insomnia, agitation, bilateral abnormal movement in upper extremities, auditory hallucinations, paranoia, and decreased appetite. He also displayed obsessive-compulsive behaviors. He was admitted to the pediatric ward. Initial evaluation consisted of a complete physical, lab and imaging studies, and consultations with neurology, psychiatry, rheumatology, and infectious disease. The patient was started on high-dose steroids, intravenous immunoglobulin and haloperidol. He was subsequently transferred to the psychiatric unit when his neuropsychiatric symptoms failed to remit. Pertinent in the history was schizophrenia in the family, a recent skin infection and synthetic marijuana use. 2) A 13-year-old Hispanic male presented to Nicklaus Children's Hospital with a two-day history of new-onset change in behavior, hallucinations and incoherence. His father reported the patient had been speaking "nonsense." He had become obsessed with cleaning the house, behaved aggressively toward his family, and demonstrated abnormal hand movements and blinking of the eyes. Pertinent in this history was a recent throat infection and a significant acute emotional stressor. The patient was admitted to the inpatient psychiatric unit and was observed to have mutism, difficulty swallowing and inappropriate behavior. Initial management included a complete physical and biopsychosocial evaluation, brain imaging, lab studies, and initiation of high-dose steroids, intravenous immunoglobulins, and Risperdal.

Conclusion: These two patients displayed remarkable similarities in their presentations but were ultimately diagnosed with different disorders. Of greater significance, the cases share a common

association of autoimmune dysregulation, but required very different management in order to positively impact prognosis for each patient. The commonalities of presentation and immunological roles calls into questions not only how we might best manage these disorders, but also how to best triage and diagnose them to prevent delays in effective treatment. We will suggest an integrated approach to managing such cases after discussing each case in detail.

No. 25

WITHDRAWN

No. 26

Pediatric Catatonic Mania in the Consultation-Liaison Setting and Inpatient Setting: A Case Report

Poster Presenter: Cheryl Chen, M.D.

Co-Author: Awais Aftab, M.D.

SUMMARY:

K. was a 16-year-old African-American male with no previous psychiatric history admitted to the child and adolescent psychiatry inpatient unit (CAPU) for manic symptoms lasting one week. Presentation was notable for hyperactivity, insomnia, pressured speech, flight of ideas, and grandiose ideation. Aripiprazole was initiated and titrated to 10mg by mouth daily with significant improvement, and he was discharged home on guardian request. A week after discharge, K. developed anxiety, subjective fever, diaphoresis, muscle stiffness, tremors, sluggishness, and decreased appetite.

Diphenhydramine was started for suspected EPS. However, muscle stiffness and sluggishness worsened, and the patient was admitted medically for altered mental status and weakness. Initial assessment was concerning for delirium given confusion and disorientation. Diphenhydramine was discontinued to minimize anticholinergic effects. Malignant neuroleptic syndrome was considered, but the patient was hemodynamically stable with only mildly elevated and down-trending CK. Catatonic symptoms developed, including waxy flexibility, negativism, posturing, echolalia, generalized stiffness, weakness, and inability to walk. An Ativan challenge of lorazepam 4mg IV push resulted in mild improvement. The patient was transferred to the CAPU for further management.

Lorazepam was titrated to 2mg twice daily by mouth, and K. became less stiff and showed spontaneous movement. However, echopraxia and echolalia became prominent, and the patient still appeared manic. K. was verbally flirtatious and demonstrated an elevated mood, incomprehensible and pressured speech, flight of ideas, and grandiose delusions. K. stated he was a millionaire with multiple degrees running for president, and the CAPU was his campaign office. Seroquel XR was started and titrated to 300mg twice daily by mouth for mood stabilization. By hospital day 23, K. ambulated independently and showed improvement in self-care and interpersonal behavior. K. was discharged on hospital day 26 on lorazepam 1mg twice daily by mouth and quetiapine 600mg daily by mouth with a diagnosis of bipolar I disorder, manic episode, with psychotic features and catatonia. Catatonic symptoms in the presence of active mania have been reported in literature but are understudied. The prevalence of catatonic symptoms in inpatients with mania may be up to 20%, and catatonic mania presents with more severe manic symptoms and mixed features. These patients also tend to have more general psychopathology, a higher prevalence of comorbidity and longer hospitalization. Delirium has also been reported among manic inpatients, with a high association with catatonic symptoms. Both catatonic mania and delirious mania are responsive to high-dose lorazepam and electroconvulsive therapy. This case illustrates the importance of recognizing delirium and catatonia in the setting of mania. These features are reflective of a more severe disease course, but can be adequately treated with appropriate interventions.

No. 27

Cannabinoid Hyperemesis Syndrome: Report of Two Cases and Review of Literature

Poster Presenter: Senthil Vel Rajan Rajaram Manoharan, M.D.

Co-Authors: Shivanshu Shrivastava, Atika Zuber, Cristina Vo, Tolga Taneli

SUMMARY:

Background: Cannabinoid hyperemesis syndrome (CHS) is characterized by recurrent nausea, vomiting and abdominal pain from chronic heavy cannabis

use. CHS presents with acute hyperemesis episodes occurring every four to eight weeks separated by symptom-free periods. CHS is most often reported in individuals with daily use of cannabis during their teenage years. **Case:** 1) A 16-year-old Hispanic girl presented with acute epigastric pain and recurrent vomiting for two days. She denied constipation, recent changes in diet, travel, and sick contacts. She reported of daily habitual use of cannabis for one year without other substance use, in agreement with urine toxicology. Abdominal ultrasound did not show appendix, gallbladder or pancreatic pathology. Right incidental ovarian cyst was found, without torsion or rupture. In the hospital, she compulsively took hot showers, describing temporary relief of symptoms. 2) A 15-year-old Hispanic girl with a history of trichotillomania presented to the ED with abdominal pain, nausea and vomiting. She had been admitted to pediatrics four times in nine months for similar presentations. She reported smoking cannabis daily for three years. Episodes of vomiting occurred every three months and lasted for ten days. During episodes, she reported taking up to ten hot showers daily. Both patients met major and supportive criteria for the syndrome as defined in the literature. Symptoms resolved with the cessation of cannabis use for both. **Discussion:** Allen, et al. first recognized CHS in 19 patients with cannabis abuse and cyclical vomiting. Of the constituents of cannabis, tetrahydrocannabinol is known for anti-emetic properties, but cannabidiol (CBD) and cannabigerol (CBG) are pro-emetic and modulate the effects of THC. CHS is a recurrent disorder with symptom-free intervals, viewed as divided into pre-emetic or prodromal, hyperemetic, and recovery phases. Patients usually present to the ED in the hyperemetic phase. It is during this phase that compulsive hot showers are taken. CHS is refractory to antiemetics, and interventions that have been suggested in literature are dronabinol, clonidine and lorazepam. Treatment should focus on cessation of cannabis use. Even a single session of motivational interviewing has shown efficacy among heavy users. **Conclusion:** A thorough history, establishing a temporal relationship and early recognition can reduce health care costs by eliminating unnecessary diagnostic tests and evaluations. Prevalence of CHS is likely to increase given the tendency to legalize marijuana. Physicians should have a high index of

suspicion in a patient presenting with intractable vomiting and chronic cannabis abuse.

No. 28

Adult Psychiatrists Less Likely Than Child Psychiatrists to Consider Family Dynamics in Treatment Planning

Poster Presenter: Zachary J. Sullivan, D.O.

Co-Authors: Isha Jainapurkar, M.D., Pratikkumar Desai, M.D., M.P.H., Omar D. Gonzales, Allison E. Engstrom, B.A., Teresa Pigott, M.D.

SUMMARY:

Background: The importance of familial interactions in psychiatric illness is often not appreciated by physicians and other health care providers despite evidence that it may lead to poorer clinical outcomes for patients. This study was designed to explore faculty physicians' attitudes and perceptions concerning the involvement of a patient's family in their ongoing clinical care. **Methods:** A brief survey comprised of 22 questions was developed, and once it was approved by the local IRB, the survey was disseminated per email to 112 psychiatrists affiliated with the department of psychiatry at the University of Texas Health Science Center at Houston. The survey questions were divided into four main areas: physician perception of family involvement in the care of a psychiatric patient, physician communication with family members, importance of family interactions on the course of illness, and the presence of a psychiatric diagnosis in the patient's family members. An independent sample t-test was used to calculate between-domain differences based on practice setting and training (with or without child fellowship training). A chi-squared test was used to analyze responses to desire for psychoeducational programs involving families. **Results:** Fifty-two of the 112 surveys were completed; 16 were practicing in outpatient versus 36 in inpatient clinical settings. Eleven completed a child fellowship versus 41 without a child fellowship. There was no significant difference in survey response between the inpatient versus outpatient settings. However, faculty who completed a child fellowship (11) were significantly more likely ($p < 0.05$) than those without child fellowship training to involve family members in the care of the patient, place greater value on physician communication

with families and consider the potential impact of other family members on the patient. 71.1% of respondents reported interest in receiving guidelines about family-oriented interventions. **Conclusion:** Results from this study suggest that faculty psychiatrists who have also completed child fellowships are much more likely to not only consider family dynamics in a patient's psychiatric illness but also more likely to communicate and involve the patient's family in the treatment process. Although further study is needed, these preliminary data suggest that psychiatrists lacking child fellowships may benefit from more education about the potential benefits of great family involvement in enhancing treatment outcomes.

No. 29

15-Year-Old Male With Hallucinations and Parkinsonian Side Effects

Poster Presenter: Samuel A. Nicolas, M.D.

SUMMARY:

A 15-year-old Filipino male with a history of developmental delay, intellectual disability and dysmorphic features who was previously treated with antipsychotic and SSRI medications for hallucinations and depression presented with what were initially suspected to be Parkinsonian side effects including bradykinesia, cogwheel rigidity and masked facies. Even after all antipsychotic and SSRI medications were discontinued, the Parkinsonism continued and was only slightly improved with lorazepam. Stimulants and amantadine improved fluid movement but worsened the hallucinations while increasing impulsivity and aggression. Previous genetic testing had been inconclusive, but we obtained exome testing that showed a de novo mutation, likely pathogenic variant, in the human immunodeficiency virus type I enhancer binding protein 2 (HIVEP2) associated with mental retardation syndrome type 43. Only nine other cases have been reported in medical literature, all associated with developmental delay, intellectual disability, behavioral problems, and dysmorphic features. Only one of the previous nine cases was associated with Parkinsonism, and no other cases were associated with hallucinations. HIVEP2, also known as Schnurri-2 or MHC-binding protein 2, is a large transcription factor implicated in

neurodevelopment. Takao et al. reported a knockout mouse model that produced mice with cellular and behavioral changes similar to schizophrenia. The mice showed increased brain inflammation, supporting the suspected contribution of immune system changes in the development of schizophrenia. While this is the only patient with reported hallucinations, the sample size for this diagnosis thus far is very small. The findings in the mouse model suggest schizophrenic features would not be unexpected in this syndrome. As more patients are identified, the phenotypic spectrum will hopefully become better defined. Single gene disorders such as this continue to expand our understanding of the complex systems associated with neuropathology.

No. 30

Conversion Disorder in a Nine-Year-Old Girl Following Repeated Psychosocial Stressors

Poster Presenter: Iris V. Guerrero

Co-Authors: Claudia J. Chapa, M.D., Rajasekhar Addepalli

SUMMARY:

The patient is a nine-year-old girl with no previous psychiatric history who presented to the ED after having a seizure-like event and then endorsing loss of eyesight in one eye and ataxia. After careful history taking, it was found that the patient had repeated psychosocial stressors before this event, including repetitive bullying at school that had been going on for a year; the recent death of her primary caretaker at home, who was her grandmother; her mother being admitted to an inpatient unit multiple times; and, one week before the event, accidentally walking in on her parents when they were having sexual intercourse. After this last incident, the patient did not speak to her parents for two days and then seemed to go back to relating adequately with them until one week after, when she woke up screaming, complaining of being unable to breathe and becoming stiff. She was taken to the ED, and ataxia was noticed during physical exam. The patient also endorsed inability to see from one eye during the physical exam. Multiple laboratory tests and imaging tests were performed, which came back normal. There was reluctance among the primary treating team to diagnose the patient with

conversion disorder, but after judiciously ruling out organic causes with serial tests, physical exams and history, the patient was diagnosed with conversion disorder and was referred for therapy. The patient started therapy sessions and was able to speak about her multiple stressors, and symptoms completely subsided as therapy sessions went along. In this poster, we discuss the challenges of diagnosing conversion disorder in children and the importance of prompt diagnosis to aid in treatment and resolution of symptoms.

No. 31

Regression in a Three-Year-Old Girl After a Severe Dog Attack

Poster Presenter: Zeynep Ozinci, M.D.

Co-Authors: Shivanshu Shrivastava, Senthil Vel Rajan Rajaram Manoharan, M.D., Tolga Taneli

SUMMARY:

Background: While dog bite or attack cases have been written about extensively, relatively little has been published on the psychological outcomes of such trauma in children. **Case:** A three-year-old African-American girl without psychiatric history was admitted to the pediatric intensive care unit of our urban tertiary care hospital following a pit bull attack at her grandmother's home. She was found to have multiple bite marks on her face and arms and a severe degloving injury of her scalp requiring grafting. Since the incident, the child had been nonresponsive to most questions and refused to eat or walk. She had been irritable and agitated. She had nightmares and was readily startled when shown a toy tiger. Previously, she was a happy, playful and restless child who got along well with her peers in daycare. No history of trauma or developmental/intellectual disability was reported. On initial evaluation, the child was essentially mute, uncooperative and irritable. She made poor eye contact. During regular visits by the child and adolescent psychiatry team, she was initially guarded and responded to simple questions with one-word answers. She eventually cooperated, beginning to walk around on the unit and eating better. Family work focused on education about typical trajectories of trauma in children and regression as a not uncommon early response.

Discussion: Dogs coevolved with humans as our

social partners; however, dog attacks are serious and an often underestimated public health problem. Children younger than ten are at the highest risk. Children who are subjected to dog attack are often provided with medical attention, but psychological support is rarely offered. Personality changes characterized by thought constriction, "overcaution," inhibition of action, and impaired ability to experience gratification were reported in the research studies. Psychiatric symptoms lasted longer than anticipated, and personality change persisted for years. Available studies discuss strategies to prevent dog bites including breed selection, vaccination, dog training, physiological interventions, parent and child training on approaching dogs, dog cues signaling aggression, and appropriate responses to attack. **Conclusion:** Health professionals and families should be educated about trauma response in children—including dependency on caretakers and feeding problems—as well as monitoring changes in mood, behavior, sleep, appetite, and learning and attention capacity, along with the impact of trauma on psychological and personality development. Psychiatric consultation should be offered immediately after trauma. Cognitive behavior therapy is effective in approaching children with trauma-related symptoms. Systematic desensitization for fears/phobia and family support are essential.

No. 32

The Effect of Prenatal Stress on the Incidence of ADHD in Offspring

Poster Presenter: Param Sahgal

SUMMARY:

Background: "Stress" in pregnancy is subjective and can vary based on hormonal changes, individual personalities, environmental factors, etc. Based on past studies in prenatally stressed rats, the injection of CRH into the amygdala during pregnancy promotes anxiety-like behavior. Experiments were also done involving prenatal glucocorticoid treatment, found to naturally increase the CRH-mRNA levels in the central nucleus of the amygdala in the offspring. In these two experiments, as offspring of the prenatally stressed rats grew in age, they experienced memory problems earlier in life

compared to other rats and also showed decreased hippocampus density. In this particular study, in order to remove the subjective bias of stress, we organized “stressful” life events into universally recognized categories that were more serious in nature. Our hypothesis is that there is a positive correlation with “stressors” during pregnancy and the eventual diagnosis of ADHD in the subsequent offspring. **Methods:** Our survey targeted females with at least one child under the age of 18 with diagnosed ADD/ADHD. The survey was distributed online by random sampling to various social media parental ADHD support groups. The goal of study was to determine presence of maternal stress in pregnancy by asking about ten specific stressors. These include death of a loved one, complications with pregnancy, total family income of less than \$30,000, incarceration of self or family member, divorce/relationship problems, working longer than 40 hours/week, personal injury/illness, caring for a chronically ill family member, dismissal from work, and changes in living/working conditions. After participants complete the survey, the goal is to evaluate prevalence of each stressor in “creating” a child with ADD/ADHD. **Results:** Parents who did not have a child with diagnosed ADHD were excluded from the study. This study only pertained to patients within the United States. Mean age of mothers during pregnancy was 27.4 years. **Conclusion:** We found a 69% correlation with generalized prenatal stress and the diagnosis of ADHD in the subsequent offspring with no prior family history of ADHD. This may also be due to pregnant women generally experiencing stressful events during their pregnancy, but since the list of stressors the survey respondents could choose from were more severe stressors in nature, this correlation is unlikely to be true. One must reason, however, that it is not so much the presence of “self-reported” stress, but rather the lack of understanding in how to cope with life circumstances. Based on the proven effect of CRH receptor downregulation in the offspring of prenatally stressed rats, is it possible that we as human beings have become so desensitized to stress that we no longer realize how “stressed” we really are? The question that must be asked is what kind of physiological effect this level of neuroendocrinology is having on our future offspring.

No. 33

Neuropsychiatric Manifestations of Moyamoya Disease in a 13-Year-Old Boy: Case Report and Literature Review

Poster Presenter: Shivanshu Shrivastava

Co-Authors: Senthil Vel Rajan Rajaram Manoharan, M.D., Zeynep Ozinci, M.D., Tolga Taneli

SUMMARY:

Background: Little has been written about moyamoya disease and associated psychiatric manifestations in children. We discuss the case of a 13-year-old boy of Chinese descent who presented with the chief complaint of left arm weakness, as well as apparent behavioral changes. **Case:** The 13-year-old son of Chinese parents was brought to the hospital with intermittent inability to clench his left fist tightly or open his hand readily over the course of a week. His mother noted he was “not himself” lately and that he wore his clothes inside out on occasion. She believed to have seen the left side of his mouth droop. On the day of his emergency visit, he had trouble picking things up. In the week before his presentation, he had several profuse vomiting episodes, but no headache or visual disturbance. Cognitive/behavioral manifestation included “acting silly,” speaking slower than usual, repeating sentences, difficulty following commands, and difficulty finding things at home. There had been no significant medical illness, and early development was unremarkable. Physical examination confirmed weakness of the left upper extremity, as well as difficulty forming a tight fist with the left hand along with slight left facial droop. Diagnostic angiography showed bilateral “moyamoya pattern,” right worse than left. Psychiatric consultation was requested primarily to help discuss (with parents and child) and adjust to the possibly debilitating disorder and its manifestations. His parents are first-generation immigrants, with the child born in the United States. All clinical services used ample translation services, as to not burden the child. Targets for psychiatric intervention included acceptance of the diagnosis, facilitating adjustment to the acute illness, understanding treatment options, psychotherapy, and involving the family in the decision-making process given the cultural and linguistic barriers. **Discussion:** In children, psychiatric manifestation

associated with moyamoya disease are uncommon and include acute transient psychosis, schizophrenia and mania. Learning disability, attention deficits and cognitive impairment are also reported. The literature refers to the use of oxcarbazepine in the management of behavioral issues like hyperactivity, easy distractibility, hyperactivity, irritability, temper tantrums, and emotional lability. Literature review demonstrates the use of atypical antipsychotics in post-stroke psychosis in children with moyamoya disease. **Conclusion:** Few published reports mention the psychiatric manifestations of moyamoya disease. The relatively low incidence of the disease in children outside of Asia requires a high degree of suspicion should the condition present substantially with psychiatric symptoms. Our case illustrates neuropsychiatric symptoms in a newly diagnosed child, as well as challenges in their management.

No. 34

Association Between Poland Syndrome and Developmental-Behavioral Disorders: A Case Report

Poster Presenter: Muhammad W. Khan

Co-Authors: Riju Sanyal, Bennett Silver

SUMMARY:

Poland syndrome was the name coined by Sir Alfred Poland in 1841 when he identified a patient presenting with an absent costosternal head of the pectoralis major muscle and ipsilateral webbing of the fingers. The reported incidence of the condition ranges between 1 in 7,000 to 1 in 100,000 births and occurs more commonly in males (ratio 2:1). There are only 22 reported cases in the United States. In three out of four cases, the syndrome affects the right hemithorax unilaterally. The association between Poland syndrome and intellectual, developmental and behavioral disorders is a novel finding, with reports in medical literature few and far between. One such case report delineates this relationship, demonstrating a five-year-old Iranian boy affected by Poland syndrome with coexisting attention-deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD). This poster brings awareness to psychiatric and other medical professionals regarding this rare congenital condition and its potential for associated intellectual and behavioral disorders.

No. 35

Treating Catatonia in Adolescents: Medical, Ethical and Cultural Considerations

Poster Presenter: Michael T. Ingram Jr., M.D., M.S.

Co-Author: Jose Aguilar, M.D.

SUMMARY:

D. J. is a 17-year-old Hispanic male with a history of cannabis use who was admitted to the pediatric intensive care unit for acute-onset altered mental status with a two-month history of social isolation and odd behaviors highly suggestive of the prodromal phase of schizophrenia. On admission, D. J. presented unresponsive with bradycardia and low-normal respiratory rate. In addition, he was found to have non-rhythmic nystagmus and was actively resisting physicians' attempts to open his eyes. After extensive laboratory and imaging studies proved unremarkable with the exception of a positive THC on urine drug screen (UDS), our team felt catatonia was the most likely diagnosis. A major challenge presented when D. J.'s heart rate and respiratory rate remained low, making the use of benzodiazepines a relative contraindication. After three days of supportive treatment without clinical improvement, a challenge dose of Ativan 0.25mg by IV was initiated with mild improvement in responsiveness suggested by D. J.'s withdrawal to noxious stimuli. Given this improvement in symptoms and a subsequent increase in D. J.'s heart rate, another challenge dose of Ativan 1.0mg by IV was given with rapid resolution of all symptoms within about twenty minutes. D. J. was now alert, awake and oriented, with no recollection of how or why he was hospitalized, and was now requesting to leave the hospital. At this point, D. J. did not believe further treatment was necessary and was arguing with his mother about leaving the hospital against medical advice. The psychiatric consult team faced a challenging ethical dilemma when D. J., a minor, began using coercive persuasion to convince his family to take him home without medications and against recommendations to stay in the hospital for continued treatment and monitoring. In this poster, we discuss an atypical presentation of catatonia in an adolescent, the importance of early recognition and treatment of an underrecognized syndrome in adolescents, and how the stigmatization of mental

illness in certain cultures, religions or individual families creates barriers to treating minors with mental illness.

No. 36
Conversion Disorder in Children After Traumatic Brain Injury

Poster Presenter: Atika Zubera

Lead Author: Juvaria Anjum

Co-Author: Tolga Taneli

SUMMARY:

Objective: Explore the relationship of traumatic brain injury and conversion disorder in children and its impact on treatment and prognosis, review the literature on conversion disorder in children after traumatic brain injury, and explore characteristics of traumatic brain injury in relation to conversion disorder and support the implementation of routine clinical assessment. **Case:** We present the case of a 13-year-old girl who presented with involuntary movements one week after head injury at her school. She had loss of consciousness, but no memory loss. She reported right neck and face movements with right upper extremity weakness during sleep. She had been diagnosed with impulse control disorder four years earlier. Physical and neurological examination, as well as routine EEG, were normal. Her mental status was unremarkable. A literature review revealed the case of an 11-year-old boy with conversive hearing loss after mild head trauma. One week after presentation, the child's hearing abruptly returned after a second minor head injury. Conversion disorder is considered the most common cause of non-epileptic seizures. Such events have been reported on the first day after head injury or shortly thereafter. **Conclusion:** Our case and literature review suggest that there is an association between head injury and conversion disorder. The presence of conversion symptoms requires not only exclusion of neurological and medical disorders, but also other psychiatric conditions. Children with conversion disorders are likely to develop mood and anxiety disorders. Treatment with regular outpatient follow-up and multidisciplinary rehabilitation focusing on improving the patient's level of functioning and reducing their subjective distress may be the most effective treatment at present. Conversion

phenomena benefit from psychotherapy, but a support system is also needed.

No. 37
Love and Aggression in an Internationally Adopted Child: A Case Report and Review of Related Literature

Poster Presenter: Jasmin G. Lagman, M.D.

Co-Authors: Anu Upadhyay, M.D., Wun Jung Kim

SUMMARY:

Intercountry adoption poses a risk of development of severe psychiatric disorders among adoptees, yet this has not stopped people from adopting children from countries other than their own. Some adoptive parents prefer to adopt babies, while others adopt preschool children. The majority of the older placed children have generally suffered from history of abuse, neglect or rejection prior to adoption. We present a 12-year-old male adopted from a foreign country by a single mother who has no child. He is clingy and loving, but suspicious, questioning and very aggressive toward his adoptive mother. His symptoms were severe enough to warrant four hospitalizations in the eight months since he came to the U.S. His unpredictable behavior, impulsivity and aggression toward her made the adoptive mother fear for her own safety. On his fourth hospitalization, the patient was already on five different psychotropic medications, which were all started here in the U.S. The adoptive mother was not provided with the patient's past history and was limited to the patient's recall. He shared history of physical and emotional abuse, neglect and multiple placements prior to adoption. At the wards, he was diagnosed with an anxious/ambivalent attachment type, PTSD and severe mood disorder. Polypharmacy was addressed. Realizing the issues of attachment, the need for patient and adoptive mother to strengthen their relationship and build trust was emphasized. This created a dilemma to the treatment team when disposition was discussed. One of the recommendations was to discharge him at a residential placement, risking the adoptive mother and child's relationship due to prolonged separation. Another recommendation was to discharge the patient back home with the mother. However, this second option carried the risk of endangering the safety of the adoptive mother and

the patient himself. It was therefore decided to refer him to a residential placement. It is not uncommon that a diagnosis of attachment disorder is given to adopted children, but misuse and poor understanding about it can be detrimental to the patient and pose problems for those working with adopted patients. For true attachment issues, treatment is complex and can be overwhelming to the treatment team. This poster discusses the common psychopathologies in internationally adopted children, with an emphasis on attachment disorders. It also discusses the challenges faced by the mental health professionals working with adoptees and the available resources in the community.

No. 38

Anti-NMDA Receptor Encephalitis Presenting as a Primary Psychotic Disorder: An Adolescent Case Report

Poster Presenter: Michele Nelson, M.D.

Co-Author: Jeannie Lochhead, M.D.

SUMMARY:

Anti-N-methyl-D-aspartate receptor (NMDAR) encephalitis is an immune-mediated disease that is underrecognized. Commonly paraneoplastic in origin, a majority of cases in the pediatric population are idiopathic. Initial presentation can include prodrome of flu-like illness, psychiatric symptoms (depression, psychosis) and neurologic symptoms (orofacial dyskinesias, seizures, agitation). Diagnosis is made with detection of NMDAR antibodies in the cerebrospinal fluid. Early treatment is imperative for good prognosis. We describe a case of an adolescent patient without any identified tumor with psychotic symptoms, initially misdiagnosed with a primary psychotic disorder. Her early course of illness, diagnostic process and treatment is described. This case demonstrates the need for diagnostic suspicion when approaching the patient with an abrupt onset of psychotic symptoms or suspected viral encephalitis and the importance of multidisciplinary treatment.

No. 39

Left-Behind Children: The Lost Children of China's Industrialization Waiting to Be Found

Poster Presenter: Yu-Chia A. Chen

Co-Author: Benjamin K. P. Woo, M.D.

SUMMARY:

Background: Left-behind children are a unique population, comprising 61 million children, that has emerged in rural China and is receiving increasing attention in recent years. Left-behind children are children under the age of 18 whose parent or parents have left their rural homes in search of work opportunities in larger cities and could not afford to bring their children with them due to public benefit limitations. It has been reported that depression rates and negative health behaviors are higher in left-behind children. We performed a review of English literature available on this population, with a focus on risk and protective factors. **Methods:** We performed a literature review using PubMed, Google Scholar and Trip Database with MeSH terms "left-behind children" and "left behind children." We filtered for English language. Exclusion criteria included studies in countries other than China and articles that strictly focused on nutrition, health, societal factors, and education. After applying our selection criteria, we found 21 articles that focused on psychiatric and psychological aspects of the "left-behind" experience. After careful review of each article, we collected relevant and important information. **Results:** Most studies were cross-sectional, with sample sizes ranging from hundreds to thousands. Geographic spread ranged from midwest to northeast China. Outcomes were measured using various scales; some were standardized, while others were researcher-designed. We found that the majority of the literature focused on nutrition and health of this vulnerable group. Some articles addressed psychiatric and psychological topics, and only a few articles reported on social policy and educational outcomes of left-behind children. We found that risk factors for higher depression rates included absence of parents, both parents migrating, low frequency of parent-child communication, poor relationships with parents, being brought up by grandparents, poor self-concept, and low level of social support. Protective factors included high frequency of parent-child communication, positive teacher-student relationships and high level of social support. **Conclusion:** Large-scale studies have been conducted across wide geographic regions of China.

Due to the inconsistencies in tools used for the measurement of outcomes, there is yet a consensus of depression rate among left-behind children, though it is clear that the depression rate of this population is elevated compared to their cohort. In addition, there may be geographic subgroups with distinct characteristics, since China's vast and diverse landscape and climate generate different cultures. Some studies have begun to investigate variables that moderate depression in left-behind children. These findings reflect the complicated dynamics of a "left-behind" experience, from a child's internal mental state to the external environment, providing multiple potential points of intervention.

No. 40

A Case of Infant Brain Injury and Behavioral Disturbance

Poster Presenter: Tarek Aly, M.D.

Co-Authors: Adel Nesheiwat, Nirali Dave, Ninoshka Lobo, Charles Wilson, Asghar Hossain

SUMMARY:

Historically, hypoperfusion in the temporal region has been observed in individuals with autism spectrum disorder. In a study done in 2002 involving data from PET, MRI and SPECT scans of autistic children, about 77% of the scans showed considerable temporal hypoperfusion—mostly found to be bilateral—yet that isn't the case in this report. We present a case of an eight-year-old female with a prior history of being diagnosed with unspecified bipolar-related disorder and high-functioning autism spectrum disorder with a history of bilateral temporal hypoperfusion secondary to traumatic brain injury suffered in infancy. She has no prior history of inpatient psychiatric hospitalization. The patient presented to the emergency department with suicidal ideation secondary to command type auditory hallucinations. She had been exhibiting temper tantrums, anger outbursts, defiance, and self-injurious behaviors a few days prior to admission. After an altercation with her sister, the patient grabbed a knife to kill herself but was stopped by her sister. This event reflected multiple previous attempts also characterized by command type auditory hallucinations telling her to kill herself. We present her course of hospitalization, optimized treatment regimen and challenges faced therein.

No. 41

Lyme Disease and Derealization in the Pediatric Patient

Poster Presenter: Tarek Aly, M.D.

Co-Authors: Kaveer Greywal, Lara Adesso, M.D., Asghar Hossain

SUMMARY:

Background: Two notable and well-documented sequelae of chronic Lyme disease are symptoms of depersonalization and derealization.

Neuroborreliosis has also been demonstrated to lead to a wide range of psychiatric sequelae. While the pathophysiology of Lyme-induced depersonalization or derealization has yet to be determined, these cases are typically found in patients with chronic untreated disease. **Case:** A 13-year-old male with a current history of Lyme disease and a remote history of current history of major depressive disorder without psychotic features presents to the ED with acute derealization. The patient states "it's hard for me to distinguish reality from dreams." He was diagnosed and successfully treated for Lyme disease at age eight, but in the days preceding presentation, he began to doubt if he was alive and endorsed suicidal ideation to test his doubts. He was admitted to an inpatient unit and stabilized on psychiatric medications alone. **Discussion:** While Lyme disease has long been known to lead to symptoms of depersonalization and derealization, clinicians need to maintain a high clinical suspicion that acute mental status changes consistent with depersonalization/derealization disorder may have a remote medical cause, even in patients who without chronic or untreated Lyme disease.

No. 42

A Guide to Bullying Intervention

Poster Presenter: Sina Shah-Hosseini, M.D., M.S.E.

SUMMARY:

As awareness of bullying and cyberbullying behavior among school-aged children has increased, the need to examine the effectiveness of school-based intervention programs as a preventative measure has become more important. The increased number of publications addressing this issue provides investigators with the opportunity to analyze

findings across multiple studies using meta-analysis techniques. This meta-analysis was conducted using peer-reviewed research studies published between 2009 to 2014. Using our inclusion criteria, eight studies conducted in five countries were identified. The studies examined 326,900 student participants (grades 1–12) and 1,225 teacher participants, measuring outcome changes in 24 variables. Effect sizes were calculated for each variable using Cohen's d method to determine whether any meaningful changes occurred. Using traditional meta-analysis statistical methods, the effect sizes of bullying interventions demonstrated significant positive effect size (ES=0.20) in almost half (11 of 24) of measured variables. Most of the significant changes observed reflected improved attitudes and increased knowledge about bullying, though a modest meaningful change was also seen with regard to bullying behavior (ES=0.33) and verbal bullying (ES=0.62). Significant changes were also seen in reports of cyberbullying (ES=0.38) and cybervictimization (ES=0.45). The remaining student self-reported variables did not show meaningful effect size changes. These included self-report of victimization, feeling safe at school, empathy toward bullying victims, and self-efficacy for defending victims. Additionally, the only peer-reported variable mean that showed a change was coping with problem solving (ES=0.21). The remaining peer-reported variables did not show any meaningful change, including reports of bullying, victimization, cybervictimization, and bullying avoidance. Teacher-reported variables showed a significant change in witnessing both direct (ES=0.31) and indirect bullying (ES=0.34). While school-based bullying and cyberbullying intervention programs have been shown to produce modest positive outcomes, including decreased bullying behavior and increased knowledge, a majority of variables did not show any significant change.

No. 43

Neuropsychiatric Assessment of Adolescents With Post-Concussion Syndrome Before and After the Implementation of a Novel Active Rehabilitation Protocol

Poster Presenter: Lorin T. Mowrey

Co-Authors: Zachary Oleskey, Mohammad Mortazavi, M.D., Jennifer Andrews, Ph.D.

SUMMARY:

Background: Patients with concussion symptoms beyond two weeks after the initial injury are diagnosed with post-concussion syndrome (PCS). Adolescents may have longer recoveries. There is no standard PCS treatment. Recent studies show a potential for light exercise to facilitate recovery. These studies are loosely constructed and contain small sample sizes with broad age ranges. Our study expands upon prior knowledge by implementing a systematic and aggressive active rehabilitation (AR) protocol in a diverse sample of adolescents at nearly double prior sample sizes. **Methods:** A sample of 18 13–18-year-old adolescents with PCS was enrolled in AR no earlier than three weeks after concussion at our pediatric sports medicine clinic. Demographic data included ethnicity, activities and histories. The Depression, Anxiety, Stress Scale (DASS) was used to assess symptom severity. The symptom severity scale of the Sport Concussion Assessment Tool 3 (SCAT-3) was used to assess symptom type and low, moderate or high severity. DASS and SCAT-3 were used throughout AR. Subjects all visited clinic once per week for clinical evaluation and for treadmill monitoring. AR began at 50% maximum heart rate (MHR) for 10 minutes. AR target MHR rose weekly by 10% through 90%. Duration increased one minute each week. A five-minute warm-up and cool-down was used. If tolerance was poor, MHR stayed the same. Subjects had five bouts per week. **Results:** The sample consists of 44% Hispanic, 56% male and 83% athletes, with a mean age of 15.74 (13.07–17.36). Mean weeks between concussion and enrollment was 6.01 (2.57–22.00), and mean weeks in AR was 5.91 (2.00–10.00) for 17 participants. Baseline DASS demonstrated 42% of subjects with stress, 24% with anxiety and 25% with depression. Post-treatment DASS was available for seven, and the total DASS between baseline (21.86, SD=19.420) and after treatment (12.14, SD=14.496) was significantly decreased. No significant differences were found in the DASS subscales, but all means decreased. Thirty-eight percent of subjects had a history of psychiatric problems and/or ADHD, and 44% had family histories of psychiatric problems. 100% of all subjects presented with psychiatric and/or ADHD symptoms. Paired sample statistics showed a significant ($p<0.05$) decrease in SCAT-3 from before

(15.47, SD=8.217) to after (5.65, SD=5.578) treatment. SCAT-3 moderate (3.47 to 1.12) and severe (2.12 to 0.29) symptoms significantly decreased. Mild (2.29 to 2.53) symptoms increased. Forty-four percent of subjects returned to pre-concussion health after AR. Scores in psychiatric (1.8235–0.5294), neurocognitive (5.0588–1.3529) and mixed (6.3529–1.8824) SCAT-3 symptom categories all had significant ($p < 0.05$) differences before and after treatment. **Conclusion:** Prospective evidence for the efficacy of AR in adolescents with PCS is shown. The study is restricted to adolescents, highlights the efficacy of weekly monitoring, is 44% Hispanic, and shows 44% experiencing complete symptom resolution, with 100% experiencing significant improvement.

No. 44

Untreated Gender Dysphoria Associated With Severe Depression in the Adolescent Population: A Case Report

*Poster Presenter: Ulfat Shahzadi, M.D., M.B.B.S.
Co-Authors: Tawnya Pancharovski, Edward Hall, M.D., Asghar Hossain*

SUMMARY:

Background: Gender dysphoria is a condition where a person experiences discomfort or distress because there's a mismatch between their biological sex and gender identity. It's not known exactly how many people experience gender dysphoria because many people with the condition never seek help. It is estimated that about 0.005 to 0.014% of males and 0.002 to 0.003% of females would be diagnosed with gender dysphoria, based on current diagnostic criteria. Studies investigating the prevalence of psychiatric disorders among transgender individuals have identified elevated rates of psychopathology. People attending transgender health care services appear to have a higher risk of psychiatric morbidity (which improves following treatment) and thus confirms the vulnerability of this population.

Objective: Highlight a case of gender dysphoria associated with severe depression and review available literature to find similar or other reported cases of association of depression with gender dysphoria and their management in an acute setting.

Case: A 17-year-old biological Caucasian male who identifies himself as female was brought to the

emergency room with severe depression and suicidal ideation and self-injurious behavior. On evaluation, it was found that the root cause of the patients' depression was his family not accepting and supporting his gender identity crisis. While in the hospital, the patient was treated with an antidepressant, group activities and psychotherapy sessions. The patient's symptoms improved, and he stabilized and was discharged to his father's care. **Discussion:** Gender dysphoria (GD), gender identity disorder and transsexualism are medical terms used interchangeably for the anxiety, confusion or discomfort produced for some people by birth gender. Those who feel they have been born into the wrong gender are often aware that there is "something wrong," usually early in childhood. Even as children, they feel different from their peers and uncertain about their identity. While educational programs in schools and a better knowledge base in counselling and related training curricula are indicated, gender dysphoric clients, before and after transition, experience common life problems for which generic forms of counselling and therapy are appropriate. **Conclusion:** Social support, adequate counseling and therapy, and treatment of the comorbid psychiatric conditions underlie the main approach in the treatment of gender dysphoria to reduce symptomatology.

No. 45

Can Bullying Lead to Development of Dissociative Identity Disorder?

*Poster Presenter: Lara Adesso, M.D.
Lead Author: Sameerah Akhtar, M.D.
Co-Author: Asghar Hossain*

SUMMARY:

Background: Bullying victimization among school-aged children is an increasingly prevalent problem affecting well-being and social functioning. Children and adolescents who are victims of bullying have long exhibited signs of distress and adjustment difficulties. One study reviewed research for empirical evidence to determine if bullying victimization is a significant risk factor for developing psychopathologies. The research obtained from said study indicated that being the victim of bullying is associated with severe symptoms of mental health problems, including self-harm, violent behavior and

psychotic symptoms. Furthermore, bullying can lead to long-lasting effects, which may persist until late adolescence and contribute independently to the youth's mental health difficulties. Recognizing the marked deleterious effects of bullying on victims' mental health demonstrates the urgency for intervention. **Objective:** This study concentrates on the potential of victimization from bullying leading to development of dissociative identity disorder. Evidence from multiple case studies is evaluated for multiple cases of bullying leading to psychological wounding and development of various psychiatric illnesses. **Case:** We report a case of a 15-year-old female of Middle Eastern descent with past medical history of depression and prior history of eating disorder and dissociative identity disorder who presented to a local hospital due to unwitnessed suicide attempt via intentional overdose. The patient reported worsening of depression due to physical abuse inflicted by peers at school. Physical abuse consisted of cutting the patient's thigh in exchange for cigarettes and hookah use. Reported abuse led to decompensation of depression and symptoms of suicidal ideation, early insomnia, and feelings of guilt, hopelessness and helplessness. **Conclusion:** Children and adolescents who become victims of bullying tend to develop mental health issues. With further research and understanding of the psychological aftereffects of bullying, greater screening and mediation can become feasible. A proactive and efficient approach on behalf of mental health professionals, parents and mentors may yield progressive prognosis for psychologically scarred victims.

No. 46

Relationship of Resiliency Factors to Characteristics of Adolescent Psychiatric Inpatients: A Pilot Study

Poster Presenter: Tenzing Yangchen

Lead Author: Shady S. Shebak

Co-Author: John E. Vance

SUMMARY:

Objective: Extend existing research on the moderating effects of certain protective and resiliency factors in naturalistic longitudinal studies of resilient high-risk individuals by exploring whether self-reported protective factors are associated with features and severity of psychiatric illness in

adolescents. **Methods:** Study population included youth between the ages of 12 and 17 admitted to the Carilion child and adolescent psychiatric inpatient unit between the years 2013–2015. The patients were asked to complete a Youth Resiliency Checklist (YRC) upon admission as a routine clinical assessment. We randomly selected 106 of these patients for this pilot study, de-identified the patients with a set coding process and conducted a chart review on the patients on EPIC. The YRC data were simultaneously numerically entered into a database, and the EPIC chart reviewer was masked to the YRC results. Youths younger than 12 at the time of completion of the YRC or those who were unable to read, comprehend and autonomously fill out the YRC were excluded from the study. Comparisons were analyzed with ANOVA and Tukey test. **Results:** A highly significant relationship ($p=0.0067$) was found on one-way ANOVA between the outlooks subscale and length of hospital stay (LOS). Those whose LOS was 11 or more days ($N=18$) had a significantly lower mean outlook score than those whose LOS was one to five days ($N=27$; 13.39 vs. 19.19). A significant relationship ($p=0.0393$) was found on one-way ANOVA between social skills and number of hospitalizations. A trend toward significance ($p=0.0583$) was found between outlooks and number of hospitalizations. **Conclusion:** There is a significant relationship between future outlooks and length of hospital stay and between social skills and number of hospitalizations. If we can gather more data and continue to show this relationship, we may be able to target these factors to prevent future hospitalizations. Pending IRB approval, we will be expanding the sample size to include outpatients from the Michigan State University outpatient clinic.

No. 47

The Impact of Fetal Alcohol Syndrome and High Expressed Emotion on an Adolescent With Behavioral Disturbances

Poster Presenter: Natalie Seminario

Co-Authors: Kathleen De Wyke, Jaya Gavini, Rubina Sharief

SUMMARY:

We report the case of a 13-year-old Caucasian male with an extensive past medical and psychiatric history who presented to the child/adolescent unit

for multiple episodes of physical, verbal and sexual aggression and agitation toward his mother along with legal charges for assaulting her. Our patient was born with fetal alcohol syndrome and had multiple medical comorbidities, including diabetes mellitus. The patient's mother does not admit or deny any alcohol use during her pregnancy, but it was confirmed through his records. The patient meets the criteria for fetal alcohol syndrome, as he did have prenatal growth deficiency, has the facial features and has functional impairment. Our patient comes from a very unstable and tumultuous family unit where he is exposed to a high degree of expressed emotions, verbal disputes and physical aggression. The patient is often the victim of high expressed emotion, mainly from his mother. Her disparagement not only elicited reactions from the patient, but encouraged the other members of the family unit to criticize the patient. This positive feedback loop tended to continue until the patient was no longer able to control himself and reacted in aggression. These behaviors were noted in family meetings, family weekend activities, and visitations. As a result, the patient was further negatively impacted, as he will likely continue to develop poor coping skills, maladaptive behaviors and mood symptoms. The patient's maladaptive behaviors, poor judgment, distractibility, and difficulty perceiving social cues were observed when he interacted with his peers and staff on the child/adolescent unit. The patient's behavior tended to escalate as he was constantly redirected, scolded, punished, and placed in the isolation room. Patients born with medical conditions that propagate psychopathology require a higher level of treatment. Our patient was born with predispositions to neuropsychological and behavioral issues. His environment was never conducive to developing appropriate relationships at home or coping skills. In the presence of a stable environment and early diagnosis, escaping poor outcomes can be increased by two- to four-fold. Unfortunately, the dynamic of the home environment of our patient will likely contribute to the long-term progression of the disorder into adulthood, in which maladaptive behaviors will be the most difficult to manage.

No. 48

The Uncertainty of Life: Psychosis and Cancer

Remission

Poster Presenter: Natalie Seminario

Co-Authors: Kathleen De Wyke, Rubina Sharief, Jaya Gavini

SUMMARY:

We report the case of a 13-year-old Hispanic female who presented to the child/adolescent unit with command type audio hallucinations and suicidal ideation for one month. The hallucinations and ideations began shortly after the patient's round of annual chemotherapy for a childhood hepatic carcinoma. The command type voices encouraged the patient to kill herself by cutting her wrists with a knife. The patient reported feeling depressed for four months and elicited symptoms such as depressed mood, anhedonia, increased sleep, and increased appetite. The patient reported remission for over ten years and denied any other medical health issues. Childhood cancer is a traumatic life experience for children and their parents. While our patient was successfully treated with no long-term residual symptoms as a result of the cancer, she is forced to address the matter yearly as she receives an annual chemotherapy treatment once school has been dismissed for the summer. The patient reported feeling happy and demonstrated impressive coping skills regarding her past medical history and experiences as she intellectualized many obstacles in her life, but was unable to hide her depression and anxiety. One study reported that 53% of patients and their parents exhibited symptoms of PTSD, depression or anxiety following a diagnosis of cancer. Notably in the same study, children with low-risk disease exhibited more severe symptoms than those with moderate-risk disease. The causes of traumatic stress responses were identified to be particular experiences and procedures. Neither our patient nor her family exhibit symptoms of PTSD at this time, but the patient has a baseline level of anxiety regarding her medical health status. While our patient was mature beyond her years and lived a healthy life within a stable, loving family unit, her vulnerabilities lie in her baseline anxiety and the uncertainty every year brings regarding her health status. Illness uncertainty has been found to decrease quality of life in childhood cancer patients. Her burst of stress and associated elevated cortisol would likely

contribute to her psychosis and depressive mood symptoms. All of these vulnerabilities, along with stressors including the uncertainty of her health, contributed to the development of short-term psychosis in our patient.

No. 49

The Importance of Collaboration Between Medicine and Psychiatry in Persistent Psychosis Following a Single Ingestion of Ecstasy

Poster Presenter: Natalie Seminario

Co-Authors: Ananya R. Sreepathi, M.D., Asghar Hossain

SUMMARY:

We present the case of an 18-year-old Hispanic female who presented to the ER after an episode of agitation and aggression toward her parents, along with symptoms of psychosis that had a one-month duration after a single ingestion of ecstasy. Prior to this drug ingestion, the patient had no previous psychiatric history, medical history, history of substance abuse, or family psychiatric history. The patient's parents reported that the patient was at prom when a classmate drugged her drink with ecstasy. Within a few minutes, the patient reported feeling panicked, scared and paranoid. The patient became aggressive, agitated, paranoid, and delusional. Even after her urine toxicology results were negative, psychosis persisted. On admission, the patient's labs showed elevated troponin I, CKMB, CKI, AST, and ALT, all of which continued to increase for 24 hours before normalizing after a 48-hour observational stay on the critical care unit. The patient was transferred to the psychiatric inpatient unit. On the unit, the patient was aggressive, agitated, paranoid, delusional, and noncompliant with medications. The patient was admitted for two weeks before she complied with medications and her symptoms began to decrease and her insight and judgement improved. Once discharged, the patient was in acute partial hospitalization, but quickly decompensated as she became noncompliant with medications. Ecstasy is considered "safe" among young adults of all socioeconomic statuses, which leads them to overlook potential medical issues. The possible oversight of medical and psychiatric complications is dangerous, as there are multiple issues associated with the use and toxicity of

ecstasy. As seen in this patient, ecstasy has a wide range of medical and psychiatric effects. Ecstasy is associated with psychosis, rage, paranoia, and suicidal ideation, along with atraumatic rhabdomyolysis, cardiac arrhythmias, liver failure, renal failure, and coma. This patient is a prime example of the importance of medical and psychiatric collaboration. This case report will explore a psychosis-inducing single use of ecstasy, the need of extreme caution of potential medical comorbidities and the most successful psychiatric treatment modalities.

No. 50

Integrating Behavioral Health and Primary Care in Two New Jersey Federally Qualified Health Centers

Poster Presenter: Kristin Budde

Co-Authors: Kemi Alli, Dovid Friedman, Barbara Kang, Joan Randell, Seth Feuerstein

SUMMARY:

Background: Improving access to behavioral health care is critical to serving the one in four Americans who will suffer from mental health or substance use problems. This poster documents a unique model for integrating behavioral health services into two federally qualified health centers (FQHCs) in New Jersey. **Methods:** The pilot project, funded by a grant from The Nicholson Foundation, offers a lens through which to explore the unique challenges and opportunities faced by FQHCs serving very different populations. Data were gathered from a review of planning documents and key staff member interviews. **Results:** The behavioral health services provided through this project were comprehensive and included behavioral health care, substance use treatment, chronic disease management, and computerized cognitive behavior therapy. Moreover, this initial rollout sets the stage for an eventually self-sustaining care delivery model. Although many changes to health center structure and staffing were required, building on existing infrastructure allowed substantial progress toward implementation of an integrated care system in a year's time. **Conclusion:** The barriers and opportunities facing FQHCs wishing to integrate behavioral health services will vary; this project will provide a blueprint by which comprehensive behavioral health care can be added to existing medical clinic services.

No. 51

Prospective Correlates of Early Readmissions on a Cardiothoracic Surgery Service

Poster Presenter: Mansi Chawa

Co-Authors: Mark Ketterer, Gaetano Paone

SUMMARY:

Background: Early (30-day) readmissions have become a major index for measuring quality of care by CMS. Early readmission has been found to be associated with higher mortality and is suspected to frequently be due to inadequate discharge preparation/planning. Various risk factors responsible for hospital readmissions have been studied in the past, but psychosocial factors have been given very little attention to date. Recent work has found cognitive impairment to be the strongest predictor of early readmission in patients with congestive heart failure. **Objective:** Examine putative preoperative risk factors responsible for early (30-day) readmissions in hospitalized patients on the cardiothoracic surgery service. **Methods:** This was a prospective observational study. Eighty patients (M:F=20:60) admitted to the inpatient cardiothoracic surgery unit were recruited. Delirious patients or those with encephalopathy were not included. Chart review and a semi-structured interview were conducted to determine clinical and demographic details. Patients were administered the Mini-Cog for assessment of CI, the patient health questionnaire (PHQ-9) for assessment of depression and the generalized anxiety disorder scale (GAD-7) for generalized anxiety. Thirty-day follow-up was maintained through chart review and making phone calls to check for readmissions to any hospital facility after discharge. All analysis was done using SPSS.

Results: Mean age was 65.9; average number of years of education was 13.3. A substest of the Mini-Cog, Short-Term Memory, was the strongest univariate predictor of early readmissions ($p < 0.001$), but the overall Mini-Cog ($p = 0.024$), age ($p = 0.045$), number of admissions over the preceding year ($p = 0.036$), an anxiety scale ($p = 0.035$), years of education ($p = 0.055$), and a depression scale ($p = 0.056$) also demonstrated covariation. In a logistic regression, only short-term memory survived as a predictive variable ($p = 0.008$), correctly classifying 76% of patients. Gender, positive head scan, BUN, a

history of an arterial $PO_2 < 40$, history of substance abuse, psychiatric treatment history, number of comorbidities, ejection fraction, and the specific cardiothoracic procedure all failed to achieve significance. **Conclusion:** Chronic cognitive impairment is a predictor of early readmissions in cardiothoracic surgery patients. A brief bedside exam interpreted in medical context may permit identification of patients requiring familial assistance for adherence to treatment on discharge.

No. 52

Improving Psychiatric Outcomes With Integrated Care

Poster Presenter: Adeyemi Marcus, M.D.

Co-Authors: Anil K. Bachu, M.D., Gabriela Feier, M.D.

SUMMARY:

Background: With increased demand for psychiatric services, there is a greater demand on managing psychiatric illness in non-specialty settings. One such solution to this demand is integrated care in the primary care setting. The reason this solution is so attractive is that a high percentage of patients in primary care require mental health services, and a high percentage of mentally ill patients rely solely on their primary care physicians for psychiatric services. This combination suggests that integrated care could improve the access to psychiatric services and potentially improve psychiatric outcomes in a population that consists generally of high utilizers of medical services. **Methods:** We will present a resident experience of the benefits of integrated care in the primary care setting. Our study will take place over a six-month period from September 2016 to February 2017 in the family practice clinic at Metro Health hospital. We will explain the integrated care model, reporting the number of patient encounters and the effect on psychiatric outcomes through rating scales. We will also discuss the appointment and medication compliance we discover and the effect integrated care has on the utilization of medical services. **Discussion:** Our literature review revealed many articles published about integrated care. Cummings' research suggested that many patients rely mainly on their primary care physician to handle their mental health issues, with only 10% of patients being referred to psychiatry making their appointments. The

familiarity of the primary care setting makes integrated care a powerful approach to increasing access to mental health services. Research by Conwell reports that 43 to 76% of older adults who committed suicide had visited their primary care physician within the month prior to their death. Decreasing mortality and improving psychiatric outcomes is a great benefit of integrated care. Finley et al. reported that improving outcomes were reflected in decreased utilization of medical services. **Conclusion:** We believe that integrated care has the power to change how we practice psychiatry and also decrease the stigma of mental health through education. We hope to support this theory through our study and show that patients' psychiatric issues improve and compliance is aided by the familiarity of the primary care setting.

No. 53

Catatonia With Underlying Pulmonary Embolism. A Complex Presentation of a Patient With Catatonia

Poster Presenter: Audrey M. Rossowski, D.O.

Co-Authors: Cedrick Barrow, D.O., Carolina Retamero, M.D.

SUMMARY:

Background: Catatonia is a neuropsychiatric state that uniquely presents with psychomotor and behavioral dysregulation. Although classically described as a type of schizophrenia, it may also present in the setting of a severe mood disorder. Other known causes of catatonia include metabolic disorders, organic conditions and neurological disorders. Catatonia is marked by prominent psychomotor disturbances, which may fluctuate between extremes of hyperkinesia and stupor to negativism. Its presence in psychiatric patients severely compromises the ability of the caregiver to adequately evaluate and treat their patients' primary and underlying condition. **Case:** A 33-year-old male with schizoaffective disorder with recurrent catatonia and past medical history significant for possible neuroleptic malignant syndrome was admitted to the inpatient psychiatry floor for depressed mood and inability to care for self. Vital signs were unremarkable except for sinus tachycardia. Extensive medical and neurological workup, including blood test, brain CT and brain MRI, was unremarkable. Although initially

responsive to intramuscular lorazepam, he failed to respond to lorazepam by mouth, and electroconvulsive therapy (ECT) was started. After the first ECT session, the patient was found to be tachycardic and tachypneic with a pulse oximetry saturation in the low 90s. A CT pulmonary angiogram revealed a saddle pulmonary embolism. The patient was then appropriately anticoagulated, and intramuscular lorazepam was reinitiated with subsequent improvement of symptoms. **Methods:** Retrospective chart review and a PubMed search were conducted using the terms "catatonia," "catatonia induced pulmonary embolism," "organic causes of catatonia," and "presentations of catatonia." **Discussion:** This case illustrates the difficulty in treating catatonic patients and how the catatonic state presents a significant risk to patients' overall health. Initially, our patient's symptoms could not be explained by any medical cause, and symptom improvement was only seen after the administration of benzodiazepines. Catatonic states often impede the clinician's ability to effectively examine and treat patients and have the potential to mask more serious complications. Immobility poses an increased risk for developing deep vein thrombosis (DVT) and pulmonary embolism (PE). This case underscores how critical it is to evaluate the need for preventative measures in this particular patient population, who are oftentimes unable to convey their symptoms, and to practice integral medicine with high communication and collaboration with medical teams.

No. 54

Dermatopsychiatry Pilot: An Integrated Teaching Clinic

Poster Presenter: Kristina Glover, D.O.

SUMMARY:

Background: Skin is the largest organ on a person's body, and diseases of the skin can have a dramatic impact on an individual's psychological well-being. In some cases, a patient's psychological distress will exacerbate or even create a dermatologic condition. The emerging field of dermatopsychiatry focuses on the complex relationship between skin and the mind. Patients who may be referred to this type of integrated clinic fall into several categories, including 1) primary psychiatric disorders but no primary skin

condition (i.e., delusions of parasitosis, neurotic excoriations); 2) primary skin disorders with secondary psychiatric conditions (i.e., acne, vitiligo); and 3) those with a secondary skin condition from psychotropic medications (i.e., lithium-induced psoriasis) or those who develop psychiatric disease as a result of medications for dermatologic conditions (i.e., isotretinoin, corticosteroids). Various working models exist in which the combined care of dermatology and psychiatry can be delivered. The dermatologist, after finishing their evaluation, refers the patient to a psychiatrist who is in another location. Alternately, the psychiatrist may act in a liaison capacity only, consulting with the dermatologist regarding the patient's care but not performing an evaluation of the patient. While both of these approaches are advantageous in different ways, they lack the comprehensive team approach of a fully integrated clinic model, as in this pilot.

Methods: Each patient visit was preceded by a primary dermatology visit, and all patients were willing referrals to the integrated clinic. Visits were conducted in the dermatology clinic as combined encounters with dermatology and psychiatry residents performing the exams concurrently. After each encounter, all patients were staffed with the team consisting of two dermatology residents, two psychiatry residents and a supervising attending from each specialty. The approach to all patients was collaborative; recommendations were discussed in detail with the patient from both a dermatologic and psychiatric standpoint. After the initial consultation, patients were scheduled for follow-up at the combined clinic within the next one to two months or referred individually to dermatology or psychiatry as needed.

Discussion: Advantages to this approach include the mutual education of colleagues, as well as the ability to address the needs of a difficult to reach population in an empathetic manner while building doctor-patient relationships. We present this dermatopsychiatry clinical service pilot as a potential high-quality integrated care model for patients with complex comorbid skin and psychiatric presentation, which has the capacity to offer a more comprehensive and holistic approach to total patient care.

No. 55

A Mindfulness-Based Intervention for Nonepileptic

Seizures

Poster Presenter: Farha Motiwala

Co-Authors: Zubeda Sheikh, Douglas J. Opler, M.D.

SUMMARY:

Background: Psychogenic non-epileptic seizures (PNES) are a frequent reason for psychiatric consultation, are highly comorbid with epilepsy and can be difficult to confirm. Epileptic seizures on vEEG do not exclude PNES outside the monitoring period. Engagement of the patient with PNES can be initiated during the psychiatric consultation, but further treatment is often deferred to postdischarge care. Studies have shown mindfulness to be of use in epilepsy and PNES. Therefore, mindfulness-based interventions (MBI) represent an inpatient treatment option in PNES, whether or not PNES have been confirmed or epilepsy has been ruled out. We present a case of a brief MBI for a patient with PNES.

Methods: We present a case report, electronic medical records review and literature review.

Case: A 57-year-old female with major depressive disorder, hypertension, diabetes mellitus, and thyroidectomy was hospitalized repeatedly over 2.5 years for angioedema and PNES. Non-epileptic events were confirmed on vEEG. She was re-admitted from the ED for management of angioedema requiring intubation. Following extubation, staring episodes occurred, which were felt to be atypical of epileptic seizures. Seven MRIs of her brain over prior admissions had been negative. Given the potential for comorbid epilepsy, phenytoin was changed to levetiracetam by the neurologist. On exam by psychiatry, she reported that seizures worsened over the past year following losses of family members. She stopped attending outpatient psychiatric care one year ago. On recommendation of the psychiatry service, trazodone 50mg nightly was started, sertraline was restarted and titrated to 200mg, and she was instructed in mindfulness exercises. She willingly engaged, found these relaxing, and was agreeable to continue MBI at home and return to outpatient psychiatric treatment.

Discussion: Brief MBI can be readily conducted during a hospital stay. Honestly apprising the patient that these may be helpful with both epileptic seizures and emotional events may have facilitated her willingness to accept them as a treatment option. Given this dual indication, MBI can

also be useful when diagnosis is unclear. MBI exists in both longer- and shorter-term forms. Research has focused primarily on longer-term interventions, so further research on brief interventions is needed. **Conclusion:** Mindfulness is helpful in treatment of PNES and seizures, can be readily accomplished during hospitalization, and should be part of the repertoire of a CL psychiatrist, but further research is needed to determine whether short-term MBI have the same benefits as longer interventions.

No. 56

Developing an Integrated Care Program for Residents in a Multi-Hospital Program: Challenges and Progress

Poster Presenter: Mira Zein

Co-Authors: Jennifer Zhu, Elizabeth Dohrmann

SUMMARY:

Integrated care models are an evidence-based method for providing medical and behavioral health services. There have been extensive data in the scientific literature on integrated care models, in particular collaborative care, and their ability to improve markers of mental and physical health when compared to traditional models of care. Increased training in integrated care is becoming an important element of general psychiatry residency, addressing several competencies of the new ACGME milestones, including systems-based practices. The psychiatry residency at NYU Medical Center has diverse sites that span multiple systems of care, including a public, city hospital (Bellevue Hospital), forensic and civilian state hospitals, federal system (VA), and private hospitals and clinics. Each system has varying levels of already existing integrated care opportunities. The goal of the NYU resident-driven Integrated Care Working Group is to expand existing and create new resident opportunities in integrated care. Through creating these programs, the working group also hopes to foster collaboration between different disciplines and providers. The working group is advancing changes in the resident educational curriculum and clinical electives and is investing in research and quality of care projects. Educational developments have included obtaining and expanding didactic hours dedicated to teaching the collaborative care model, reviewing basic primary care skills for psychiatrists and creating

clinical site-specific case conferences that focus on interdisciplinary care provision for patients on psychiatric units. An interest group has been formed that organizes journal club reviews and connects residents with training opportunities and mentorship in integrated care. Clinically, the working group has created an elective in the PGY-3 -4 years that trains psychiatry residents in the collaborative care model, providing experience with case manager supervision and functioning as a psychiatric consultant in the primary care clinic. Additional clinical electives are being developed in the areas of HIV psychiatry, cancer care, palliative care, reproductive health, and neuropsychiatry. Research pursuits include quality-improvement projects on the inpatient psychiatric units that 1) monitor care indicators for medically complex psychiatric patients receiving interdisciplinary care and 2) assess and bolster multidisciplinary team response to medical crises. Currently, the group is completing a needs assessment survey and analysis of behavioral health training needs for residents in other disciplines. This project is in partnership with the University of Virginia and Northwestern University. Navigating the administrative structures and varying resources of multiple systems of care has been a challenge but has provided invaluable experience in championing integrated care in a multisite residency program.

No. 57

Risk of Depression and Suicide in Male Adolescents With Borderline Personality Disorder and Comorbid Autism Spectrum Disorder: A Case Report

Poster Presenter: Fatima Iqbal, M.D.

Co-Authors: Asghar Hossain, Yalda Safai, Lintu Ramachandran, Edward Hall, M.D.

SUMMARY:

Background: Autism spectrum disorder (ASD) is a neurodevelopmental disorder that is often characterized by deficits in social interactions and interpersonal skills. Children with ASD typically also demonstrate restrictive and repetitive behavior. According to the latest statistics from the CDC, about one in 68 children have been found to have autism spectrum disorder. Although it has been shown that 50% of these children tend to develop depression in their adolescence, the correlation between ASD and borderline personality disorder (BPD) has not been

well studied. BPD is characterized by a pattern of variability in interpersonal relationships, self-image and affect. The other diagnostic criteria specified by the *DSM-5* include fear of abandonment, self-damaging impulsivity, recurrent pattern of self-harm or suicidality, chronic feeling of emptiness, and intense, inappropriate or uncontrollable anger. While a theoretical correlation has been long hypothesized between the two disorders and empathic imbalance has been used as a possible model to explain the association, very little data currently exist at the moment to support the argument. **Objective:** Assess the risk of depression and suicide among male patients with borderline personality disorder and comorbid autism spectrum disorder. **Case:** We present the case of an 18-year-old male with a past psychiatric history of ASD and borderline personality traits. He was admitted to Bergen Regional Medical Center secondary to suicidal ideation with an attempt by cutting his wrist secondary to psychosocial stressors (relationship issues with family and girlfriend). **Discussion:** Literature review suggests that not only is there an increased association of personality disorders in individuals with ASD, but the risk of suicide is also statistically higher in individuals with both ASD and BPD. Between the two genders, borderline personality is often more prevalent in females. In our case, the patient was a male being diagnosed with ASD and BPD. It is clear that borderline patients are more likely to attempt suicide, especially females, but what has not been well studied is the risk of depression and suicide among male borderline patients who have comorbid ASD. Is borderline personality disorder still more common among females in this population or are males just as likely to suffer from borderline personality as females in patients with ASD? Our case proves that BPD does in fact occur in male patients with ASD; therefore, these patients should be closely monitored for borderline personality early in life, as well as signs of depression and suicidal ideations. Given the unique nature of our case, more research should be dedicated to studying borderline personality disorder in males.

No. 58
First Episode of Psychosis in Young Adolescents With Frontal Lobe Atrophy

Poster Presenter: Fatima Iqbal, M.D.

Co-Authors: Asghar Hossain, Adel Nesheiwat, Ammar Ahmad, M.D.

SUMMARY:

Background: Neurocognitive decline marks the core feature of schizophrenia, a severe mental disorder. Reportedly, there is markedly reduced cortical thickness in schizophrenic patients, which significantly correlates with the subjective cognitive dysfunction in these patients. The objective of our case is to elucidate the onset of first episode of psychosis in patients with idiopathic frontal lobe atrophy and to underscore the importance of appropriately managing these patients. **Case:** We report a case of an 18-year-old Caucasian male admitted secondary to first episode of worsening psychosis, with disorganized thoughts and behavior. He was suffering from paranoid delusion for past couple of months with a gradual decline in his level of functioning. During his initial workup of first episode of psychosis, brain CT scan showed frontal lobe atrophy inappropriate for his age. **Discussion:** Interestingly, frontal lobe atrophy, although common in schizophrenic patients, develops over the course of disease, but was very significant in our patient on his first presentation. It remains uncertain whether it was his first psychotic break or unknown manifestation of schizophrenia despite the symptom severity. This raises an important issue of managing the first episode of psychosis in patients with such severe manifestation and to delay the further progression of frontal lobe atrophy and subsequent cognitive and executive functioning in such individuals. Moreover, our case also emphasizes the crucial period before the onset of illness, as data suggest that there is an early deterioration between premorbid and first-episode phases, followed by a relative stability of the neurodevelopmental processes.

No. 59
Examining the Rates and Outcomes of Autism in First-Episode Psychosis

Poster Presenter: Shushan Zheng

SUMMARY:

Background: Autism spectrum disorder (ASD) commonly occurs at a higher rate in the first-episode

psychosis (FEP) population compared to the general population. The presence of comorbid ASD or higher levels of autistic traits may negatively affect the treatment and recovery of FEP patients. **Objective:** We aim to establish the prevalence of autism-related symptoms and traits, as well as autism spectrum disorder, in this study cohort. We also seek to ascertain if the subgroup of patients with higher autistic traits or a diagnosis of ASD have a different trajectory to recovery as compared to FEP patients without high autistic traits or a diagnosis. **Methods:** Patients at one-year follow-up with the Singapore Early Psychosis Intervention Programme (EPIP) will be recruited over a period of one year. Participants will be assessed for their level of autistic traits and presence of ASD diagnosis using the Autism Spectrum Quotient 10 items and Autism Spectrum Disorder Adult Screening Questionnaires in the screening phase and diagnostic interview aided by the Royal College of Psychiatrists Diagnostic Interview Guide for the Assessment of Adults With Autism Spectrum Disorder and Autism Diagnostic Observation Schedule in the diagnostic phase. Participants will be divided into those with high levels of autistic traits and those with low levels of autistic traits. Using both dimensional and categorical analysis, we will describe their clinical and sociodemographic characteristics and compare their changes in baseline and one-year Positive and Negative Syndrome Scale and Global Assessment of Functioning Scale scores and rates of symptomatic/functional remission. **Conclusion:** This study is ongoing, and the results will be presented and discussed at the Annual Meeting. Findings from this study could help to describe the epidemiology of autistic traits/ASD in the FEP population, identify whether higher levels of autistic traits affect treatment outcomes, and increase awareness of comorbid ASD among psychosis intervention services locally and also internationally.

No. 60

Recognizing Dopamine Supersensitivity and Clozapine Withdrawal Symptoms

Poster Presenter: Ronak Patel, M.D.

Co-Author: Luisa Gonzalez, M.D.

SUMMARY:

Dopamine supersensitivity has been described as the

response to chronic dopamine blockage induced by neuroleptics, which in turn causes a relative increase in dopamine functions in the mesolimbic pathway. Symptoms can include perceptual, mood and movement disturbances; delusions; cognitive deficits; disorganization; and isolation. Clozapine withdrawal symptoms have similarly been reported to cause a rapid deterioration in mental state and can be severe with abrupt onset. Symptomatology can include agitation, movement disorders and additional psychotic features. Studies have also noted that such symptoms after clozapine withdrawal were due to delirium, perhaps the result of central cholinergic rebound. In this poster, we describe the case of a 35-year-old male with schizophrenia who presented to the Comprehensive Psychiatric Emergency Program (CPEP) after two days' cessation of clozapine, with subsequent worsening of psychotic symptoms. The patient presented as combative, paranoid, internally preoccupied, and with waxing and waning cognitive mentation. We ultimately aim to bring awareness to clinicians on the importance of recognizing clozapine withdrawal symptoms in the noncompliant patient. Patients should therefore be informed of the possibility of severe symptomatology and should work with clinicians to formulate a plan to manage potential supersensitivity phenomena upon clozapine cessation.

No. 61

Fugue-Like State and Psychosis in the Context of Chronic Cannabis Use: A Case Report and Literature Review

Poster Presenter: Jeremy K. Young

Co-Authors: Sanjay Advani, Sharon Sukhdeo, Stanley Ardoin, John Knox

SUMMARY:

Occurring in 0.2–7.2% of the general population, dissociative amnesia is one of three disorders listed in the *DSM-5* under the heading of dissociative disorders. The disorder refers to a heterogeneous collection of psychological presentations, distinctive in the dimensions of content and timing. It is characterized by an inability to recall autobiographical information that may occur after an inciting traumatic event. The amnesia can be complete (generalized amnesia) or limited to a life

event (localized amnesia). It is usually retrograde with an identifiable onset and termination. Dissociative amnesia involving purposeful travel or arbitrary wandering is termed dissociative fugue, a *DSM-5* specifier that occurs in approximately 0.2% of the general population. Although the ICD-10 lists dissociative fugue as a unique diagnosis, clinical and neuroimaging research findings support its new designation in the *DSM-5*. Retrospective and prospective studies tend to support a pathopsychological model implicating antecedent psychological stressors. It is commonly diagnosed in survivors of child abuse, sexual abuse, natural disasters, and war. A time lag may exist between the inciting trauma and the dissociative amnesia. Functional neuroimaging studies, which compared patients during amnesic episodes to age-matched healthy controls, have demonstrated hypometabolism in the right inferolateral prefrontal cortex in patients, implicating this region in the neural basis of dissociative amnesia. Dissociative amnesia usually remits spontaneously after removal from the traumatic situation. Hospitalization is required for patients who pose a danger to themselves or others and also offers separation from the stressful situation. Psychotherapy is the cornerstone of management for persistent cases. Hypnosis or drug-facilitated interviews may be helpful to recover lost memories and to manage the impact of resurfaced ones. This case report discusses a 51-year-old Caucasian male who presented during a dissociative fugue-like state in the context of both psychotic symptoms and chronic cannabis use. The patient was found far from his hometown, initially unable to recall important autobiographical information, which caused significant distress and impairment resulting in his mental health detainment. Throughout his stay, his fugue-like symptoms resolved as his psychotic symptoms were treated. Cannabis use has independently been shown in the literature to cause symptoms of psychosis or dissociation. We propose further exploration into the role of cannabis as it may highlight common neurobiological mechanisms underlying both dissociative and psychotic symptoms. Understanding the mechanism by which cannabis produces these symptoms might enhance our current understanding of both and aid in the management of these patients.

No. 62

Elevated Basophil Counts and Basophil to Lymphocyte Ratio Predict Rehospitalizations of Patients With Schizophrenia

Poster Presenter: Roopali Parikh

Co-Authors: Alex Ding, D.O., Akinboyede Akinyemi, M.D., Adrian De Castro-Quiros, M.D., Lynnette Santana, M.D., Juan D. Oms, M.D.

SUMMARY:

Background: Schizophrenia is one of the most serious psychiatric disorders, with a lifetime prevalence of 0.3–0.7%, affecting approximately 24 million people. Schizophrenia is a multifactorial illness, where biological, psychological and social factors all play important roles in its onset and progress. Recently, the role of immune system dysregulation as a potential contributing factor to disease severity has gained importance. Research has shown associations between elevated histamine levels in those with schizophrenia. Basophils, a type of white blood cell responsible for inflammatory reactions during an immune response, produce histamine, which has also been implicated as a dysfunctional neurotransmitter in schizophrenia. Accordingly, the objective of this study was to determine the association between basophil counts, basophil to lymphocyte ratio and rehospitalizations in patients with schizophrenia. **Methods:** The study was a retrospective analysis of prior hospital visits. The inclusion criteria were diagnosed with schizophrenia (for at least four years), over 18 years old, admitted to the hospital between September 2013 and September 2015, and had CBC (including basophil count) drawn in the emergency department before hospitalization. Data were collected from the electronic record system at Larkin Community Hospital. Binary logistic regression was used to examine the relationships between CBC (including basophils and neutrophil to lymphocyte ratio) as predictors of rehospitalizations. **Results:** A total of 154 patients met inclusion criteria. The subjects' age ($M \pm SD$) was 42.3 ± 15 years. After controlling for the demographics of age and gender, patients with elevated basophil counts and basophil to lymphocyte ratio were significantly ($p < 0.01$) more likely to be rehospitalized ($OR = 1.9$, 95% CI [1.57, 2.73] and $OR = 1.5$, 95% CI [0.90, 2.25]). **Conclusion:**

Results indicate that high basophil counts and basophil to lymphocyte ratio are associated with increased rate of rehospitalization. A multitude of factors could be responsible for the increased count, such as acute stress from the environment (i.e., poor living conditions) or acute psychosis, which leads to increased stress. The results of the study add to the current notion of immune system dysregulation in the pathophysiology of schizophrenia. This study opens the door for a biomarker as a predictor of rehospitalizations and could lead to improved treatment options for schizophrenic patients.

No. 63

Genital Self-Mutilation: A Case Report and Discussion of Acute and Long-Term Psychiatric Treatment Issues

Poster Presenter: Megan McLeod, M.D.

Co-Authors: Raphael Leo, Thomas Veeder

SUMMARY:

Background: Genital self-mutilation (GSM) is a catastrophic event encountered among individuals with significant psychopathology. Although the majority of published cases about GSM focus on acute psychiatric and urologic management, there is a dearth of literature concerning longitudinal psychiatric treatment approaches. This poster describes a case of auto-penectomy and provides a discussion of treatment issues. **Case:** A 23-year-old South Asian man with a history of unspecified psychotic disorder and cannabis use disorder was hospitalized emergently after his mother discovered that he self-amputated his penis using a kitchen knife. The patient's actions had been prompted by several weeks of auditory command hallucinations. Acute care was directed at the management of the urologic injury, and he was subsequently transferred to the psychiatric inpatient service. With resolution of psychotic symptoms, the patient was discharged with follow-up at a clinic specializing in new-onset psychosis. Post-discharge treatment consisted of medication management and a multifaceted therapeutic approach. Over the course of the year, the patient remained free of hallucinations or thoughts of harming himself. He resumed pursuit of his academic goals and returned to work while awaiting prosthetic placement. **Discussion:** Patients with psychotic disorders who commit GSM are at

risk for further self-harm and suicide and require ongoing intensive management. Acute hospital management involves treating the underlying psychosis, assisting house staff and collaborating services to recognize their countertransference, and supporting the patient and his family through feelings of guilt and shame. Long-term outpatient management involves ongoing risk assessment for suicidality and recurrence of psychosis, patient education on the need for psychotropics, family involvement to support adherence, exploration of precipitating factors, discussing body image concerns and the impact that the injury has on one's quality of life, addressing comorbid substance use, and paying heed to cultural and religious implications of the injury. Patient reactions to the event will likely shift as the psychosis resolves. Psychiatry can facilitate examination of the meaning behind the injury, while helping the patient to adapt to the sequelae and cultivate skills to meet functional demands.

No. 64

Treatment of Schizophrenia: A Review of Best and Actual Practices

Poster Presenter: Ifeoluwa Osewa, M.D., M.P.H.

Co-Authors: Ori-Michael J. Benhamou, M.D., M.M.S., Anupama Sundar, M.D. M.P.H, Annie Xu, M.D., Seema Sannesy, M.D., Sahil Munjal, M.D., Alexander C. L. Lerman, M.D., Stephen Ferrando, M.D.

SUMMARY:

Schizophrenia is a chronic psychiatric disorder prompting hundreds of thousands of emergency room visits annually in the U.S. Worldwide prevalence is 1.1%, regardless of ethnic or economic background, with approximately 3.5 million diagnosed persons in the U.S. alone. Appropriate treatment begins with a comprehensive diagnostic evaluation, including identifying the *DSM-5* criteria. Components of a proficient workup include obtaining a medical and psychiatric history of patient and family, including medication and substance use; risk assessment; and engagement of family and other collaterals. Although there is no definitive cure, management of schizophrenia includes psychosocial treatments and pharmacotherapy. A growing body of scientific data are available to guide psychiatric treatment of schizophrenia. The CATIE

trial indicated superior efficacy of olanzapine by time to discontinuation. Further studies supported superior efficacy of clozapine over olanzapine and other medications. The CUTLASS trial concluded that there is no benefit for second-generation antipsychotics (SGAs) over first-generation antipsychotics (FGAs), as a group, on quality of life ratings, per PANSS score, and no difference in health care costs at one year. Practice guidelines have been proposed by several groups including PORT and TMAP. General consensus is to use clozapine only for treatment-refractory schizophrenia; TMAP proposes a first-episode trial of an SGA, whereas PORT proposes any antipsychotic except for clozapine or olanzapine for the first episode. Medication choice should take into account common side effects, including extrapyramidal symptoms, weight gain, QTc prolongation, sedation, prolactin elevation, and anticholinergic effects. In this poster, a cross-section of 24 patients discharged from Westchester Medical Center (WMC) in October and November 2015 with a primary diagnosis of schizophrenia were chosen for chart review to assess demographics and disease management. Average age was 42, with a mean hospitalization stay of 21 days (5–57 days). Nearly half of the patients presented with substance abuse, with cannabis being the most prevalent culprit. Medical comorbidities were present in a majority of the patients, with hypertension and thyroid disease being the most prevalent. Patients were managed with a variety of antipsychotic medications: haloperidol (N=8), olanzapine (N=5), clozapine and fluphenazine (N=4 each), perphenazine and risperidone (N=3 each), and quetiapine and paliperidone (N=1 each). Fifteen patients received typical antipsychotics, and five patients received long-acting injectable antipsychotic agents. Documentation regarding choice of medication was poor in a large number of cases. Inpatient treatment of schizophrenia at WMC was effective, but deviated from best practices in selection of medication regimen. Many patients presented with significant medical comorbidities.

No. 65

Case Report: Rapid Decrease in Positive and Negative Symptoms of Schizophrenia at Lower Than Recommended Dosing of Clozapine

Poster Presenter: Donald W. Simpson II, M.D.

Co-Authors: Linh Dang, M.D., Sanjay Advani, Geetika Verma, M.D.

SUMMARY:

Schizophrenia and the use of clozapine in treatment-resistant schizophrenia is a well-documented topic studied in the field of psychiatry. There are clear guidelines and monitoring systems set up to avoid the life-threatening effects of clozapine. Clozapine is known to have good efficacy with minimal extrapyramidal symptoms but carries the risk of developing life-threatening agranulocytosis. The following is a case report regarding a 19-year-old African-American male who presented under court commitment to an inpatient facility for psychosis and inability to care for self. On admission, the client was withdrawn with restricted affect, exhibited disorganized thought process and behavior, and was experiencing auditory and visual hallucinations, as well as delusions. Following three trials of two atypical antipsychotic medications and one typical antipsychotic medication, it was decided to give a trial of clozapine. This case report will outline the rapid response to clozapine as demonstrated by a decrease in both positive and negative symptoms at lower than recommended therapeutic dosing while being closely monitored for the development of agranulocytosis.

No. 66

Response to Internal Stimuli in a Bilingual Patient With Schizophrenia

Poster Presenter: Markian Pazuniak, M.D.

SUMMARY:

Background: Prior literature suggested that a bilingual patient may experience positive symptoms in either or both of their acquired and native languages. Regional differences in the brain exist between languages acquired early in life versus language acquired later in life. A language that is acquired during adulthood activates a different region of Broca's area than a language acquired during childhood and a native language. The early acquired language (during childhood) activated the same region of Broca's area as the native language. Language acquired during childhood, adulthood and native language activated the same region of Wernicke's area. We present a case of a Chinese

immigrant in which she appeared to respond to internal stimuli in a different language than her typical, and acquired, spoken language. **Case:** A 53-year-old patient, M. Z., with a past psychiatric history of schizophrenia was brought to the hospital four years ago by her daughter for poor activities of daily living. Her history was notable for being born in Beijing and having emigrating from China six years prior to hospitalization. Her first language was Fuzhou, and she acquired Mandarin later in her life. She was noted to speak in multiple dialects. Four years later, M. Z. was hospitalized again. While being interviewed, M. Z. spoke only in Mandarin, her acquired language. Most interestingly, she was also found to be responding to internal stimuli, which was in a different language, Fuzhou, than what she normally spoke. **Discussion:** M. Z.'s presentation was notable for speaking in multiple dialects. She was found responding to internal stimuli in her native language, rather than her acquired and typically spoken language. It appeared that at least some of her hallucinations may have been in her native language, even though her communication with staff was in her acquired language. She was also able to voice many of her delusions in her acquired language, Mandarin. This case differs from previous case studies in that the patient was found responding to auditory hallucinations in a different dialect. Therefore, the auditory hallucinations may interject in a patient's native language despite the patient currently thinking in the acquired language. In the review of the literature, the presence of auditory hallucinations in both the native and acquired languages regardless of when the patient acquired the language suggests that both areas of Broca's area are involved with the language deficits of schizophrenia. Change of language may also indicate response to internal stimuli and a change in symptom severity.

No. 67

Catatonic Schizophrenia: Early Recognition of an Unusual Presentation

Poster Presenter: Christiana M. Wilkins, M.D.

SUMMARY:

Catatonia is a psychomotor syndrome characterized by a combination of stupor and motor abnormalities first identified by clinicians in the 19th century.

Though commonly associated with schizophrenia, etiologies are broad and include mood disorders, general medical conditions, neurological conditions, withdrawal from medications, and intoxication or overdose with illicit substances. The mainstay treatment of catatonia is lorazepam, with refractory cases generally responding favorably to ECT. Responses to benzodiazepines vary on diagnostic subgroups, duration of disease, symptomatology, and other factors. In our case, a 27-year-old single white male with no known psychiatric history presented with catatonia with prominent mutism, negativism, posturing, gegenhalten, waxy flexibility, and increased tone and was started on a lorazepam challenge. With improvement of his catatonia, he was better able to communicate with caregivers via written statements that gave evidence of formal thought disorder and underlying schizophrenia, at which time he was started on risperidone for psychotic symptoms. This case report suggests the importance of early recognition of catatonia, so that this highly treatable condition can be quickly targeted with a lorazepam challenge to prevent further complications and reduce mortality.

No. 68

Psychosis Impeding Medical Treatment

Poster Presenter: Patricia Serrano, M.D.

Co-Author: Carolina Retamero, M.D.

SUMMARY:

Background: In psychiatry, we often encounter a patient who refuses treatment because their disorder impairs their understanding of the condition or treatment, because they are unable to manipulate the information rationally or appreciate its consequences, or because they are unable to express a choice. **Case:** We describe the case of a 42-year-old female whose mother brought her in under an involuntary commitment because of worsening psychosis. The mother reported her daughter had poor sleep, talked to herself, was paranoid and aggressive, and refused to see a doctor for a "thyroid problem." The patient had a hospitalization 10 years prior for substance-induced psychosis. When interviewed, she was delusional and paranoid. Her physical exam revealed a prominent goiter, exophthalmos and tachycardia. The patient was hospitalized on the medical floor, diagnosed with

Graves disease and thyroid storm. She was started on metoprolol and methimazole, which the patient accepted occasionally. She reported to the consultation-liaison team that her goiter was caused by “ventolin” and that she was hospitalized for pneumonia. She complained that the team was experimenting on her and that her thyroid results were wrong. The team recommended risperidone, which she refused. She was stabilized and transferred to the psychiatry floor. The day after arrival, she was discharged from mental health court. The court ruled that she had a medical problem rather than psychiatric. Four months later, she was again involuntarily committed with worsening thyrotoxicosis and psychosis. Although the patient was still on the medical floor, she was committed by the court for psychiatric care after being medically cleared. The patient was declared to lack the capacity to refuse surgery. The mother signed consent. After a successful postoperative recovery, she was transferred to the psychiatry floor.

Discussion: Our patient, while able to sustain attention, describe the procedure and explain her refusal, was in denial of her diagnosis. The delusions and paranoia altered her insight and appreciation of her condition. She was also unable to discuss her illness rationally. Without surgery and medical treatment, the patient’s life was in danger. Psychiatric treatment before medical stabilization had been attempted without success. **Conclusion:** Patients can lack the capacity for a particular decision not only in the context of dementia and delirium but also in psychosis. Documentation is key, as is communication with the primary team and the family.

No. 69

Catatonia Eight Years After Head Injury

Poster Presenter: Keeban Nam, M.D.

Co-Authors: Evita Rocha, M.D., Chris Cho, M.D.,

Nancy Vo, Robert G. Bota, M.D.

SUMMARY:

We present the case of a male with subtle deterioration in functioning for multiple years, culminating in a state of catatonia for many months necessitating total care by nursing staff. He had a previous extensive workup completed at several hospitals with some positive results. However, these

results did not impact his diagnosis or treatment, with continued gradual decline. Collateral history revealed a significant head injury as a result of a motor vehicle collision several years prior. During his most recent hospitalization, he exhibited some response to lorazepam, although not clearly dose dependent, over 4–10mg (maximum dose 6mg by IV every two hours) resulting in ICU observation. He did not respond solely to lorazepam/selegiline/minocycline regimen or ECT alone, however. He instead had exponential improvement with the combination of medications and ECT together.

No. 70

Diagnosing the Cause of Headaches in a Patient With Schizophrenia and Multiple Medical Comorbidities

Poster Presenter: Andrew C. Shore, M.P.H.

Co-Author: Benjamin K. P. Woo, M.D.

SUMMARY:

Background: Headache is a common nonspecific medical complaint that may present as both a cause and symptom of disease in psychiatric patients. How to best work up new-onset headaches to distinguish primary from more dangerous secondary headaches remains a challenge within this population. The complexity of eliciting and interpreting a useful description of the provoking symptoms can be considerable when the patient is suffering from psychosis. As a result, a thorough medical workup becomes essential under these conditions. We present a case of acute-onset headache complicated by multiple comorbidities and mental illness. **Case:** A 31-year-old female with a reported history of schizophrenia, hydrocephalus, chronic back pain, fetal alcohol syndrome, and polysubstance abuse presented with suicidal ideation and complained of a pounding, 10/10, headache. The patient admitted to recently stopping her antipsychotics (Seroquel, Abilify), fighting with a roommate, being evicted, and lacking social support as recent stressors. Collateral information from the patient’s mother and CURES report revealed several years of opiate abuse. A physical and neurological examination did not reveal abnormalities. A head CT showed mild hydrocephalus. An LP revealed a normal opening pressure, a negative gram stain and no WBC. An MRI

with and without contrast showed a stable, mild communicating hydrocephalus. With these results, a neurology consult ruled out idiopathic intracranial hypertension, hydrocephalus, meningitis, and subarachnoid hemorrhage as a cause of her headache. During her inpatient stay, the patient's psychosis improved, allowing better articulation of her pain's characteristics as lasting several hours at a time, associated with colorful halos, photophobia and phonophobia. She also reported auditory hallucinations that made her headache worse. The imaging and labs along with the patient's description of her symptoms led to the diagnosis of migraine. She was started on Imitrax, magnesium oxide, and nortriptyline. She subsequently reported a resolution of pain as well as suicidal ideation over the next several days and was stabilized on psychiatric medications prior to discharge.

Discussion: This case highlights the importance of a thorough medical workup in the treatment of a patient with schizophrenia. The inability of certain patients to articulate the nature of their symptoms can complicate or obscure the correct diagnosis. Consequentially, it is necessary for psychiatric patients to receive a complete medical examination for the presentation of new medical complaints. Psychiatrists should evaluate all ongoing and comorbid medical problems to ensure the problems did not recur or exacerbate psychiatric illness. Furthermore, psychiatrists must look for unrecognized medical illnesses as cause of headaches. In this case, with appropriate diagnosis and treatment of migraine, the patient's psychiatric complaints in the form of suicidal ideation also resolved.

No. 71

Second-Generation Long-Acting Injectable Antipsychotics vs. Oral Antipsychotics in Relapse Prevention After a First Episode of Psychosis: A Meta-Analysis

Poster Presenter: Christine Tran-Boynes, D.O.

Co-Author: Vittoria DeLucia

SUMMARY:

Background: Long-acting injectable antipsychotics are typically used in patients who have demonstrated noncompliance with oral antipsychotics. However, the role of long-acting

injectable antipsychotics in patients after a first episode of psychosis has not been examined. After a first episode of psychosis, relapse rates are high, typically due to treatment noncompliance. Long-acting injectable antipsychotics are a way to ensure adherence to medications. **Objective:** Perform a meta-analysis of published randomized controlled trials in assessing the efficacy of second-generation long-acting injectable antipsychotics for relapse prevention following first-episode psychosis compared to first- and second-generation oral antipsychotics. **Methods:** Trial registries and the following databases were searched: PubMed and PsycINFO. The electronic databases were searched from January 1990 to September 2015.

Bibliographies of relevant articles were cross-referenced. Selected studies included randomized controlled trials including study participants with diagnoses of schizophrenia, schizoaffective disorder or schizophreniform disorder made at least five years prior to study entry. Only adults 18 years or older were included. Three studies, comprising 940 participants, met the inclusion criteria.

Demographics, types of second-generation long-acting injectable antipsychotics and first- and second-generation oral antipsychotics implemented, adverse events, study duration, study retention, and relapse prevention were extracted from each publication. **Results:** The relative risk ratio of using second-generation long-acting injectable antipsychotics compared to first- and second-generation oral antipsychotics across three studies was 1.078 (95% CI [1.007, 1.154], $p=0.012$), indicating a small but statistically significant improvement of outcome. These findings were found to have significant heterogeneity ($\chi^2=9.51$, $df=2$, $p=0.009$). This most likely reflects the variety of long-acting injectable antipsychotics and oral antipsychotics utilized across the studies.

Conclusion: This meta-analysis demonstrates that second-generation LAIs are useful in preventing relapse after first-episode psychosis, although a small effect size was produced. Further studies, including the role of first-generation long-acting injectable antipsychotics in relapse prevention after a first episode of psychosis, can elucidate treatment options for first-episode psychosis. Compliance with medications, whether by LAIs or oral antipsychotics, is important in relapse prevention.

No. 72**I Can Prove I Am Dead: System Failure in the Treatment Cotard's Syndrome**

Poster Presenter: Joseph E. Kent

SUMMARY:

Background: Cotard's syndrome is a rare psychiatric disorder with a key feature of nihilistic delusions. This leads to the denial of self and world. Our patient was a 53-year-old male seen on an inpatient commitment who showed an unusual presentation that responded well to risperidone. Cotard's proved fatal after the board was dropped against psychiatric advice. This case illustrated the difficulty of treating severe mental illness and the dangers of viewing a disease only in an acute setting. **Case:** Mr. B. was a 53-year-old male with a history of schizophrenia who presented to a rural hospital agitated and demanding a tonsillectomy. His delusion was that God had given his soul to the devil while he was stationed in the Philippines so that now he was neither alive nor dead. He wanted surgery to show that he could not be sedated as his proof of being undead. He felt at that point the government would have to follow his request to decapitate and cremate him so that his soul could be released. He had a history of witnessing violence, time in prison and utilizing various VA hospitals with no mention of delusions. He was started on olanzapine and changed to risperidone. Over a period of six weeks, he ranged from friendly to threatening and aggressive. Twice, he had periods of denying any delusions and being cooperative, followed by agitation and the return of his symptoms. His hearing was in the sixth week, and the patient was stable that day. Our team sent letters and records to the BOMH advising continued inpatient treatment followed by an outpatient commitment. The board felt he was stable enough and released him on site. The patient completed suicide within the month via attempted beheading. **Discussion:** Cotard's syndrome was first described in the 1700s and later by Jules Cotard in 1880. Today, very little is understood about the disorder or its cause. Studies show that patients have an associated parietal lobe lesion and hypothesize that there is misfiring of the fusiform area and amygdala and also that there is a disconnect between the sensory cortices and the

limbic area. The syndrome is associated with both neurological and psychiatric conditions. Cotard's key feature is nihilistic delusions with three stages. The first is germination, where psychotic depression and hypochondria often appear. Second is the blooming stage, when delusions of negation start. Last is the chronic stage, where severe delusions and psychosis presents. It is a chronic condition and is difficult to treat. Cases are commonly treated with ECT, benzodiazepines, antidepressants and antipsychotics. Mr. B. responded well to oral antipsychotics with a plan to transition to a long-acting injectable. However, he was prematurely released from care and was noncompliant, leading to his eventual suicide. Our case illustrates the importance of viewing the disease in its chronic form and for the need of long-term treatment with close follow-up.

No. 73**The "Wizard" of Parasites Causing Itching, Insomnia and Social Isolation: A Case Report on Ekbohm's Syndrome**

Poster Presenter: Lovejit Kaur

Co-Authors: Zhanna Elberg, Cynthia Pristach

SUMMARY:

Ekbohm's syndrome, or delusional parasitosis, is a rare psychiatric illness defined by the fixed and false belief of being infested with "bugs"—parasites, insects, worms, bacteria, spiders, or other living organisms. Patients usually report tactile hallucinations known as formication, which is a sensation resembling crawling of insects on or under the skin. We are presenting an interesting case of such a disorder leading to social isolation and obsessive-compulsive features with the ritual of utilizing "home remedies" (bleach baths and apple cider vinegar baths). Mr. B. is a 30-year-old Caucasian male with no past psychiatric history who presented to our psychiatric emergency room with complaints of worsening itching, emotional distress, sleep difficulties, and social isolation over the past 15 months. He had been seeking medical care for this pruritus and was also treated for scabies in the past with no relief. Most of the medical workup for his pruritus had been unremarkable, including normal liver enzymes and ferritin level. He was diagnosed with "Morgellon's disease" after failure to

identify any medical cause for his pruritus. Now, the patient had deteriorated emotionally over time, leading to diminished self-esteem, poor concentration, and inability to maintain social relationships and keep up with his job. He resolved to mobilize out of his hometown and isolated himself. He fumigated his apartment in order to get rid of bugs. During this presentation, he reported intermittently seeing hundreds of specks on his arms, which resembled spiders, and experiencing the sensation of bugs crawling over his body. Examination was negative for any dermatological disorders except for signs of chronic excoriations. He is also an active user of marijuana and admits to using cocaine nine months ago. Mr. B. was admitted to our extended observation unit with the diagnosis of Ekbohm's syndrome, informed consent was obtained, and a trial of risperidone was initiated and optimized to 2mg nightly. Mr. B. reported mild subjective improvement in his sleep and itching during follow-up appointments at the outpatient clinic. However, he continued to report experiencing itching, ruminated on thoughts of being infested and compulsively utilized bleach baths, which seemed to alleviate his anxiety for a brief period of time. Mr. B. was scheduled for close follow-up with the resident physician and the therapist. Supportive psychotherapy was initiated with emphasis on symptom management, and CBT was also being considered as a treatment approach. A trial of fluvoxamine 100mg daily was initiated to address obsessive-compulsive features. He reported subjective improvement over the course of three to six weeks.

No. 74

Amphetamine-Induced Delusional Parasitosis

Poster Presenter: Suneela Cherlopalle, M.D.

Lead Author: Carlos E. Molina, M.D.

Co-Authors: Amit Thour, M.B.B.S., Raman Marwaha, M.D.

SUMMARY:

Background: Delusional parasitosis is a rare disorder in which a person has the tenacious and false belief of being infested with parasites. It has been given multiple names, such as Ekbohm syndrome and Morgellons syndrome formication. Two forms of disease include primary delusional parasitosis and

secondary delusional parasitosis, which occurs secondarily to drugs, medical illness or another psychiatric disorder. Some of the drugs that have been associated with delusional parasitosis are psychoactive agents like amphetamines, cocaine, methylphenidate, and pemoline. This disorder is rarely diagnosed, and treatment is a challenge. This disorder is highly comorbid with other psychiatric illnesses, and its pathogenesis is relatively unknown.

Case: We report a case of a 32-year-old female who was admitted to our psychiatric unit with bizarre behavior and delusions of her house being infested by bugs. She constantly visited dermatologists with complaints of lesions on her skin and was treated with multiple medications for it. She moved out from her apartment, and her paranoia worsened with her having paranoid delusions toward her sister. She had been abusing high dosages of Adderall for the past few months, and the use of Adderall coincided with her onset of delusions. The patient was started on Abilify, and dermatology was consulted. There was no evidence of infestation on the samples she provided; what she alleged to be insects was determined to be dead skin, fibers and dried nasal mucus. She was difficult to treat, and her delusions improved slightly during her inpatient stay.

Conclusion: Delusional parasitosis is extremely difficult to diagnose and manage. Diagnosis involves a multidisciplinary approach. Management includes stopping the offending agent, like amphetamine abuse in our case, and treating with an antipsychotic medication along with psychoeducation, counseling and involvement of cared ones. Our case suggests that treatment with aripiprazole may be relatively efficacious in a patient with delusions of being infested with parasites.

No. 75

Exploration of Potential Etiologies of Acute Agitation in a Psychiatric Patient With History of Psychosis and Seizure Disorder

Poster Presenter: Swaminathan Thangaraj, D.O.

Co-Author: Linda Chamberlin

SUMMARY:

Dual diagnosis is a common complication in the care of patients with mental disorders. In this poster, we look specifically at the combination of seizure disorder and psychosis. For this case, the patient was

a 54-year-old African-American male with past medical history of schizophrenia, bipolar disorder and seizure disorder who presented to the emergency department (ED) for COPD exacerbation. Due to respiratory distress, the patient was intubated in the ED and transferred to the medical ICU for further treatment. The patient was stabilized and transferred to the medical floor. During the hospital course, he was given levetiracetam for seizure prophylaxis, quetiapine for psychosis and fluoxetine for mood symptoms. Once medically stable, the patient was transferred to psychiatric floor due to suicidal ideation and auditory hallucinations. Within one day of transfer, the patient exhibited seizure-like activity. He was transferred back to medical unit. Levetiracetam loading dose and psychiatric medications (quetiapine and fluoxetine) were reduced due to potential lowering of seizure threshold. The patient continued to exhibit suicidal ideation and psychotic symptoms. Four days after transfer to the medical floor, the patient became acutely agitated and violent. Due to reported allergies (haloperidol and ziprasidone), he was given chlorpromazine 100mg intramuscularly. Subsequently, he was given 50mg every hour for an additional two doses. Also, the patient was placed in restraints as a safety measure. The patient was stabilized. To address the potential lowering of the seizure threshold, the chlorpromazine as needed dose was reduced from 50mg to 25mg intramuscularly every six hours. For potential levetiracetam-induced psychosis, lacosamide was initiated while levetiracetam was tapered. Patients with seizure disorder and psychosis require special care for balancing the risk-benefit ratio of treatment of each condition.

No. 76

The Efficacy of a Single Three-Minute Mindfulness Intervention on Anxiety in Patients With Early Psychosis

Poster Presenter: Alycia F. Ernst

Co-Author: Subha Hanif

SUMMARY:

Background: Mindfulness meditation—a technique originally derived from ancient Buddhist and eastern spiritual practices—is an activity that embodies concentration and awareness and is a widely

recognized means of self-regulation. Mindfulness has proven efficacy in treating affective and somatic symptoms of anxiety, depression and chronic pain. However, the role of mindfulness in early psychosis has not been elucidated. **Objective:** Examine the efficacy of a mindfulness exercise in reducing anxiety symptoms in patients experiencing early psychosis. Additionally, the study sought to determine whether symptom burden mitigates therapeutic response. Our hypothesis was that a three-minute mindfulness exercise would lower anxiety as measured with the Profile of Mood States (POMS) questionnaire and that the pre-intervention symptom burden would not affect the overall therapeutic benefit. **Methods:** Following approval of an academic institutional review board, this prospective study was conducted at the ETCH Wellness Center in East Lansing, Michigan. It included patients who experienced an initial episode of psychosis, with less than 18 months of total antipsychotic exposure. The patients were invited to participate in a one-time mindfulness of body and sound exercise in the context of a routinely scheduled psychiatric visit. At the beginning of each session, the prescriber completed the COMPASS Clinician Rating Form, a standard procedure for each psychiatric visit. Derived from the Positive and Negative Symptoms Scale (PANSS), the COMPASS form measures symptom burden on 12 separate items, ranging from depression and anxiety to hallucinations and apathy. The patients completed the POMS questionnaire, which contains eight mood descriptors for anxiety, excluding the relaxed state mood. Next, a three-minute recorded body and sound mindfulness meditation was administered. This meditation, narrated by Diana Winston, is available at no cost at the UCLA Mindful Awareness Research Center website. At the conclusion of the meditation, patients were asked to complete the POMS scale to identify if the mindfulness exercise had affected their symptoms. The differences between the pre- and post-intervention anxiety scores were analyzed statistically using a paired t-test (MYSTAT software). **Results:** Twenty subjects participated in the study. The mean Anxiety Subscale score of the POMS scores decreased from 4.6 to 1.7. The difference between mean values was statistically significant (95% confidence interval [CI] [1.8, 4.0], $t=5.5$, $df=19$, $p<0.001$). The total symptom burden did not influence the decrease in anxiety

subscores (sample correlation coefficient=0.27, 95% CI [-0.2, 0.6], $t=1.2$, $p=0.25$). **Conclusion:** A brief three-minute mindfulness exercise, conducted in a routine 30-minute psychiatrist office visit, produced a significant reduction in state anxiety for patients suffering from psychotic disorders, regardless of symptom burden.

No. 77

Review: Use of Hematopoietic Growth Factors in the Management of Clozapine-Induced Blood Dyscrasias

Poster Presenter: Pratik Bahekar, M.B.B.S.

Co-Authors: Nhut Giuc Tran, Michael J. Politis, D.O.

SUMMARY:

Background: Clozapine is FDA approved for treatment-resistant schizophrenia and suicidality in schizophrenic patients, but its use is limited by agranulocytosis. Presented here is an updated literature review on using G-CSF to treat clozapine-induced granulocytopenia in the setting of clozapine rechallenge, comorbid immune suppression and treatment augmentation. **Methods:** We performed a systematic MEDLINE database review for articles published in English before August 2016 using MeSH terms: hematopoietic cell growth factors, bipolar and related disorders, schizophrenia spectrum and other psychotic disorders, granulocyte colony-stimulating factor, antipsychotic agents, myelopoiesis, and neutropenia. **Results:** About half of patients show a mean prodromal WBC drop at 29.3 ± 12.6 days before agranulocytosis. In rechallenge, the onset is quicker and course more severe. Neutrophils exposed to the serum of those who developed agranulocytosis underwent complement activation and cell lysis, suggesting an immunological mechanism. Clozapine metabolite N-desmethylclozapine (NDMC) is toxic to myeloid precursor cell at serum levels three- to five-fold higher than normal and is shown to cause toxicity in some patients. Also, clozapine bioactivated to nitrenium ion may lead to neutrophil apoptosis. Individuals developing agranulocytosis may have sensitivity to these clozapine metabolites. Filgrastim administration raises peripheral ANC within four to 24 hours through production and mobilization actions of cytokines such as IL-1 β , LPS, TNF- α . CD4, Th17, and IL-23 downregulates G-CSF. Endogenous

G-CSF levels rise during the transient increase in ANC at clozapine initiation. However, case reports show G-CSF levels in agranulocytosis have inconsistent relation to ANC levels. **Discussion:** Monitoring of endogenous G-CSF levels together with WBC counts during clozapine-induced neutropenia may help distinguish between benign neutropenia and malignant neutropenia leading to agranulocytosis. Measured endogenous levels of G-CSF and other cytokines have varied with progression of granulocytopenia. In addition, the duration of onset, progression and recovery after discontinuation of clozapine are mixed. This indicates that multiple mechanisms may exist in clozapine-related blood dyscrasias and may explain the inconsistent efficacy of G-CSF on clozapine-induced agranulocytosis. Distinguishing between benign and malignant neutropenia is important in order to identify cases that would benefit from filgrastim. In addition, filgrastim use in clozapine rechallenge can reduce the risk from agranulocytosis and offer a safer salvage therapy in treatment-resistant schizophrenia. Filgrastim makes clozapine rechallenge a more viable option, where it would have been previously thought too risky.

No. 78

Late-Onset Psychosis in a 54-Year-Old Female: A Diagnostic Dilemma

Poster Presenter: Michael Esang

Co-Authors: Guitelle St. Victor, M.D., Marian Droz, Rahul Kodali

SUMMARY:

Schizophrenia is a disease that typically begins in early adulthood, between the ages of 15 and 25. The incidence in women is bimodal with two peaks in the age of disease onset: the first after menarche and the second after age 40. One explanation for this second peak is the estrogenic hypothesis of schizophrenia, which attributes onset to the postmenopausal decline in estrogen levels. On that note, we present Ms. M., a peri-menopausal 54-year-old Caucasian female with a history of anxiety and a recently discovered bladder mass, who was seen by our psychosomatic medicine service for delirium. Her medical course was complicated by sepsis secondary to urinary tract infection. The patient also developed bilateral DVT in both lower

extremities, necessitating a prolonged course of anticoagulant therapy and subsequent IVC filter placement. During that time, she was co-managed by consultation-liaison psychiatry for auditory hallucinations and severe anxiety. Her outpatient psychiatrist revealed that she had never reported any episodes of psychosis in the past and followed the patient only for severe anxiety and depression. Information obtained from family members, however, revealed hoarding behavior in the past year. Brain MRI was negative for any acute organic brain pathology. The patient subsequently responded well to a course of risperidone and sertraline and was subsequently transferred to an inpatient urology unit for further evaluation and treatment of the bladder mass. This poster showcases the difficulties in diagnostic workup and management of a peri-menopausal female with new-onset psychosis following a yearlong prodromal phase. The case reflects the highly complicated inpatient medical and surgical course of a patient already encumbered by severe anxiety and depression. The subsequent unraveling of her underlying psychosis presents a diagnostic dilemma, as it is occurring in a patient at an advanced age.

No. 79

Expanding Evidence-Based Use of Clozapine in an Academic Medical Center

Poster Presenter: Adam Hartzler

Co-Authors: Natalie Lester, Kevin Johns, Hossam Guirgis, Dale Svendsen

SUMMARY:

Background: Clozapine is the only antipsychotic that has demonstrated superior efficacy in individuals with treatment-resistant schizophrenia, a group that describes as many as 20–30% of all individuals with schizophrenia. According to Medicaid data from 2011, only 5.8% of Ohio Medicaid recipients with schizophrenia were receiving clozapine, either alone or in combination with other antipsychotics. Evidence-based treatment recommendations indicate use of clozapine following two failed trials of other antipsychotic medications, but clozapine trials are often delayed or never attempted due to multiple factors including side effect profile and need for frequent blood monitoring. Some patients receive antipsychotic polypharmacy prior to trials of

clozapine despite evidence that this practice does not increase efficacy and exposes patients to more deleterious side effects. **Methods:** As part of efforts to practice evidence-based medicine at the Ohio State University Wexner Medical Center (OSU), several initiatives focused on improving our practice with antipsychotics. A joint task force of community inpatient and outpatient mental health providers was formed to evaluate use of clozapine and overall antipsychotic use in our local region. Educational endeavors to improve knowledge about clozapine included grand rounds presentations, case conferences and journal club discussions. Psychiatric residents were required to register for Clozapine Risk Evaluation and Mitigation Strategy (REMS). This project reviews retrospective prescribing of clozapine among adult psychiatric patients discharged from the inpatient psychiatric units at OSU who had a discharge diagnosis of a schizophrenia or schizoaffective disorder. **Results:** In 2013, only 3.9% of psychiatric inpatients with diagnoses of schizophrenia/schizoaffective disorder were on clozapine (N=412 at discharge). The proportion of patients discharged on clozapine increased to 5.2% of 502 discharges in 2014, 7.0% of 430 discharges in 2015 and 10.2% of 157 discharges in the first four months of 2016 (comparison of 2013 to 2016 $\chi^2=8.466$, $p=0.0036$). **Conclusion:** Educational initiatives that focus on increasing awareness about and familiarity with clozapine and its uses can have a significant impact on prescribing practices. This in turn can contribute to optimizing evidence-based patient care. Further work aims to identify additional barriers to clozapine use.

No. 80

Use of Electroconvulsive Therapy in Patients With Schizophrenia in the United States: Insights From the Nationwide Inpatient Sample

Poster Presenter: Mehran Taherian, M.D.

Co-Authors: Rhaisa Dumenigo, M.D., Juan D. Oms, M.D.

SUMMARY:

Background: About 2.2 million American adults have schizophrenia. Twenty to 40% of those with schizophrenia do not reach remission with pharmacological treatment. Electroconvulsive therapy (ECT) been shown to be an effective

treatment for schizophrenia accompanied by catatonia, extreme depression, mania, and other affective components. Early intervention with ECT is encouraged to avoid undue deterioration of the patient's medical condition. The objectives of our study were to examine characteristics of inpatients with schizophrenia treated with ECT and to estimate the effects of prompt ECT on the length and cost of hospitalization. **Methods:** Data from the Nationwide Inpatient Sample (NIS) hospital discharge database (Healthcare Cost and Utilization Project, Agency for Healthcare Research and Quality) for the period 2002–2012 was retrospectively reviewed. All hospitalizations with a primary diagnosis of schizophrenia from the ICD-9 were selected for analysis. ECT was identified using standard ICD-9-CM procedure code 94.27. Multivariate logistic regression (SPSS 22.0 software) was performed on the schizophrenia cohort with or without ECT. **Results:** An estimated total of 3,254,554 hospitalizations were identified between 2002 and 2012 (mean±SD age=43.0±13.7; 57.7% male, 49% White) with a primary diagnosis of schizophrenia. Of all schizophrenia hospitalizations, 28,107 (0.9%) underwent ECT (mean±SD age=47.4±14.4; 62.1% female, 75.8% White). The most common primary payer in schizophrenics with ECT was Medicare (59.4%), followed by Medicaid (22.1%). Patients with ECT had a significantly higher rate of elective admission (19.3% versus 13.4%, $p<0.001$), high median income and severe disease (100% versus 6.6%) compared to patients who did not receive ECT. It was mostly done in large urban teaching hospitals. The Midwest had the highest prevalence (42.1%), followed by the South (26%). Hospitals of New Hampshire (7.2%) and Iowa (7.1%) had the highest rate of performing ECT for schizophrenics, whereas Oregon (0.1%) and Nevada (0.2%) had the lowest rate. The likelihood of receiving ECT in schizophrenia patients was greater for patients with comorbidities of depression (adjusted odds ratio [AOR]=1.21, $p<0.001$) and hypothyroidism (AOR=1.38), but lower for patients with substance abuse (AOR=0.52) and cardiovascular disorders (AOR=0.63). Prompt earlier use of ECT (in the first five hospital days) was associated with significantly shorter length of stay (15.5 versus 32.9 days, $p<0.000$) and less costly inpatient care (\$37,357 versus \$70,104) compared with delayed ECT. **Conclusion:** The rate of ECT use

was higher for white females with older age and severe disease. The earlier utilization of ECT resulted in significantly shorter and less costly inpatient care. Future inpatient research is needed to clearly delineate the selective role of ECT in the treatment of schizophrenia and assess quality of life issues as well.

No. 81

Suicidal Behavior in Schizophrenia Inpatients in the United States, 2002–2012

Poster Presenter: Mehran Taherian, M.D.

Co-Authors: Rhaisa Dumenigo, M.D., Juan D. Oms, M.D.

SUMMARY:

Background: Compared to the general population, people with schizophrenia have a more than eight-fold increased risk of suicide. Among people diagnosed with schizophrenia, an estimated 20 to 40% attempt suicide. Identification of risk factors for suicide is a major tactic for predicting and preventing suicide. The aim of this study was to study the prevalence of and factors associated with suicidal ideation and suicide attempts among schizophrenia inpatients in the United States between 2002 and 2012. **Methods:** Data from the Nationwide Inpatient Sample (NIS) hospital discharge database (Healthcare Cost and Utilization Project, Agency for Healthcare Research and Quality) for the period 2002–2012 was retrospectively reviewed. All hospitalizations with a primary diagnosis of schizophrenia from the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) were selected for analysis. Suicidal behavior (including suicidal ideation and suicide and self-inflicted injury) was identified using standard ICD-9-CM codes. The Student's t-test was used to compare the mean in continuous variables. Multivariate logistic regression (IBM SPSS 22.0 software) was performed on the schizophrenia cohort with or without suicide. A p-value under 0.05 was considered to indicate statistical significance.

Results: An estimated total of 3,254,554 hospitalizations were identified between 2002 and 2012 (mean±SD age=43.0±13.7, 57.7% male) with a primary diagnosis of schizophrenia. Forty-nine percent were White, followed by 34.3% black. Of all schizophrenia hospitalizations, 323,713 (9.9%) had

suicidal behavior (mean±SD age=41.2±12.2, 61.1% male, 51.2% White). The rate of suicidal ideation was 9.9%, and suicide attempts 0.6%. The most common primary payer in schizophrenics with suicidal behavior was Medicare (42.1%), followed by Medicaid (40.7%). Suicidal behavior in schizophrenia patients was associated with a higher comorbidity rate of drug abuse (adjusted odds ratio [AOR]=1.36, $p<0.001$), alcohol abuse (AOR=1.14), tobacco smoking (AOR=1.85), medication nonadherence (AOR=1.29), depression (AOR=2.74), other neurological disorders (AOR=1.27), AIDS (AOR=1.34), obesity (AOR=1.37), hypertension (AOR=1.11), and hypothyroidism (AOR=1.17). **Conclusion:** Suicidal behavior was more common among White male schizophrenics with medication nonadherence and was significantly associated with comorbidities of substance abuse and depression. Thus, identification and active treatment of depression, improving adherence to treatment, and maintaining special attention to patients with comorbid substance use disorders are essential and are likely to reduce the risk of suicidal behavior in schizophrenia.

No. 82

Zika Virus Exposure in Utero as a Risk Factor for Schizophrenia

Poster Presenter: Johnathan Trent Pierson

Co-Author: Rif S. El-Mallakh, M.D.

SUMMARY:

Background: The pathophysiology of schizophrenia is unknown, but there appears to be an association between intrauterine exposure in the second trimester and neurotropic infections. This has been seen with the 1918 flu pandemic, which appeared to be related to a spike in the incidence of schizophrenia in children of women who were pregnant at the time. **Hypothesis:** Zika virus is a neurotropic virus that has been associated with various neurologic abnormalities in the brains of children exposed to it in utero. While the most significant abnormalities occur with exposure to the virus in the first trimester, abnormalities occurring with second trimester exposure have also been noted. It is proposed that Zika exposure in the second trimester may increase the risk of development of schizophrenia in vulnerable individuals. **Discussion:** The current evolving Zika

epidemic presents a unique opportunity to examine the hypothesis of the role of neurotropic infections in the pathogenesis of schizophrenia. If the hypothesis is accurate, and if Zika has the particular propensity to damage key developing pathways, such as the mesocortical tract, then this current epidemic may presage a spike in the incidence of schizophrenia in another 15 to 20 years. Recruitment of women who become infected with Zika while still pregnant into a database, and following these women and their offspring into the early adult years, would appear to be a reasonable study. **Conclusion:** The current Zika epidemic provides a valuable opportunity for researchers interested in the pathogenesis of schizophrenia to prospectively examine a central hypothesis.

No. 83

A Case of Prolonged Catatonia Lasting Over One Year

Poster Presenter: Bruce D. Bassi, M.D., M.S.

Co-Authors: Jillianne Grayson, Angela Camacho, Mahdi Razafsha, M.D.

SUMMARY:

In this case report, we present one of the most prolonged cases of idiopathic catatonia. There is only a small number of published reports of idiopathic catatonia with no prior psychiatric diagnosis lasting beyond one year. This is a case of catatonia in a 39-year-old male with no past psychiatric history and medical history significant for hypertension who demonstrated a fluctuating course of retarded catatonia consisting of stupor, mutism, catalepsy, negativism, and waxy flexibility for over one year. He had previously been a highly functioning individual who attended college, published a book and ran a business. A few weeks prior to his first admission, he elected to stop his blood pressure medication, metoprolol, since he was not feeling well. Subsequently, his systolic blood pressure spiked to 280, which prompted admission to a tertiary care facility, during which he began having "staring spells." His hospital admissions over the following year were complicated by deep venous thrombosis, pulmonary emboli, a small occipital lobe stroke, and pancreatitis. Due to his inability to feed himself, a PEG tube was placed. He was transferred to UF Health Shands, where we assumed his care. He

underwent a full neurological workup including brain MRIs, EEGs, LPs (normal CSF, negative oligoclonal bands, VDRL, cryptococcal antigen, paraneoplastic panel, NMDA receptor antibody), and serum studies (negative HIV, RPR, ANA, TPO antibody, antiphospholipid antibody panel, ANCA, NMDA receptor antibody, AFP, B-HCG, HSV). He subsequently received ten rounds of ECT and intermittently showed some improvement following these sessions; however, he required transfer to the medicine service for treatment of abdominal wall infections. Trials of lorazepam (up to 8mg daily), zolpidem (up to 30mg daily), risperidone, ziprasidone, aripiprazole, levetiracetam, IVIG, carbidopa-levodopa, methylphenidate, and sertraline have not led to sustained improvement. On the Bush-Francis Catatonia Rating Scale, he fluctuated between approximately 2 and 22. Some days, he was quite responsive and verbal, but not fully oriented and never maintained insight into his disorder. One day in particular, he was able to talk about his enjoyment of fashion design, Olympic games, religious beliefs, and his substantial guilt of "being around the wrong crowd." He specifically stated that he believed the reason for his catatonia was "a little bit of depression." This was not confirmed by his family, who adamantly denied any prior psychiatric history. He had been receiving lorazepam and zolpidem at this time, but after several hours, he returned to his catatonic state. The psychiatry team continues to search for an optimal treatment for this gentleman.

No. 84

A Case Report of Adderall-Induced Bizarre Delusions

Poster Presenter: Michael R. Harrigan, M.D., M.B.A.

Co-Authors: Rassam Khan, Vandana Doda, Asghar Hossain

SUMMARY:

Background: Adderall is a stimulant medication, a mixture of D and L isomers of amphetamine. Adderall is used in many psychiatric disorders, including ADHD. Chronic and high-dose consumption of Adderall can cause psychosis, presented as delusions, hallucinations, agitation, and anxiety resembling schizophrenia. **Objective:** Report the association of Adderall use and psychosis presented

as bizarre delusions and the possible role of life stressors in the development of Adderall-induced psychosis. **Methods:** A literature search was done using PubMed on "Adderall induced psychosis," "Amphetamine overdose" and "Amphetamine induced psychosis." **Case:** We present a case of a 55-year-old male with a year-long history of bizarre delusions and visual hallucinations. The patient reported being attacked by gamma rays by airplanes, infecting his blood with radiation. These delusions worsened by recent life stressors, first being laid off from his job and second hearing about his family being executed in Syria. The patient had been taking prescribed Adderall for ADHD for the past six years. He reported taking Adderall more than the prescribed dose. Multiple hospitalizations for delusions were reported in the past year. On examination, he was obese with anxious mood, goal-directed thought process and poor judgment. A diagnosis of Adderall-induced psychosis was made, and the drug was ceased. He was monitored closely for withdrawal symptoms, and a CT ruled out any intracranial pathobiology. The patient improved within a week of stopping Adderall, and no delusions or hallucinations were reported in the follow-up visits. **Conclusion:** Adderall can lead to psychosis with bizarre delusions and hallucinations similar to schizophrenia when used chronically and in higher than the recommended dose. Physicians should be cautious while prescribing Adderall, as substance abuse is common. More studies are needed to determine if life stressors and other social factors (loss of job and execution of family back home in this case) decrease the threshold of development of psychosis in patients taking Adderall. Physicians should screen patients for past history of substance abuse, other psychiatric disorders and life stressors before prescribing Adderall for various psychiatric disorders.

No. 85

Adjunctive Therapy With Minocycline for Negative Symptoms of Schizophrenia

Poster Presenter: Krupa Pathak

Co-Authors: Kris Ruanghotvit, Carolina Retamero, M.D.

SUMMARY:

Background: Schizophrenia is a mental health illness

creating impairments in functional status and behavior. One subtype of schizophrenia is known as negative symptoms of schizophrenia (NSS). Although clozapine is a well-known second-generation antipsychotic that can be used to treat NSS, its side effect profile makes searching for alternatives a priority. Currently, there are no specific FDA-approved treatments for the NSS. However, the literature suggests using antipsychotics with minocycline to improve NSS and cognitive deficits.

Case: We present a case of a 50-year-old African-American woman with schizophrenia who presented for worsening psychosis and aggressive behavior. The patient was reported to have a long history of schizophrenia and noncompliance to medications. She was diagnosed with paranoid schizophrenia in 1995 and has since had multiple psychiatric hospitalizations and was previously treated on olanzapine, Haldol and Risperdal. On the patient's initial presentation, she was agitated, difficult to engage in conversation and disorganized in thought content, with poor memory with difficulty in concentration and a blunted affect. She was started on olanzapine, which was titrated to 30mg per day for severe paranoia. Prozac was titrated to 40mg per day for depressed symptoms. Furthermore, the patient was placed on minocycline 100mg twice daily as an adjunct therapy.

Methods: The patient's progress was monitored using PANSS and SANS scores. Significant clinical difference in negative symptoms was seen after a week of addition of minocycline.

Discussion: Most of the literature agrees that minocycline helps with negative symptoms in patients with early schizophrenia. In our case, we find improvements of negative symptoms in a patient with chronic schizophrenia. How does minocycline improve negative symptoms of schizophrenia? Minocycline is a broad spectrum, second-generation tetracycline antibiotic. Its mechanism of action (MOA) is blocking the 30s ribosomal protein synthesis in bacteria. Its FDA-approved indications are for acne vulgaris, chlamydia and meningitis. Utilizing minocycline as an adjunctive therapy with antipsychotics can 1) enhance glutamate NMDA receptor activation; 2) inhibit microglial activation; 3) decrease apoptosis of neuronal cells; and 4) reduce free radical species.

Conclusion: Minocycline along with an antipsychotic

can treat and improve negative symptoms of early and chronic schizophrenia.

No. 86

"Seed of Brazil" Induced Psychosis: A Case Presentation and Literature Review

Poster Presenter: Brent Jakubec

SUMMARY:

Background: With the rise in obesity and related risk of mortality, people are turning to herbal supplements as an easy and fast alternative to control their weight. "Seed of Brazil," more commonly known as candle-nut seeds, is one example of an ever-expanding list of such products that often attract users due to their claims, perceived lack of medical oversight, easy availability, and low cost. The aim of this poster is not intended to draw direct conclusions about this product, but to expand awareness on herbal supplements, specifically ones marketed toward weight loss, and potential psychiatric complications from their use or misuse.

Case: We present a case of a 52-year-old Hispanic female with a history of depression, hypertension and diabetes, controlled on medications, who presented to the psychiatric emergency center voluntarily for new-onset psychosis. The patient had reported starting an herbal supplement prior to the onset of psychosis. The patient was subsequently admitted into a psychiatric inpatient unit for medical evaluation and started on antipsychotic medications. Initial lab workup reported elevated hepatic enzymes. Autoimmune, cerebrovascular and infectious disorders were ruled out, and psychological testing, as well as clinical and diagnostic, suggested psychosis secondary to toxic substance. Symptoms resolved on cessation of herbal supplement and treatment with antipsychotic medication.

Discussion: Worldwide, at least 2.8 million people die each year as a result of being overweight or obese. Studies suggest that 15.2% of American adults use nonprescription dietary supplements for weight loss, and about three-quarters of these are obtained without a prescription from a medical provider. Although the literature is extensive in regard to herbal supplements inducing psychosis, especially ones containing ephedra, there are few specifically identifying "Seed of Brazil" as a causative

agent. In our clinical case, the patient had reportedly been ingesting more product—candle-nut seeds—than what was recommended, developed psychotic symptoms and was subsequently admitted into a psychiatric facility. The patient’s labs revealed elevated liver enzymes, abdominal CT showing hepatic steatosis and head CT resulting with no intracranial pathology. The patient’s clinical symptoms, as well as psychological evaluation, suggested that the psychosis was secondary to toxic exposure. The patient was hospitalized for several weeks, on antipsychotic medications, until symptoms partially resolved. The patient was free of symptoms by her follow-up appointment in the outpatient clinic. **Conclusion:** In the case presented, it is suspected, although not confirmed, that a correlation exists between the patient initiating the herbal supplement “Seed of Brazil” and developing psychotic symptoms. Limitations of the study included ruling out confounding factors and the paucity of literature.

No. 87

Use of Risperidone in a 56-Year-Old Female Presenting With Psychosis in the Setting of Hypertensive Crisis: A Case Report

Poster Presenter: Christina E. Repicky

SUMMARY:

Hypertensive encephalopathy presents as a constellation of symptoms of altered mental status that can include changes in personality, hallucinations and delusions that can be consistent with a primary psychotic disorder. This is a case of a 56-year-old female with no known psychiatric history prior to 2014 who presented on a 5150 involuntary hold for 72 hours for grave disability and admitted to the locked psychiatric ward for disorganized behaviors, delusions and response to internal stimuli. Her presenting blood pressure to the emergency department was 210/104mmHg; that was reduced to 144/79mmHg prior to admission. Her home antihypertensive regimen was reinitiated based on her most recent medical records: amlodipine 10mg and lisinopril/HCTZ 40mg/25mg. After four days of antihypertensive medications and no requirement of emergent antipsychotic medications, the patient continued to have persistent delusions of transgender identity,

speaking in incomprehensible Scottish brogue, irritability, disorganized behaviors, talking to unseen persons, and poor personal hygiene. The patient was placed on a 5250 involuntary hold for 14 days for ongoing grave disability. As she was not improving with persistent blood pressure control under 150/90, the decision was made to initiate antipsychotic medication—risperidone M-tab 2mg. Within 48 hours of initiating treatment, the patient’s mental status began to normalize and psychotic symptoms clear. She was able to provide a more detailed medical history with poorly controlled hypertension since her 20s, multiple strokes and four prior hospitalizations for psychosis. Review of the literature confirms psychotic delirium as a presentation of hypertensive encephalopathy, but there is not much with regard to treatment other than reversing the cause of the delirium. As the patient’s blood pressure had been controlled for 120 hours without significant improvement in her mental status or functional status, the benefit of using antipsychotic medications to assist in stabilizing the patient’s dopaminergic neuronal pathways can potentially reduce long-term morbidity and decrease length of hospitalization. It presents preliminary evidence about using long-term dopamine blockade at low doses to prevent future brain damage should blood pressure become uncontrolled in the future.

No. 88

Myxedematous Psychosis: A Commonly Overlooked Diagnosis

Poster Presenter: Omar D. Gonzales

Co-Author: Caesa Nagpal, M.D.

SUMMARY:

Background: Hypothyroidism is a clinical syndrome resulting from a deficiency in thyroid hormone that can present with variety of psychiatric presentations, most commonly forgetfulness and fatigue, problems with attention, depression, delusions, and hallucinations. While previously considered a late manifestation of disease, accumulating evidence indicates that psychosis can occur at any point in the disease process. We report a case of a 50-year-old male who presented with complaints of “the government placing a computer chip in my back,” with prime focus on psychosis associated with hypothyroidism, which is often overlooked. **Case:**

Mr. F., a 50-year-old homeless male with previous diagnosis of bipolar I disorder, amphetamine abuse, cocaine abuse, opiate abuse, and benzodiazepine abuse, as well as hypothyroidism, was admitted to an acute psychiatric facility after expressing paranoid delusions of the government placing computer chip in his back that produced a shocking sensation and transmitted his voice in several languages into the minds of anyone nearby. The patient's mental status exam was significant for pressured speech, a perseverative and illogical thought process, paranoia, and delusions with poor insight and judgment. Review of systems was notable for lethargy, dry skin, joint aches, and constipation. Urine drug screen on admission was positive for amphetamines. His routine blood work was clinically insignificant except for TSH 22.310uIU/mL with low T3 and T4 levels. He was noncompliant to all psychotropics and levothyroxine for many months. He was started on risperidone 2mg per day along with levothyroxine 125µg per day. At the time of discharge, he was much less preoccupied with delusions, his affect was reactive, he denied any other psychotic symptoms, and he had much improved appetite and sleep. He was discharged with follow-up with his primary care physician for hypothyroidism and psychiatric follow-up for bipolar disorder and was encouraged to refrain from illicit drug use. **Discussion:** There is no clear association between the degree of hypothyroidism and the presence of psychotic symptoms in hypothyroidism with psychosis. Moreover, there is no uniformity in presentation of psychotic symptoms. It is imperative to remember many patients presenting with psychiatric disorders may have medical problems that can be causing or complicating the management of an underlying psychiatric illness. This case illustrates the importance of routine thyroid panels and the need to rule out organic causes of psychiatric symptoms in all patients presenting acutely with psychiatric changes. **Conclusion:** Thyroid disease should be considered in the differential diagnosis of a large spectrum of psychiatric symptoms.

No. 89

Speech-Prompt Catatonia

Poster Presenter: Gaurav Kumar

SUMMARY:

Mr. D. is a 31-year-old never-married, domiciled, unemployed, African-American male veteran with a history of schizophrenia who presented to the emergency department with command auditory hallucinations and suicidal ideation without a specific plan. Mr. D. had difficulty answering questions and was often unresponsive or minimally responsive until prompted firmly multiple times. He had intermittent moments of stooped posturing, appearing distracted by internal stimuli, and the majority of questions were answered with short replies stating "yes," "no" or "I don't know." Answers were delivered in stereotyped reflex-like fashion, irrespective of the question's content, and were frequently contradictory. Catatonia syndrome presents with a constellation of motor and behavioral signs and symptoms. Speech-prompt catatonia is one of the six catatonic subtypes listed in Leonhard's simple systematic subtypes of schizophrenia in 1979. Speech-prompt catatonia occurrence is well documented in literature. Clinicians who have not encountered this phenomenon may base the history on the "yes" or "no" responses, arriving at erroneous conclusions. In this poster, we discuss speech-prompt catatonia and the importance of a thorough history and obtaining collateral information.

No. 90

God Delusion in a Schizophrenic Patient: A Case Report

Poster Presenter: Heena Patel

Co-Authors: Harkirat Kaur, M.S., Saveera Sidhu, John Knox, Sanjay Advani

SUMMARY:

Background: Religiosity often plays a starring role in psychotic disorders, where some schizophrenic sufferers have the delusional belief that they are God. These grandiose delusions tend to have higher positive symptoms, function less well and are more medicated than other types of grandiose schizophrenia. Sufferers tend to be highly convinced in their delusion, as they will dress and act in a grandiose manner, bitterly refusing any evidence contrary to their godliness. Prevalence of religious delusions in schizophrenia varies widely depending on the cultural, ethnic and national populations.

Objective: Highlight a rare case of a patient with God delusion and course of treatment. **Methods:** We present a case report of a patient with God delusion. **Case:** The patient was diagnosed with schizophrenia and after a course of Thorazine was put on haloperidol. **Discussion:** The current case is of a middle-aged male with a past history of schizophrenia, who was admitted with psychosis, suicidal ideation and the belief that he was “God from California.” His schizophrenia was previously well controlled, but he had been nonadherent with medications. He had a history of prior suicide attempts and inpatient psychiatric hospitalizations. At the time of admission, the patient maintained poor eye contact and displayed reduced motor activity. The patient denied any visual hallucinations but endorsed auditory hallucinations. He laughed inappropriately multiple times throughout the interview. Once admitted to the unit, he was started on Thorazine for psychosis. Five days later, he was transferred to a chronic unit, and Thorazine was increased to break the psychosis. When that was ineffective after two weeks, Thorazine was discontinued and haloperidol IM was started, with another dose of haloperidol IM given one week later. Within three days, the patient improved drastically. He was no longer psychotic, denied auditory hallucinations, and had an appropriate and mood-congruent affect. Despite his history of Thorazine treatment, his psychosis was more effectively treated with IM haloperidol, which remains an effective medication to break psychosis. **Conclusion:** We concluded that Thorazine may be insufficient to reduce the delusions in schizophrenia and that combining it with IM haloperidol may be a better course when all else fails.

No. 91

Specificity of Cognitive Control and Prefrontal Gamma Impairment in Schizophrenia

Poster Presenter: Manu S. Sharma, M.D.

Lead Author: Manu S. Sharma, M.D.

Co-Authors: Nicola R. Polizzotto, Christopher P. Walker, Nithya Ramakrishnan, Raymond Y. Cho

SUMMARY:

Background: Cognitive control—a system that modulates the operation of other cognitive processes in the service of goal-directed behavior—

is a core deficit in chronic schizophrenia, and its association with frontal cortical gamma oscillatory disturbances suggests a way to integrate molecular findings and models of cognition. First-episode studies showed that such impairment is present at the first psychotic episode and is independent of medication status. However, the diagnostic specificity of such findings is unclear. Evidence suggesting overlapping molecular underpinnings and greater cognitive impairment when other disorders, such as bipolar disorder, present psychotic features makes a dimensional perspective on cognitive impairment in psychotic disorders appealing. In this first-break study, we address cognitive control-related prefrontal gamma impairment in schizophrenia and in a comparator group of psychotic non-schizophrenia patients. **Methods:** Sixty-two healthy controls (HC) were compared to 101 first-episode psychosis patients (FEP) performing the Preparing to Overcome Prepotency (POP) task. FEP subjects included 59 schizophrenia (SZ) patients and 42 psychotic controls (PC). Diagnoses were confirmed using the Structured Clinical Interview for the *DSM-IV-TR*. Exclusion criteria were prior history of neurological illness, substance dependence within six months of testing, uncontrolled medical illness, ECT, and prior treatment for psychosis. High-density EEG data were collected during task execution. Wavelet convolution allowed us to perform time-resolved spectral analysis and therefore assess group differences in the gamma band activity induced during the control phase of the task. **Results:** Groups did not differ in accuracy; however, they differed in reaction time ($F=6.13$, $p<0.01$); both psychosis groups were slower than the healthy controls. Critically, an interaction with task condition was also observed ($F=3.18$, $p<0.05$), with SZ patients relatively more impaired in the incongruent, high cognitive control trials. EEG analysis showed a complex pattern of results. Focus on prefrontal gamma activity highlighted group differences congruent with behavioral findings over left frontal electrodes. The increase in gamma in the high control condition was reduced in the FEP, being most impaired in the schizophrenia group ($p<0.05$). **Conclusion:** This study replicates previous findings supporting an early, medication-independent involvement of cognitive control in SZ and strengthens the emphasis on high-frequency oscillatory activity in prefrontal cortex

ensembles as putative pathophysiological substrate. Furthermore, the study provides new evidence that suggests that cognitive control is more impaired than in other psychotic disorders. However, some support for a dimensional perspective is also provided, as PC showed some degree of prefrontal gamma impairment, which is possibly still within the boundaries of compensation, as it does not lead to behavioral impairment.

No. 92

Understanding the Role of Dabbing: A Young Female With First-Episode Psychosis

Poster Presenter: Jai C. Gandhi, M.D.

Co-Authors: Marilyn Holman, M.D., Thomas Soeprono, M.D.

SUMMARY:

Background: Dabbing (inhalation of concentrated THC) is an increasingly pervasive method of substance use. There is a dearth of research, though existing research on high doses of cannabis and use of cannabis suggest an association with psychosis that warrants further investigation and attention.

Case: Ms. S., an 18-year-old female without significant past psychiatric history, presents to the hospital after stabbing herself in the neck with a knife, with unclear rationale. On initial presentation, she was unable to provide much reliable historical information, with vague responses; important stressors included a turbulent housing situation, recent death of her dog, recent breakup with her boyfriend, and two months of dabbing. Her mother provided collateral information, including that the suicide attempt was in stark contrast to the patient's normal methods of distress tolerance. The patient had been exhibiting withdrawal and increased response latency that had worsened over the previous two months. Her urine drug screen confirmed use of cannabis. Comprehensive workup did not yield other significant findings. Collateral information suggested the patient was at her baseline behavior (attending school, completing her activities of daily living spontaneously and independently) two months prior to admission; there was significant concern about the effect of high-concentration THC on her presentation. She was initially uptitrated on quetiapine, then cross-titrated to risperidone soluble tablets, and then

cross-titrated to olanzapine. She endorsed or demonstrated auditory hallucinations, persecutory delusions, delusions of thought insertion, significant response latency, and blunted affect. She would intermittently describe command auditory hallucinations that prompted suicidal ideation, and she required prompting to eat and shower. On olanzapine, her positive symptoms diminished, and she began to engage in eating and showering spontaneously. **Discussion:** The treatment-resistant nature of her symptoms in a scenario of first-episode psychosis elicits questions about the impact of dabbing prior to admission. Although there is evidence of an association between marijuana and psychotic illness, less is understood about the acute effects of dabbing. The lack of knowledge about the potential severity and duration of symptomatology attributable to high-concentration THC raises questions about whether the most effective treatment for Ms. S. was the use of the appropriate antipsychotic or abstinence from use of cannabis. Additionally, although her presentation suggests symptoms consistent with schizophrenia, the short duration of illness, minimal prodrome, and confounding use of marijuana raise questions about whether her psychotic illness was substance induced or merely precipitated by her substance use, as evidence has also demonstrated cannabis use is associated with earlier onset of psychotic symptoms.

No. 93

Psychotic Disorder as a Sequel to Traumatic Brain Injury in a Middle-Aged Male

Poster Presenter: Oluwakemi A. Aje, M.D.

SUMMARY:

Psychosis has been described as a rare but serious sequel to traumatic brain injury, and studies of primarily closed head injuries report rates of occurrence from 0.9% to 8.5%. Our patient is a middle-aged African-American male with no past psychiatric diagnosis prior to suffering a traumatic brain injury at the age of 38. He was sent to the outpatient clinic by his probation officer for treatment of his psychosis and a full mental health assessment. He was involved in a car accident in which he was an unrestrained rear seat passenger. The patient sustained severe injuries with cervical fracture and required a neck frame. He also suffered

head injury with loss of consciousness for several hours. The patient required traction of the neck and surgery. He reported command auditory hallucinations with paranoid ideations in the context of auditory hallucinations to the point of staying indoors to avoid attacking people and responding to the voices. He endorsed visual hallucinations, seeing stars flashing. He endorsed thought insertion, thought broadcasting, ideas of reference, and hearing the radio talk to him. He reported frequent awakenings, almost every hour, due to auditory hallucinations and appeared distressed from sleep deprivation. The patient reported that he occasionally experiences low mood and feelings of guilt with loss of interest in enjoyable activities due to his present state and joblessness. He denied poor concentration, appetite changes, suicidality, or low energy. He was also found to have cognitive deficits. The patient reported self-medicating with drugs to make the voices go away in the past, but has been clean since incarceration for drug distribution. The patient was treated with asenapine 5mg sublingually twice daily, titrated up to 10mg twice daily, and his symptoms of psychosis improved as well as his sleep. Our patient had no symptoms of psychosis prior to the traumatic brain injury, and no other predisposing factors were identified. He had no family history of mental illness.

No. 94

Behavioral and Psychiatric Manifestation in Patients With XYY Syndrome (Jacob's Syndrome): Case Report and Systemic Review

Poster Presenter: Muhammad Navaid Iqbal, M.D.

Co-Authors: Hector Cardiel, Edward Hall, M.D., Asghar Hossain

SUMMARY:

Forty-seven XYY syndromes affect one in 1,000 male births. The disease is the result of an error during sperm cell metaphase that results in the donation of an extra Y chromosome. Patients with this anomaly suffer from atypical physical presentations, which most often include disproportionate height and dysmorphic facial features. Many of these individuals also suffer from speech and language delays, cognitive impairments, learning problems and social isolation that creates a stigma in social class. Many studies have linked increased rates of

autism, ADHD, and psychiatric, behavioral and neurological disorders among children and young men suffering from XYY syndrome. They commonly present with difficult and defiant behavior, temper tantrums, and criminal associations such as stealing, burglary, arson, etc. Other mental illnesses that affect XYY individuals include major depression, social anxiety, and suicide attempt secondary to environment stress and mental breakdown. Studies conducted in the last 20 or 30 years do not contribute much to the understanding of the real clinical impact of the extra Y chromosome. In this poster, we report a case of a 12-year-old XYY foster child who was admitted to Bergen Regional Medical Center secondary to agitation, verbal and physical aggression, defiant and fire-setting behavior, and suicide attempt. He has been in foster care since infancy due to abuse and neglect by his parents. His biological father exhibited XYY chromosomal features, which included asymmetrical vertical growth, impulsivity and academic difficulties. He himself does not exhibit these phenotypic features. He also exhibited problems with learning to read and word recognition. He was diagnosed with oppositional defiant disorder, posttraumatic stress disorder, schizotypal personality disorder, and learning disability, with moderate response to medications. The purpose of this case report and literature review is to examine the association of behavioral and psychiatric manifestations in males diagnosed with XYY syndrome, as there is a scarcity of controlled studies about the neurological, cognitive and behavioral decline in such patients, which remains the main reason for anxiety and anticipatory negative attitudes. Our purpose is to shed light on new and appropriate educational interventions that target the specific learning challenges of XYY patients.

No. 95

Community-Acquired Psychosis: A Case of Mycoplasma Pneumonia Encephalitis

Poster Presenter: Muhammad Navaid Iqbal, M.D.

Co-Authors: Pooja Mehta, Asghar Hossain

SUMMARY:

Mycoplasma pneumonia, one of five organisms in the class Mollicutes, is a common cause of primary atypical pneumonia. While most cases of atypical

pneumonia are limited to flu-like symptoms, more severe cases causing neuropsychiatric changes have also been reported. In this poster, we will present a case report of *M. pneumonia* with extrapulmonary and neuropsychiatric complications. A 29-year-old Caucasian male with multiple inpatient psychiatric hospitalizations at Bergen Regional Medical Center has been diagnosed with schizoaffective disorder, bipolar type. At the age of 15, he was exposed to *M. pneumonia*, after which he developed encephalitis followed by psychiatric symptoms (paranoid delusions, auditory hallucinations and bizarre behavior). Encephalitis is the most common extrapulmonary complication of *M. pneumonia*, with signs including fever, seizures, ataxia, neurological deficits, and altered mental status. Neuropsychiatric symptoms associated with *M. pneumonia* include disorientation, visual and auditory hallucinations, bizarre behavior, and paranoid delusions. The pathophysiology behind *M. pneumonia*-induced psychosis has yet to be confirmed; however, multiple hypotheses—direct invasion, neurotoxin production and autoimmune secondary to molecular mimicry—have been made. Treatment of neurologic complications from *M. pneumonia* is variable, depending on presenting features. Conventional treatment includes antibiotic regimens with a macrolide or fluoroquinolone, with corticosteroids and IV immunoglobulins used as adjunctive treatment. In the rarer cases of mycoplasma encephalitis, when behavioral or psychotic symptoms are present, benzodiazepines and antipsychotics are used to alleviate symptoms. While we know to give antibiotics for *M. pneumonia*-induced encephalitis and antipsychotics for the psychotic features, the relationship between timing of treatment and prognosis is still unknown. Our patient was started on doxycycline immediately after being diagnosed with *Mycoplasma pneumonia* and continued treatment for at least three years. Additionally, he was started on antipsychotic medications one month after presentation of his psychotic symptoms. It has been 14 years since the patient's initial illness of mycoplasma encephalitis, and his psychotic features continue to persist. Our poster underscores the fact that awareness should be made regarding *Mycoplasma pneumonia*-induced psychiatric complications in order to ensure proper management plan and strategies. Many questions

still need to be addressed, and further research into this topic is required to unravel some important questions about this ailment.

No. 96

Latent Toxoplasmosis and Development of Alzheimer's Dementia: A Case Report

Poster Presenter: Muhammad Navaid Iqbal, M.D.

Co-Authors: Naveed Butt, Pooja Mehta, Faiz Cheema, M.D.

SUMMARY:

Background: Toxoplasmosis is a disease infecting about one-third of the world population, especially the developed world. Its most common form is latent toxoplasmosis, in which the parasite resides in the human body for a prolonged period and may infect brain and muscular tissue by forming cysts in brain cells, including astrocytes and neurons, leading to various psychiatric and behavioral disorders, as well as mental illness. **Objective:** Report a case of early onset of Alzheimer's dementia in a patient tested positive for toxoplasmosis through imaging studies and neuropsychological examination and highlight the importance of early intervention to prevent disease progression. **Case:** Our case is a 59-year-old Dominican female who was admitted to Bergen Regional Medical Center secondary to worsening symptoms of dementia with problems in learning, recent and remote memory, increasing confusion, and inability to care for activities of daily living and instrumental activities of daily living. She also developed behavioral and psychiatric symptoms such as increased agitation, aggression, disorganized thoughts, and increased paranoid delusions. She was diagnosed with dementia and early signs of Alzheimer's at age 51 in the Dominican Republic based on her clinical presentation. On further investigation at our hospital, the patient's CT scan revealed presence of old cranial microcalcification, which indicated previous toxoplasmosis infection and/or genetic or autoimmune disorders.

Discussion: Alzheimer disease (AD) is a chronic progressive neurodegenerative disorder that has a mainly unknown multifactorial etiology. Neuroinflammatory mechanisms once initiated in response to neurodegeneration or dysfunction may actively contribute to a cascade of events of disease progression and chronicity, leading to neuronal

degeneration. Studies conducted in the past suggest an indirect correlation of toxoplasmosis infection with Alzheimer's dementia. Toxoplasma encephalitis—a common presentation of *Toxoplasma gondii* infection, most commonly affects the cerebral hemisphere, followed by the basal ganglia, cerebellum and brain stem in the CNS. Higher prevalence of *Toxoplasmosis gondii* in patients with AD shows the possible impact of this parasite in AD, which may exacerbate symptoms, and this requires special attention of specialists and patient families. **Conclusion:** The overarching aim of this case report is to underscore the fact that latent toxoplasmosis infection is an important risk factor in the development of Alzheimer's dementia, and therefore, a high index of suspicion must be maintained in patients who present with early signs and symptoms of Alzheimer's disease. The early detection and treatment of Alzheimer's dementia may help in preventing progression of the disease process and improve outcome.

No. 97

The Relationship of Depression-Related Symptoms Among PANSS, HAMD-21 and MADRS in Patients With Treatment-Resistant Schizophrenia Using Clozapine

Poster Presenter: Junghyun Kim

Co-Authors: In Won Chung, Yong Sik Kim, Youngwook Jeong, Tak Youn, M.D., Nam Young Lee, Se Hyun Kim, Tak Youn, M.D.

SUMMARY:

Background: The depressive symptom is frequently associated in the course of schizophrenia and also related to antipsychotics like clozapine as secondary depression or primary dysphoria in terms of side effects. Even though HAMD-21 and MADRS have been used widely in the clinical research of depressive disorders, the last four items of the HAMD-21 were not calculated in the total score due to rarity and low internal consistency. This study was to explore the relationship of depression-related symptoms evaluated with assessment scales in patients with schizophrenia using clozapine.

Methods: Fifty-six patients who were diagnosed with *DSM-IV* schizophrenia, treated with clozapine and completed the Positive and Negative Syndrome Scale (PANSS), the Hamilton Depression Rating

Scales (HAMD-21), and Montgomery Åsberg Depression Rating Scale (MADRS) in a same day were retrospectively selected in the electronic medical records. We analyzed the associations of the total scores and each item score of the three scales by dividing the results into two groups: a score of 1 or 2 on the PANSS subscales and those who scored over 2. The statistical analysis was used with t-test and analysis. The statistical significance was set at 0.05. **Results:** There were statistically significant correlations between total scores of the PANSS, HAMD-21 ($p=0.030$) and MADRS ($p=0.021$). Depression/anxiety factor score of PANSS also correlated with total scores of HAMD-21 ($p=0.000$) and MADRS ($p=0.000$). In the comparison of subscales of PANSS, positive delusion (P-1) showed significant higher score on the HAMD item 20 (paranoid) but neither total scores of HAMD-21 nor of MADRS. Hallucinatory behaviors (P-3) showed higher score on item 18 (diurnal variation-A) and total score of HAMD-21, and none of MADRS. Positive anxiety (G-2) showed higher scores of items 2, 7, 8, 10, 11, 20, 21, and total score of HAMD and items 3, 6, 9, and total score of MADRS. The group of depression (G-6) showed higher scores of items 1, 2, 5, 7, 10, 11, 12, 18, 19, and total score of HAMD and higher scores of items 1, 2, 7, 8, 9, and total score of MADRS. The group of negative insight showed higher scores of items 6 and 17 of HAMD, but none of MADRS. The PANSS-D, which is composed of somatic concern (G-1), anxiety (G-2), feeling of guilt (G-3), and depression (G-6), was very strongly correlated with HAMD-21 ($r=0.797$) and MADRS ($r=0.676$), respectively. **Conclusion:** As for consideration of the depression-related symptoms in schizophrenia, HAMD-21 would be more useful than HAMD-17, including four items of diurnal variation, depersonalization/derealization, paranoid symptoms, and obsessive-compulsive symptoms. More extensive analysis of depression-related symptoms associated with other psychotic symptoms or antipsychotic-induced side effects would be required for the treatment of schizophrenia.

No. 98

Treatment of First-Episode Psychosis in a Synthetic Cannabis Smoker: Is There a Case for Typical Over Atypical Antipsychotics?

Poster Presenter: Ahmad Umair Janjua
Co-Authors: Naveed Butt, Bora Colak, Asghar Hossain

SUMMARY:

Background: Recent instances of first-episode psychosis secondary to the use of synthetic cannabinoid (SC) demands exploration of treatment options. **Case:** We describe a case of SC-induced psychosis in a previously healthy 25-year-old male with no prior psychiatric history. He presented with persecutory delusions, visual hallucinations, disorganized thoughts, and aggressive behavior following the use of synthetic marijuana or “K2.” The patient became hypervigilant and ran in severe distress toward a city bus and was found only in his underwear. He endorsed “K2” use for the last few months and sleep deprivation in the days preceding the event and denied significant recent stressors and any other substance abuse. **Methods:** A case report is described on first-episode psychosis (FEP) in the context of SC-induced psychosis successfully treated with haloperidol. We also present a review of literature on this topic. **Results:** Urine toxicology was negative for THC, but no “K2”-specific urine test was ordered. The patient was admitted involuntarily and started on haloperidol 5mg twice daily. Psychotropic treatment led to resolution of psychosis with no adverse effects. On day 4, the patient was discharged on haloperidol with recommendations for outpatient follow-up. **Conclusion:** Patients with SC-induced psychosis have a presentation that involves agitated and aggressive behavior. Cases have discussed acute management options including quetiapine, risperidone, benzodiazepines, and olanzapine. Little evidence is present favoring use of typical over atypical antipsychotics for treating FEP in this population. Meta-analysis recently conducted among FEP patients without substance abuse displayed no significant difference in efficacy between the two groups. Pharmacotherapy decisions have been guided mainly by adverse effect profiles, as typical antipsychotics are associated with higher rates of extrapyramidal side effects, especially in young male populations. Most clinical experts recommend using atypical over typical antipsychotics in the treatment of FEP; however, such studies have mostly excluded substance abusers from participating in the clinical trials. This

calls to question these recommendations in this segment of the population. In the absence of strong clinical evidence favoring one class over another, treating acute cases of FEP using first-generation antipsychotics such as haloperidol may be strongly considered in certain clinical settings because of availability, cost and physician experience with such medications. Our case study presents an example where using a high-potency typical antipsychotic in the acute setting was highly effective without reported adverse effects.

No. 99

It’s All in the Genes: A Case Report of Alport Syndrome and Schizophrenia

Poster Presenter: Aamani Chava, M.D.
Co-Authors: Jessica S. Bayner, M.D., Faiz Cheema, M.D., Sohi Gobind, Asghar Hossain

SUMMARY:

Background: Alport syndrome is an X-linked dominant disorder involving a mutation in type-IV collagen causing a basement membrane abnormality in the eyes, ears and kidneys. In rare cases, there is a strong predisposition of psychosis among Alport syndrome involving the same X-linked dominant pattern among family members. This leads to a hypothesis that there could be some degree of genetic linkage between psychosis and the type-IV collagen gene on the long arm of the X chromosome. **Objective:** Review literature from PubMed and report a case of familial Alport syndrome where all males with a known diagnosis of Alport syndrome also had a history of mental illness and psychosis requiring multiple hospitalizations. **Case:** Patient X. is a 29-year-old male with a history of unspecified schizophrenia who was brought to the hospital for bizarre behavior due to noncompliance with medication. The patient presented with aggressive behavior and paranoid persecutory delusions about his family and his psychiatrist. He was under the belief that his food was being poisoned, leading him to eat soap in order to “cleanse” himself. The patient has a history of three previous hospitalizations with similar symptoms. His past medical history includes a diagnosis of Alport syndrome with classic features of nephritic syndrome including proteinuria, hematuria, edema, and hypertension. This required a renal transplant at age 16, and the patient also had

associated sensorineural hearing deficits. Both the patient's father and brother were also diagnosed with schizophrenia, but no such diagnosis was reported among the females of the family.

Discussion: Review of available literature found only one other case that reported psychotic symptoms in conjunction with Alport syndrome. This suggests that there is no etiologic linkage among the disease and psychosis. However, in the reported case, all male members of the family with Alport syndrome had comorbid psychosis. This suggests a strong association and possible close proximity of genes involved in the production of type-IV collagen and psychosis on the same long arm of the X chromosome. Because of the rarity of such phenotypic presentation, no gene mapping studies were ever attempted. **Conclusion:** This case clearly shows strong genetic linkage between Alport syndrome and psychosis. While rare, this combination of unrelated symptoms with strong inheritance represents a unique phenomenon that has been observed in a variety of diseases. Additional research on these occurrences would be of immense benefit to help better understand the pattern of inheritance of the symptoms. This would further benefit the understanding of heritability across different disease spectrums.

No. 100

God, Brains and Butterflies in My Stomach: A Case Report of Treatment-Resistant Schizophrenia With Predominant Disorganized Speech

Poster Presenter: Karen J. Singh

Co-Authors: Pranathi Mruthyunjaya, M.D., Reshma Motiwala, Sanjay Advani

SUMMARY:

Background: Treatment-resistant schizophrenia (TRS) occurs in one-third of all schizophrenic patients and is determined by its severity of positive symptoms, two failed antipsychotic trials from different chemical classes and poor functioning over a five-year period. Patients, especially those with disorganized speech, respond poorly to treatment and have a worse long-term prognosis than non-TRS patients. Atypical antipsychotics are the preferred first line treatment for their effectiveness and reduced risk of neurological side effects in comparison to typical antipsychotics. If satisfactory

clinical response is not seen within seven days, the dose can be increased and a different antipsychotic should be considered. **Objective:** Highlight management of TRS. **Methods:** We present a case report of a patient with TRS and predominant disorganized speech. **Results:** The patient was diagnosed with TRS, and after ineffective treatment with olanzapine and valproic acid, partial remission was achieved with haloperidol. **Case:** A 19-year-old African-American male with a history of diagnosed schizophrenia was court-committed to the state psychiatric hospital. He had been in jail for violating a victim protective order (VPO) against his ex-fiancé. On admission, he presented with grandiose delusions, disorganized thought process, denial of substance abuse, and no reported homicidal or suicidal intentions. His speech was pressured, rambling and disorganized, with clang associations. He was making statements such as "I talk to God, he talks back through my brain and butterflies in my stomach and that's how we communicate." He presented with poor insight regarding his mental disorder or why he was admitted to the state hospital. Often, he seemed to be responding to internal stimuli despite denial of auditory or visual hallucinations. Prior to hospitalization, he had been on olanzapine; he was started on valproic acid upon admission. Despite the use of olanzapine and valproic acid, his psychosis and mood symptoms continued to exacerbate. The patient was started on a second antipsychotic, haloperidol, leading to some improvement of symptoms. **Conclusion:** Concurrent psychosis and severity of mood symptoms were a challenge for this case presenting with TRS. Multiple treatment regimens have been proposed. The initial step is to use an antipsychotic from a different class. Following the use of an atypical antipsychotic and a mood stabilizer for two weeks, we employed the use of a typical antipsychotic, resulting in partial remission. This patient continues to be in inpatient treatment with gradual improvement.

No. 101

A Literature Review of Deaf Patients With Psychotic Disorders Who Report Auditory Hallucinations

Poster Presenter: Amilcar A. Tirado, M.D., M.B.A.

Lead Author: Amilcar A. Tirado, M.D., M.B.A.

Co-Author: Marieliz Alonso, M.D.

SUMMARY:

Deafness is not a uniform phenomenon but exists to varying degrees, ranging from profound prelingual deafness, in which the person has had no experience of hearing sound at all (acquired prior to age three), to restricted hearing only in those frequencies required for verbal communication to central auditory processing deficits in which a person has the full frequency range of hearing but cannot meaningfully process these sounds. A deaf patient's ability to communicate may be hampered by language dysfluency. The most common cause of language dysfluency in deaf patients is language deprivation due to late and inadequate exposure to American Sign Language. Language dysfluency can also make it challenging for health providers and sign interpreters to identify whether a deaf patient is experiencing psychosis as opposed to limitations with communication. Very few studies of the deaf psychiatric population exist, and most are descriptive and anecdotal. No well-controlled outcome studies of deaf people with psychosis have been conducted. There is controversy about the exact nature of auditory hallucinations reported by prelingually deaf people with psychosis. When profoundly prelingually deaf people with psychosis report hearing voices, it is unlikely that they are referring to the same experience that hearing people with psychosis have, simply because they do not have the same framework for "hearing." People with schizophrenia who are profoundly deaf from birth do not describe experiences of sound-based "voices" and cannot describe pitch, loudness or volume characteristics of the "voices." The subvocal articulation hypothesis suggests that auditory hallucinations result from the misattribution of inner speech to an external locus of control. The subvocal hypothesis posits that the form of the hallucination mirrors subvocal thought processes, which in hearing individuals are predominantly speech-based. Further research is needed to evaluate deaf people who show greater heterogeneity in how they experience auditory hallucinations due to individual differences in experience with language and residual hearing. Furthermore, there is a lack of brain imaging or experimental studies, and no research has been conducted to compare how "voices" are perceived by those who were born deaf and those who lost their hearing after acquiring speech. At the

present time, research on deaf psychiatric patients with psychotic disorders is scarce in the scientific literature. When deaf psychotic patients report "hearing voices," they undoubtedly are experiencing something. Just what that is, however, is not known. Moreover, hearing mental health professionals may have to come to terms with the fact that they most likely will never be able to know, that this experience is unknowable, because they do not share deaf phenomenological frames of reference.

No. 102**Early-Onset Lewy Body Dementia Without Motor Parkinsonism or Fluctuating Cognition in a 49-Year-Old Female**

Poster Presenter: Cody Rall, M.D.

SUMMARY:

Mrs. T. is a 49-year-old female who initially presented to psychiatry with depression and anxiety. Over the course of treatment, she was observed to have short-term memory loss, visual-spatial abnormalities and evidence of executive dysfunction. She was referred to neuropsychiatry for diagnostic clarification. Her neurological exam showed no focal weakness, no pathological reflexes and no extrapyramidal signs. A neuropsychology battery was significant for memory and executive function impairment. Observation and history revealed significant impairments in daily organizational activities, to include repeating conversations, getting lost on the way to medical appointments and forgetting to pay bills. Workup for cognitive impairment revealed the following abnormalities. Brain MRI showed posterior cortical atrophy. 18F-FDG-PET brain scan revealed severe hypometabolism in the bilateral occipital lobes, bilateral parietal lobes and bilateral posterior temporal lobes. A subsequent 123I-FP-CIT SPECT (DaTSCAN) confirmed loss of dopaminergic neurons in the striatum, which is highly specific for Lewy body dementia. Despite lacking two major diagnostic categories for Lewy body dementia (parkinsonism motor features and fluctuating cognition), we were able to make a diagnosis of probable Lewy body dementia derivative of recent advances in radioligand brain imaging. This case illustrates the utility of new forms of brain imaging to replace or

augment clinical diagnosis of neurodegenerative diseases based on clinical examination signs.

No. 103

Neuroplasticity, Atypical Antipsychotics and Vascular Dementia!

Poster Presenter: Kanwaldeep Dhillon, M.D.

Co-Author: Amit Mistry, M.D.

SUMMARY:

Background: Quetiapine is an atypical antipsychotic drug, and recent rat studies propose that it may have protective effects on the spatial memory impairments and hippocampal neurodegeneration caused by cerebral ischemia. Fibroblast growth factor-2 (FGF-2) and brain-derived neurotrophic factor (BDNF) are trophic factors widely distributed in the adult brain. These studies showed that administration of quetiapine resulted in a marked elevation of FGF-2 and BDNF mRNA levels in the rat hippocampus, but only under conditions of reduced N-methyl-D-aspartate (NMDA) receptor activity. These results suggest that quetiapine may promote neuroplasticity via the up-regulation of neurotrophic factors when NMDA-mediated transmission is perturbed. **Case:** A 53-year-old male with history of depression, diabetes, hypertension, hyperlipidemia, and prior stroke resulting in right eye blindness, cognitive and memory impairment, and renal failure requiring renal transplant presented with worsening depression with hallucinations and insomnia and deteriorating memory and cognition. Initial evaluation via Montreal Cognitive Assessment (MoCA) revealed a score of 14. The patient was on bupropion and immunosuppressants for his kidneys. Bupropion was discontinued in favor of escitalopram with low-dose quetiapine as adjunctive therapy. The patient was seen again at eight weeks. He reported improvement in mood with resolution of hallucinations, memory and cognitive functioning, with an MoCA score of 21. The patient was able to improve his quality of life and take up employment. **Discussion:** Studies using single photon emission tomography (SPECT) scans in human volunteers have showed that patients with hallucinations, schizophrenia or vascular dementia have reduced NMDA receptor activities. Administration of the atypical antipsychotic quetiapine may promote neuroplasticity via up-regulation of neurotrophic

factors FGF-2 and BDNF mRNA levels in the hippocampus, but only under conditions of reduced NMDA receptor activity. In this case, quetiapine may have induced anatomical and molecular changes in the brain, suggesting that antipsychotic drugs promote neuroplasticity.

No. 104

Dilemma of Cognitive Assessment in a Patient With Hearing Difficulty: A Case Report

Poster Presenter: Gurkanwal S. Sidhu, M.D.

SUMMARY:

Background: There are several clinical conditions that affect the cognitive capabilities of an individual and require thorough clinical assessment. Cognitive assessment can be done by administering a variety of tests in different settings, testing various domains such as visuospatial and executive functioning, naming, attention, language, abstraction, short-term memory, and orientation. In the hospital setting, Mini Mental Status Exam (MMSE) or Montreal Cognitive Assessment (MOCA) are the most frequently used tests for cognitive assessment. **Case:** We report a case of a 72-year-old male where we experienced limitation in cognitive assessment, as he was hard of hearing. We exhibited a MOCA test, and most of the test was done by writing the questions on a piece of paper with the patient verbally answering them. However, we were limited in the parts of abstraction and language domain as it required the patient to verbally repeat information after it was conveyed by the test provider. In conclusion, we were unable to do a complete cognitive assessment due to limited resources. **Discussion:** This case illustrates the limitation of a standardized tool or test to assess cognitive assessment in patients who are hard of hearing. Literature review revealed there is a modified MOCA test for blind patients, and there are multiple tests for assessing intelligence and development in pediatric populations who are hard of hearing, but the data are limited in terms of a standardized tool for complete cognitive assessment in geriatric populations who are hard of hearing. Further studies and research are needed to address this commonly encountered issue, and appropriate methods need to be developed in addressing this issue.

No. 105**Diagnosis of Schizophrenia Reassessed as Kluver-Bucy Syndrome**

Poster Presenter: Anisha Garg

SUMMARY:

Objective: Understand Kluver-Bucy syndrome and differentiating it from a psychiatric/psychotic diagnosis. **Background:** Kluver-Bucy syndrome (KBS) is a very rare cerebral neurological disorder with abnormalities in memory, social/sexual functioning and idiosyncratic behaviors. KBS may present with hyperphagia (uncontrollable appetite), hyperorality (the tendency to put objects in your mouth), hypersexuality, distractibility, and visual agnosia. A patient walked into emergency department with no known history in the hospital records, displaying an atypical presentation. The patient is admitted initially with the working diagnosis of schizophrenia. **Methods:** Two trials of antipsychotics that both failed ultimately led to a new approach regarding diagnosis and treatment **Results:** The patient was found to have Kluver Bucy syndrome and responded to appropriate treatment regarding behavioral symptoms. **Conclusion:** It is important to get a proper history and to always consider organic causes before diagnosing a patient with a psychiatric disorder. This patient was unnecessarily exposed to two trials of antipsychotics, which can be detrimental to the brain in the long term. A case registry and clinical research would help to better understand the syndrome and find effective treatment, as long-term complications of this syndrome can be severe or life terminating.

No. 106**Forty-Four-Year-Old Male With Acute Agitation and Progressive Cognitive Decline**

Poster Presenter: Tim Dockman

SUMMARY:

A 44-year-old Black male U.S. Army officer without previous psychiatric history presented with acute onset of behavioral agitation and aggressive posturing toward his family in context for a recent diagnosis of x-linked adrenoleukodystrophy (ALD) with progressive cognitive impairment, new-onset vision deficits and depression treated with

citalopram. The patient's initial presenting symptom was for complaint of progressively worsening vision three months before. He was evaluated for bilateral visual field deficits with finding for left hemianopia on visual field confrontation in both eyes. Once admitted to the psychiatric inpatient service for grave disability, the patient's agitation was managed with quetiapine and lorazepam. However, during the hospital course, the patient's cognitive impairment progressively worsened, impairing his ability to ambulate safely. In addition to the patient's agitation, presentation was also significant for a quickly progressive visual field loss. Neuro-ophthalmology following during hospital course showed no acute changes, only chronic progression for worsening of left hemianopia. NCHCT imaging was significant for a dominant infiltrative appearing process centered on the bilateral parietal occipital white matter, crossing midline via the splenium of the corpus callosum suggestive for an aggressive demyelinating process. Brain MRI was significant for abnormalities of subcortical demyelinating disease localized to the right frontal, bilateral occipital, posterior temporal, and parietal lobes. PET scan imaging was significant for decreased metabolic activity involving the bilateral temporal, parietal and occipital lobes. Laboratory blood testing was significant for elevated very long chain fatty acids (VLCFA), which correlates with a diagnosis for adrenoleukodystrophy. The patient's prognosis is poor, as this is a progressive disease without significant therapeutic options beyond palliative care.

No. 107**Delirium Superimposed on Dementia: A Missed Diagnosis**

Poster Presenter: Sumana Goddu, M.D., M.P.H.

Co-Author: Caesa Nagpal, M.D.

SUMMARY:

Background: Delirium is a syndrome with altered consciousness and cognition, disorientation, attention deficits, an acute onset, and a fluctuating course. The most common causes of delirium in the elderly are infection and use of prescription medications. Progressive dementia is the greatest risk factor for late-life psychosis. Coexistence of these three neurocognitive conditions (delirium,

psychosis and dementia) can pose diagnostic and therapeutic challenges. We report a case of an elderly male with Alzheimer's dementia admitted for psychosis and behavioral problems who later developed delirium due to infection. **Case:** Mr. W., an 80-year-old White male with Alzheimer's dementia, was admitted to the psychiatric hospital due to disorganized and assaultive behaviors, paranoia and sexual innuendos toward female staff at his assisted living facility. During this time, he refused care from staff, refused showers, displayed poor appetite, and had problems with sleep. He had also received a seven-day course of ciprofloxacin for urinary tract infection just prior to admission. Differential diagnosis was dementia with behavioral disturbance alone or delirium superimposed on dementia. Repeat urinalysis after admission was negative. The patient was started on quetiapine 25mg by mouth at bedtime for mood and psychotic symptoms. He was also continued on rivastigmine for dementia and mirabegron for overactive bladder. Over next few days, he was less irritable, sleeping and eating better and with an organized thought process and a brighter affect. However, on day 6, he was noted to have trouble sleeping, refused meals on two occasions, developed cough with sputum, complained of shortness of breath, and was noted to have crepitation on auscultation bilaterally. He was also noted to have problem with attention at times. He was immediately transferred out to the emergency department for evaluation of dyspnea and any medical issues contributing to his acute change in mental status. Thereupon, he was diagnosed with delirium due to community-acquired pneumonia. **Discussion:** Psychosis and delirium can occur in elderly patients with dementia, and it is often difficult to distinguish between them. Delirium superimposed on dementia is frequently underrecognized in the elderly. Delirium also increases the risks of mortality, institutionalization, functional decline, and falls in the elderly. As we observed in our patient, the cognitive changes of delirium can be very subtle in elderly patients and hence need a high index of suspicion. Baseline cognitive assessment and continual reassessment by both physicians and nurses is essential for preemptive diagnosis. **Conclusion:** Early recognition of delirium in dementia is of utmost importance in order to prevent adverse outcomes, including

increased mortality, need for hospitalization, readmission, and accelerated and long-term cognitive and functional decline in the elderly.

No. 108

Losing Control: A Rare Presentation of Behavioral Variant Frontotemporal Dementia

Poster Presenter: Sabina Bera, M.D., M.S.

SUMMARY:

Background: Frontotemporal dementia (FTD) is a collection of neurodegenerative diseases that involve frontotemporal lobar degeneration. Diagnosing FTD can be challenging, since there is a wide variety of presenting symptoms. For example, behavioral variant frontotemporal dementia (bvFTD) commonly presents with the onset of psychiatric symptoms, often leading to an initial diagnosis of a primary psychiatric disorder. The patient presented here was first diagnosed with bipolar disorder with catatonia and was later found to have probable bvFTD. **Case:** This patient is a 33-year-old Caucasian male with no past psychiatric history and a medical history of migraines who experienced two years of gradual behavioral and cognitive changes. His family first noticed ritualistic behaviors followed by insomnia and social withdrawal. He also experienced difficulties performing tasks at work and ultimately left his job. These symptoms were initially attributed to several close deaths in the family. After a neurologist relayed the problem was likely not neurological in nature, the patient's primary care physician started the patient on antidepressants. A psychiatrist later diagnosed him with bipolar disorder with catatonic features due to his presentation of irritability, sleep difficulty, perseveration, and some obsessive preoccupation with compulsive behavior interpreted as increase goal-directed activity, along with selective mutism. Antipsychotics, antidepressants and benzodiazepines did not improve his symptoms. The patient later developed severe difficulty with speech, complex tasks and problem solving. After a second psychiatrist requested a repeat neurological evaluation, the patient's neurologist ordered a comprehensive workup, including imaging, a lumbar puncture and laboratory tests, all of which were unremarkable. The patient was admitted for a post-lumbar puncture headache and was seen by the

psychiatry consult service, who stated there was likely an underlying neurocognitive disorder. The patient was ultimately referred to a memory and aging specialty clinic and had an extensive neuropsychological evaluation. The patient was found to meet criteria for probable bvFTD.

Conclusion: This is a rare and atypical presentation of probable bvFTD. The patient was outside the normal age range for bvFTD, and the picture was further complicated by the presentation of psychiatric symptoms alongside a coincidental psychosocial stressor. This case report may encourage the psychiatric community to include bvFTD in their differential when evaluating behavioral changes in a young adult patient with no past psychiatric history. The atypical presentation of this patient may also stimulate a discussion surrounding the current *DSM-5* diagnostic criteria for frontotemporal neurocognitive disorder.

No. 109

Friendly Little Faces: Lewy Body Dementia or Charles Bonnet Syndrome?

Poster Presenter: Mandar P. Jadhav, M.D.

SUMMARY:

Background: New-onset visual hallucinations in elderly patients without mood symptoms have been hypothesized to be part of two phenomena, Lewy body dementia and Charles Bonnet syndrome. Regarding Lewy body dementia, visual hallucinations are seen in a third of patients. These hallucinations differ from those in other psychotic disorders but are similar to those found in Charles Bonnet syndrome. Patients with Lewy body dementia regularly have deficits in color and contrast perception, drawing similarities to the posited mechanism of emergence of hallucinations in Charles Bonnet syndrome. This makes it difficult to differentiate one disorder from the other in patients presenting with facets of both.

Case: We describe a case of a 60-year-old male who presented for evaluation of psychosis consisting of paranoid ideation and visual hallucinations. He had never received care from psychiatrists before. He had significant cardiovascular disease with prior coronary artery bypass graft. He had not been compliant with medications prescribed by his family physician. According to the patient and his family, he had had visual hallucinations of "little faces" for

years, but paranoia became evident more recently. The "faces" would mumble inaudibly to each other. He was aware the images were not real. He had tested this by trying to touch them. The hallucinations did not bother him in the past. However, the more recent paranoid ideation, of a neighbor trying to attack him, caused the patient to engage in an "armed standoff" with no one else present. Law enforcement brought him to the hospital. During his stay, we determined he had some cognitive impairment, demonstrated by MOCA score of 21/30 with deficits in memory, executive functioning and visuospatial perception. He had mild bradykinesia, but no rigidity in his extremities. We also found the visual hallucinations had first started in his late fifties, after bilateral cataract surgery. Therefore, Charles Bonnet syndrome became part of our differential diagnoses. Early in his inpatient stay, he stated his psychosis had resolved and described the phenomenon in detail without hesitation. This was despite not being treated with antipsychotics until late in his stay. He never appeared to be depressed or manic during this time. **Discussion:** Given his age, complex history and presentation, it was unclear whether his psychotic symptoms were part of developing neurocognitive disorder or primary reactive visual hallucinations (Charles Bonnet syndrome) or some combination thereof. On the one hand, hypnagogic and hypnopompic occurrence of his hallucination argued in favor of Lewy body dementia, but on the other, insight into his psychosis argued in favor of Charles Bonnet syndrome, based on existing literature. Ultimately, he was discharged with recommendation of follow-up psychiatric care for symptom management and neuropsychological testing to clarify his diagnosis.

No. 110

Dynamic Conformational Change of Presenilin 1 in Response to Calcium Influx

Poster Presenter: Xuejing Li, M.D., Ph.D.

SUMMARY:

An increase in the A β 42/40 ratio potentially leads to the pathogenesis of Alzheimer's disease (AD). Familial AD mutations in presenilin 1 (PS1) or presenilin 2 (PS2), or other manipulations that lead to a structural change in the gamma-secretase, cause an alteration in the A β 42/40 ratio. Several

lines of evidence suggest that aberrant Ca^{2+} homeostasis, and Ca^{2+} overload in particular, may be a key event in the pathogenesis of AD. A reciprocal interaction between Ca^{2+} dysregulation and beta-amyloid ($\text{A}\beta$) pathology has been well established. We demonstrate that PS1 adopts rapid “closed” conformational change in response to calcium influx induced by KCl or glutamate treatment, followed by up-regulation of the $\text{A}\beta_{42/40}$ ratio in cultured neurons. This rapid PS1 conformational change is accompanied by increased phosphorylation level of PS1 CTF, which is not mediated by PKC or GSK3 β . This finding strongly supports the hypothesis that PS1/gamma secretase exists in a dynamic equilibrium of the two (or more) conformational states—“open” and “closed” (a “breathing model”)—and this equilibrium can be allosterically modulated by elevated levels of intracellular calcium.

No. 111

Case Report Exploring the Link Between Capgras Delusions and Left Temporal Dysfunction

Poster Presenter: Britney Nicole Johnson

Co-Author: Suzanne Holroyd

SUMMARY:

Capgras syndrome is a delusional disorder characterized by the belief that a person, usually a close friend or family member, has been replaced by an imposter. The etiology of this disorder is unknown, but one area of research points toward a miscommunication between the temporal lobe—the area of the brain in part responsible for memory and facial recognition—and the limbic system—involved in emotional regulation. As further support of this, it has been shown via electrical brain stimulation that simple dysmnestic phenomena such as “déjà-vu” arise in this same area and that partial seizures, brain injuries or even gradual deterioration of the brain can cause dysfunctional memory sensations similar to, and perhaps including, Capgras syndrome. One theory is that when the temporal-limbic connection is dysfunctional, individuals visually recognize a loved one, but there is no longer an appropriate emotional response attached to that recognition. Other case studies have reported Capgras syndrome associated with dorsal right hemisphere dysfunction, which causes

hypoemotionality when presented with a familiar face; this has led some researchers to suspect that Capgras syndrome arises in a circumscribed area in the non-dominant hemisphere between regions responsible for facial recognition and perception of auditory tones. Another case study examined the brain of an individual with Capgras syndrome using functional SPECT imaging, and this revealed increased perfusion of the left calcarine sulcus of the occipital lobe. Interestingly, these studies seem to pinpoint differing regions of the brain as the likely root of Capgras symptoms. We report a case of Capgras syndrome that is associated with left temporal lobe dysfunction. Ms. G., a 52-year-old female, presented with Capgras syndrome 10 years ago when her adult daughter returned home after being away for several months. Upon reuniting, Ms. G. suddenly believed that her true daughter was gone, having been replaced by an identical-looking stranger. Although her husband insisted their daughter was unchanged, Ms. G. was convinced she was an imposter. This delusion has remained for 10 years, and although she has learned to accept the “new daughter” she will readily state that she is not her “real” daughter and becomes upset wondering where her “real” daughter is. At times, she thinks her husband has also been replaced, but this is not continuous and varies over time. In addition, she also noted that old pictures of her had been replaced and are not pictures of her but of someone who looks like her. Ms. G. has no history of traumatic brain injury, dementia or schizophrenia; however, she has had several years of mild forgetfulness. An MRI was normal. An electroencephalogram (EEG) was obtained, and this showed signal slowing in the left temporal lobe. In this report, we present our case in detail and review the current literature pertaining to possible brain regions associated with this condition.

No. 112

Visual Hallucinations and “Capgras” Delusions Regarding Personal Belongings Associated With Occipital Lobe Seizures

Poster Presenter: Erika Maynard

SUMMARY:

Simple, or elementary, visual hallucinations (VH) consist of lights, colors, geometric shapes, and

indiscrete objects compared to complex VH, which are formed objects, people or animals. Occipital seizures may cause simple VH, commonly colored and circular patterns flashing or multiplying in a temporal hemifield. These hallucinatory experiences are thought to reflect pathological activation of neural ensembles in the regions bordering the occipital lesion. Postictal psychotic symptoms are rare in epileptic patients, but the most common of these symptoms are thought blocking, hallucinations, illusions, delusions, and acute confusion. Capgras syndrome is the delusional belief that a familiar person has been replaced with an imposter. It may be caused by brain dysfunction, generally in the right- or left-sided temporal and/or occipital lobes. Delusions in the form of Capgras syndrome are rare in cases of epilepsy. They are thought to result from postictal disinhibition of the dominant hemisphere involved in recognition or from dysfunction of the nondominant hemisphere involved in perceptual integration. We present a case of both simple and complex VH as well as Capgras syndrome regarding a person's belongings, associated with occipital lobe seizures. To our knowledge, this is also the first case of a Capgras-type syndrome regarding belongings rather than people. A 59-year-old male was admitted for hypertensive emergency with visual disturbances. Brain MRI showed old left thalamic infarct and head/neck CTA showed a stable 6.3mm left-sided cavernous carotid aneurysm. Anti-hypertensives were started as well as treatment for newly diagnosed hyperglycemia with HgbA1c of 14.8. He then developed left lateral gaze deviation with nystagmus. Head CT showed no apparent acute findings. He then reported VH described as red and green "pinwheels" moving diagonally downward to the left before falling off the visual field. This then evolved into VH of people and dogs. EEG revealed occipital lobe seizures, and valproic acid and levetiracetam were started. Unfortunately, he ultimately went into status epilepticus refractory to lorazepam, requiring intubation and midazolam. After several days, he was extubated, and repeat brain MRI demonstrated chronic small vessel ischemic changes and stable old left thalamic infarct. Interestingly, when presented with his personal belongings (clothing, shoes, cellphone, wallet), the patient did not recognize any of them as belonging

to him; he adamantly stated he had never seen them before. He did not recognize himself in his driver's license photo and did not claim his cellphone to be his despite it having a thumbprint recognition feature. For days, he continued to be unable to recognize his belongings as his own, although he was able to recognize friends and family and even to verbally describe his home and personal belongings in the home.

No. 113

Difficulties in Treating ADHD and Other Behavioral Issues in a Patient With Klinefelter Syndrome

Poster Presenter: Swarnalatha R. Yerrapu

Co-Author: Balkozar Adam, M.D.

SUMMARY:

Background: Klinefelter syndrome (KS) is one of the most common chromosomal disorders, occurring in 1 in 500 to 1 in 1,000 newborn males. It is characterized by an extra X chromosome, resulting in the 47, XXY karyotype. KS patients are at increased risk for ADHD and other psychiatric disorders, but there is a dearth of research addressing effective treatment for KS patients with ADHD and other comorbidities. **Case:** An 11-year-old White male who was diagnosed with KS was referred by his neurologist. He had been diagnosed with ADHD, ODD, mild intellectual disability, and seizure disorder. He displayed severe behavior issues at home and school, where he targeted his teachers, his peers and the school principal. His IQ test yielded a score of 70. He was given stimulant medications and atomoxetine, but his behavior got worse. He displayed improvement after being placed on guanfacine, despite guanfacine not being typically used to treat ADHD. He also responded well to the addition of a low-dose of Risperdal. Due to the severity of his behavior, his school developed an IEP for him placed him at a specialized, out-of-district school. In addition, Topamax was used to successfully treat his seizures. After seeing a marked improvement in his aggressive behavior and ADHD symptoms with Risperdal and guanfacine, further studies on the effects of guanfacine in patients with KS and ADHD is recommended. **Discussion:** Although KS patients have almost a six times higher risk of ADHD, there is not sufficient data on treating ADHD in KS patients. They also are at a higher risk of

acquiring autism and schizophrenia and a number of other neurocognitive comorbidities, including learning disabilities (67%), psychosocial problems (33%) and attention deficit disorder (27%). These data show that KS is associated with longstanding comorbidities that frequently remain underrecognized. In these genetic conditions, the combined effect of genes and hormones likely influences brain development and function, conditioning the behavioral phenotype. **Conclusion:** Management of patients with KS is a multidisciplinary process, as there are often underreported comorbidities. The use of guanfacine should be studied in KS patients with ADHD. Treatment should include a multispecialty partnership that usually involves a pediatrician, an endocrinologist, a geneticist, a speech therapist, and other professionals such as psychologists, psychiatrists and developmental specialists as needed. It is also important to establish partnerships within the school system to ensure the child with KS has a maximized learning environment. Behavioral interventions and classroom accommodations can help children with KS to reach their educational goals. The improvement of this patient's ADHD symptoms with the use of guanfacine should inform future research on this topic.

No. 114

Turner Syndrome and Autism: The Missing Link

Poster Presenter: Swarnalatha R. Yerrapu

Co-Authors: Balkozar Adam, M.D., Sailaja Bysani, M.D.

SUMMARY:

Background: This is the case of a 17-year-old female who was diagnosed with Turner syndrome (TS) at age five. She was referred for treatment of depression because of her social interaction difficulties and behavioral issues. TS is a sex-chromosome aneuploidy where there is deficiency of X chromosome. She was born at 30 weeks after complications of oligohydramnios and intrauterine growth restriction. As a child, she experienced difficulties following directions and finishing tasks in a timely manner. She needed assistance in her daily routine with eating, hygiene and sleep. She experienced social anxiety throughout elementary school. As she grew older, she was hospitalized on

several occasions because of suicidal ideation. She had difficulty making friends and became the victim of bullying. She was pulled out of school to be homeschooled and, as a result, became very isolative and depressed. Her activities were restricted because she threw temper tantrums in public and had a tendency to act impulsively. She was also a picky eater and had sleep difficulties. She struggled to share her enjoyment with others and did not show interest in playing with her peers. The relationships she did have were difficult to develop and maintain. For the last several years, her diagnoses included ADHD, MDD and hypothyroidism. She had never been evaluated for ASD until 2016 in large part because her symptoms correlated with depression and because ASD is very rare in patients with TS. Following her evaluation, she was diagnosed with ASD. She is currently on sertraline 100mg daily for her depression and levothyroxine 100µg for her hypothyroidism. She is receiving ABA along with CBT to address her mood- and attention-related issues.

Discussion: Research shows that less than five percent of TS patients also have ASD. In the case of our patient, the coexisting psychiatric comorbidities of MDD and ADHD masked the symptoms of ASD. She was left undiagnosed—and unable to seek treatment for ASD—throughout her childhood. It wasn't until she was 16 that the critical diagnosis was made. Verbal intelligence and conversational language abilities are often normal in TS, but there is some evidence that nonverbal skills, arithmetical abilities and selective visuospatial skills are impaired in TS patients. What also muddied the waters was that her symptoms of isolation, hopelessness and psychomotor irritability were also likely related to bullying. Taken together, her symptoms, history and diagnoses concealed her ASD diagnosis. **Conclusion:** Although it is more difficult to think in terms of ASD if a TS patient has coexisting psychiatric comorbidities like MDD and ADHD, clinicians must be keenly aware of the possibility. Undiagnosed ASD has a huge impact on a patient's life and can lead to deep social isolation, treatment-resistant depression and academic failure in spite of intelligence. Family education, psychopharmacological treatment, ABA, and CBT were successful in treating the patient.

No. 115

Pallidum and Lateral Ventricle Volume Enlargement

in Autism Spectrum Disorder

Poster Presenter: Andia H. Turner

Co-Author: Theo G. M. van Erp, Ph.D.

SUMMARY:

Research aimed at identifying structural brain differences in individuals with autism spectrum disorder (ASD) has been limited in size. The Autism Brain Imaging Data Exchange (ABIDE) provides high-resolution structural brain scans of individuals with DSM-IV ASD diagnoses and healthy volunteers. In this study, we utilized these scans to compare subcortical, total brain (TBV) and intracranial (ICV) volumes between 472 subjects with ASD and 538 healthy volunteers (age range: 6–64 years.) We found significantly larger pallidum (Cohen's $d=0.15$) and lateral ventricle volumes (Cohen's $d=0.18$) in individuals with ASD. These enlargements were independent of total brain volume and IQ, passed FDR correction for multiple comparisons, and maintained significance in male-only and medication-free sample sets. We also found enlarged intracranial, hippocampal and caudate volumes in ASD patients at a statistical threshold of $p<0.05$. This is the first large study to provide evidence for pallidum enlargement in ASD patients independent from brain volume. We encourage further research to elucidate the functional role of the pallidum in individuals with autism spectrum disorder.

No. 116

Neurological and Psychiatric Manifestation in Joubert Syndrome: A Case Report

Poster Presenter: Sheema Imran, M.D.

SUMMARY:

Background: Joubert syndrome is a rare autosomal recessive disorder characterized by specific structural abnormalities as well as clinical symptoms. Dysgenesis or complete agenesis of the vermis, enlarged peduncles or maloriented peduncles, and dysmorphic/asymmetric midbrain together are known as the molar tooth sign, which is a characteristic feature of Joubert syndrome and related disorders (JSRD). This syndrome presents clinically with abnormal respiratory pattern as well as ocular and motor abnormalities, such as hypotonia and developmental delay. Language and

motor skills are delayed in patients with JSRD, varying from mild to severe. Neurobehavioral symptoms are not well characterized for patients with Joubert syndrome. Children may present with symptoms similar to autism with features such as abnormal eye movements and limited gross and fine motor coordination. It is important to take note of cognitive and behavioral changes in patients with Joubert syndrome in order to allow for better management of the patients with JSRD. Rehabilitation strategies might need to be planned for cognitive and behavioral difficulties. **Case:** We report a case of Joubert syndrome in a 14-year-old and its behavioral manifestations and review the available literature from PubMed and UpToDate. **Conclusion:** Patients with JSRD present with neurobehavioral symptoms, as cerebellum plays an important role in cognition, social functions and emotions.

No. 117

Alice in Wonderland Syndrome—an Unusual Case of Hallucinogenic Symptoms: A Case and Literature Review

Poster Presenter: Vikas Gupta, M.D., M.P.H.

Co-Author: Roopma Wadhwa

SUMMARY:

We describe the case of a 15-year-old male who initially presented with anxiety and depression. He frequently complained of headaches and migraines, which were often accompanied by nausea and vomiting, causing multiple visits to the ER. The patient was started on topiramate for migraines by his neurologist. He complained of auditory hallucinations on and off soon thereafter. He had difficulties with social communication, maintenance of eye contact and a distinct speech. At further visits, he complained of his arms looking smaller and the room appearing different. He complained that things looked distorted and stated, "I have been feeling that everything looks like different size, if I look at my hands my fingers will look too long or too short." Further evaluation by ophthalmology ruled out eye disease. A prior evaluation had ruled out ASD; however, given his symptoms, another evaluation was requested, and the patient was diagnosed with ASD. He was diagnosed with Alice in Wonderland syndrome (AIWS), which has been seen in

conjunction with migraine and after topiramate use, and literature reports suggest similar presentations in patients diagnosed with ASD. The patient's case was unusual in terms of hallucinogenic symptoms and their presentation, and psychiatrists must recognize this rare diagnosis. In general, the treatment plan consists of giving migraine prophylaxis (anticonvulsants, antidepressants, calcium channel blockers, and beta blockers). Following a migraine diet regimen affords immense relief. We recommended these measures to the patient, and some symptom relief was noted. It was explained that these manifestations are not dangerous and will likely fade over a period of time. AIWS is a neuropsychiatric syndrome in which perceptual disturbances occur, including metamorphopsia (bizarre distortions of spatial sense). The terminology is taken from the Lewis Carroll novel and is based on the author's experiences of his migraines. The syndrome includes visual distortions and somesthetic and other non-visual distortions. The duration of symptoms tends to be short (minutes to days) and may be persistent for years or lifelong. Among migraine patients, the prevalence rate of AIWS has been indicated to be around 15%. Various conditions in which AIWS has been described in literature include, but are not limited to, infectious diseases (Coxsackie B virus encephalitis, EBV encephalitis), CNS lesions (e.g., acute disseminated encephalomyelitis, cerebral thrombosis, cerebral hemorrhage), PNS lesions (e.g., middle ear disease, eye disease), paroxysmal neurological disorders (like epilepsy, migraine), psychiatric disorders (like depressive disorder, derealization disorder, schizophrenia), and medications (5-HT₂ antagonist, dextromethorphan). Most cases of AIWS are considered benign, and spontaneous or post-treatment remission of symptoms can often be obtained.

No. 118

A Retrospective Database Analysis on Personality Disorder Presentations in a Canadian Hospital

Poster Presenter: Jennifer Pikard

SUMMARY:

Background: Personality disorders are relatively common. Patients with personality disorders have more extensive involvement with mental health care

services, including more frequent utilization of emergency departments, and provider stigma further complicates interaction with the health care system, with subsequent deleterious effects on the quality of care. The aim of this study was to investigate whether certain factors such as mode of arrival, time and season of arrival, length of stay, and ultimate disposition decisions differ between patients with or without diagnosis of personality disorders. **Methods:** Retrospective database analysis of all mental health-related emergency department visits between January 1, 2015, and December 31, 2015, in a Canadian university hospital was carried out assessing age, season of presentation, time of presentation, length of stay, mode of arrival, and discharge arrangements for individuals with personality disorders versus those with another mental health diagnosis. **Results:** There were 336 visits due to personality disorders and 5,290 visits for other mental health diagnoses. Individuals with personality disorders were significantly more likely to be female, young adults, brought in by police, arriving in the evening, discharged home, and having a longer median length of stay in the emergency department. **Conclusion:** The findings that patients with personality disorders are more likely to present to the ED outside regular clinic hours and more likely to be brought to the ED by police warrant further study to clarify, confirm and explore these factors. In the meantime, ensuring that well-trained support staff are available in the ED at times when patients with personality disorders are most likely to present may help to better address the needs of this important diagnostic group. Moreover, personality disorder-specific programs involving liaison between emergency mental health and police services could prove valuable for patients who interact with both systems.

No. 119

The Association Between Borderline Personality Disorder, Fibromyalgia and Chronic Fatigue Syndrome: A Systematic Review

Poster Presenter: Emily E. St. Denis

Co-Authors: Sarah Penfold, Mir Nadeem Mazhar

SUMMARY:

Background: Overlap of aetiological factors and demographic characteristics with clinical

observations of comorbidity has been documented in fibromyalgia syndrome, chronic fatigue syndrome (CFS) and borderline personality disorder (BPD).

Objective: The purpose of this study was to assess the association of BPD with fibromyalgia syndrome and CFS. The authors reviewed literature on the prevalence of BPD in patients with fibromyalgia or CFS and vice versa. **Methods:** A search of five databases yielded six eligible studies. A hand search and contact with experts yielded two additional studies. We extracted information pertaining to study setting and design, demographic information, diagnostic criteria, and prevalence. **Results:** We did not identify any studies that specifically assessed the prevalence of fibromyalgia or CFS in patients with BPD. Three studies assessed the prevalence of BPD in fibromyalgia patients and reported prevalence of 1.0, 5.25 and 16.7%. Five studies assessed BPD in CFS patients and reported prevalence of 3.03, 1.8, 2.0, 6.5, and 17%. **Conclusion:** More research is required to clarify possible associations between BPD, fibromyalgia and CFS.

No. 120

The Relationship Between Adverse Childhood Events and Borderline Personality Disorder Is Mediated by Difficulty Identifying Emotions

Poster Presenter: Mirabelle Mattar, M.D.

Co-Authors: Garry Linsis Spink Jr., M.S., Robert Gregory

SUMMARY:

Prior research has suggested that difficulty describing emotions, a subcomponent of alexithymia, mediates the relationship between adverse childhood experiences (ACE) and the development of personality disorders. To date, though, no research has been conducted investigating this mediation in relation to specific personality disorders (i.e., borderline personality disorder; BPD). Furthermore, dynamic deconstructive therapy posits that aberrant emotion processing, as manifested by difficulty identifying and labeling emotions, is an important neuroaffective deficit contributing to the development of BPD phenomenology. Thus, this study sought to investigate the mediating influence of difficulty identifying emotions on the link between ACE and BPD symptoms. A sample of 86 adult

participants from an outpatient clinic were administered the ACE Questionnaire, the Difficulty Identifying Emotions subscale of the Toronto Alexithymia Scale-20 (TAS-20) and the BPD component of the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II). Using stepwise linear regression, results suggest that difficulty identifying feelings completely mediates the relationship between ACE and BPD symptoms. This finding emphasizes the importance of staging interventions that help patients identify and label emotions when treating BPD, as well as when treating those who have experienced an ACE. Limitations will be discussed.

No. 121

Temporal Relations Among Borderline Personality Disorder and Nonsuicidal Self-Injury and Suicide in Adolescents: A Literature Review

Poster Presenter: Victoria E. Stead

Co-Authors: Louis A. Schmidt, Ph.D., Khrista Boylan, M.D., Ph.D.

SUMMARY:

Background: Self-injury is an unfortunately common behavior in adolescents. Self-injurious behaviors are also symptoms of serious mental disorders in adolescence, such as major depressive disorder and borderline personality disorder (BPD); thus, recognition of the presence of mental disorder is important. Indeed, BPD is one of the most debilitating mental health disorders and is characterized by emotional instability, impulsivity, interpersonal dysfunction, and self-injury and suicidal tendencies. Most studies about self-injury and suicidal behaviors in adolescent populations fail to include assessment of BPD symptomology. Consequently, there is a serious need for data examining BPD in adolescent samples that engage in self-injury and attempted. The aim of this review was to examine the temporal relations among self-injury, suicidal behavior and BPD in adolescent samples. **Methods:** A search of PsycINFO (1804–present), MEDLINE(R) (1946–present) and Embase (1974–present) was carried out. The participants, interventions, comparisons, outcomes, and study design (PICOS) approach was used to generate our research question and to establish study inclusion eligibility criteria. Our inclusion criteria were

adolescent age (a sample's baseline timepoint had to have a mean age of 18), community and clinical samples, and longitudinal design. Originally, we wanted studies examining self-injury as the predictor of later BPD/BPD features; however, there were too few studies. Thus, we examined the bidirectional relation of BPD to suicide/suicidal ideation/self-injury. Our search criteria retrieved a total of 508 articles. After removing duplicates, and screening titles and abstracts, 21 complete articles were reviewed, and a total of 11 articles met our inclusion criteria. **Results:** Of the 11 articles, six comprised clinical samples, four of the studies had a follow-up period of only six months, and the majority of studies had samples that comprised mainly of female participants. Six of the studies examined the relation between BPD and suicide, one article assessed the relation between BPD and suicidal ideation, another article examined the relation between BPD and both suicidal ideation and self-injury, and three articles examined the relation between BPD and self-injury. Thus, there was little unified information, and there were many conflicting results between articles examining the same effects. **Conclusion:** Future research examining the developmental trajectories between self-injury, suicidal ideation and suicide attempts in relation to BPD is crucial. This will be imperative to determine better and earlier detection of BPD and risk assessment instruments for adolescents. Findings from this literature review will be discussed in terms of their implications for future research.

No. 122

Borderline Personality Disorder: Self-Harm by Swallowing

Poster Presenter: Huda Motiwala

SUMMARY:

This case is about a patient with severe self-harming behaviors and a diagnosis of borderline personality disorder while at an inpatient psychiatric facility. The patient presented as a 24-year-old criminal misdemeanor court commit with a past history of schizoaffective disorder from the county jail for severe depression, suicide attempt and auditory hallucinations characterized by several muted derogatory voices without a clear context, which the patient finds discomforting. In Oklahoma City

County, the patient made multiple attempts to hurt himself by ingesting foreign objects such as sporks, light bulbs, plastic cups, etc. He was taken to the hospital several times to remove these items. He had an abdominal surgery to remove a plastic fork and multiple test tubes from his intestines; the patient manipulated the surgical wound in an attempt to self-harm by inserting handcuffs, his fingers and multiple sporks multiple times where the wound needed to be closed surgically. Observation of the patient revealed multiple bite marks on his body, which were self-inflicted, and a history of eight nasal cauterizations from self-inflicted injury to his nose. He reports a long history of multiple inpatient admissions as a child and adult to various facilities; he was also treated for depression at the age of 10. He reports a history of physical, emotional, verbal, and sexual trauma as a child from his stepfather and reports being raped in prison. He was diagnosed with schizoaffective disorder, generalized anxiety disorder, seizure disorder, and posttraumatic stress disorder. During the course of the patient's stay, he made multiple attempts to manipulate his abdominal wound by scratching it and inserting his fingers inside in attempts to self-harm. He also swallowed objects such as a domino, a spork, cologne, bottle caps, a pencil, and an identification bracelet. These self-harm attempts by swallowing were done while the patient was on a 1:1 with staff at all times, in spite of keeping the facility specifically where the patient was residing clean of any manipulatable objects, harmful liquids or writing utensils. The patient was taken to the medical ER a total of six times for swallowing objects such as a pencil, a spork and an identification bracelet. Two visits were done due to the patient complaining of severe chest pain with radiation to his left arm and jaw, and severe right lower quadrant pain associated with a urinary tract infection he had as exhibited by positive UA. Multiple requests to the rotating medical doctor were made for various complaints made by the patient as well. The patient was placed in a total of 12 physical holds with a corresponding nine chemical restraints and two mechanical restraints necessary to maintain safety for the patient.

No. 123

Complementary Role of the DSM-5 and the

Psychodynamic Diagnostic Manual (PDM) in Understanding Personality Disorders

Poster Presenter: Roopma Wadhwa

Co-Author: Vikas Gupta, M.D., M.P.H.

SUMMARY:

Background: This review highlights the importance of classifying mental illness on the basis of a "holistic" understanding of an individual, based on personality organization and overall mental functioning rather than relying primarily on subjective symptoms. This could be possible by an approach combining the jargon-free symptom approach of the *DSM-5* and the underlying psychodynamics of the Psychodynamic Diagnostic Manual (PDM) to get a holistic picture. The reason for emphasis on personality disorders is that the personality of a patient is the core tenet for evaluation for a psychodynamic clinician. Though this topic has a long tradition in psychiatry and psychology, this is the first literature review highlighting the complementary role of the PDM and the *DSM-5* for a better understanding of personality disorders. It weaves the collective views of psychologists' and psychiatrists' communities.

Methods: A literature search was conducted on multiple search engines including PubMed, Scopus, PsycINFO, CINAHL, Psychology and Behavioral Sciences Collection, and Google Scholar (1995-2015). The search was performed using the keywords psychodynamic diagnostic manual and *DSM-5* personality disorder. The authors analyzed studies pertaining to the PDM, the *DSM* and personality disorders. Relevant articles out of this search are reviewed. Searches on PDM and *DSM-5* personality disorder resulted in 949 and 41 hits, respectively, for a total of 990 hits. The literature was assessed in two stages. The first stage was separate assessment of each article so as to understand its gist and the message it is trying to convey. The second step was to evaluate the relevance of these articles in reference to the question the author is trying to address. The authors reviewed the histories of the *DSM* and PDM, structure and organization of the PDM, the role of psychodynamics in mental health, varied descriptions of personality disorders in the *DSM-5* and the PDM, and the complementary role of the *DSM-5* and the PDM in understanding mental disorders. **Conclusion:** The diagnostic manuals are

directed toward a common goal of understanding the human mind, to define mental illness and treat it or at least address it in a positive fashion. In addition, these provide a common language for clinicians to communicate and create uniformity in various psychopathological mechanisms. In spite of the creation of many diagnostic systems, some questions still seem unanswered. What is the contribution of the external environment on mental health? How much impact does our societal norm have on mental health, and how much were such issues considered during the creation of our diagnostic manuals? In this era of "medicalized" psychiatry, the least we can do is to have a better understanding of the human mind.

No. 124

Lifetime Anxiety Disorder and Current Anxiety Associated With Hastened Depressive Recurrence in Bipolar Disorder

Poster Presenter: Saloni Shah

Co-Author: Terence Ketter, M.D.

SUMMARY:

objective: Assess differential relationships between lifetime anxiety disorder/any current anxiety and longitudinal depressive severity in bipolar disorder (BD). **Methods:** Stanford BD Clinic outpatients enrolled during 2000–2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation and followed with the STEP-BD Clinical Monitoring Form while receiving naturalistic treatment for up to two years. Baseline unfavorable illness characteristics and/any current mood symptoms were evaluated in BD patients with versus without lifetime anxiety disorder/any current anxiety, along with times to depressive recurrence and recovery using Kaplan-Meier survival analyses (log-rank tests) as primary metrics and Cox proportional hazard ratios (HRs) and 95% confidence intervals (CIs) as secondary metrics and to evaluate for potential mediators. This study was limited to American tertiary BD clinic referral sample receiving open naturalistic treatment.

Results: Among 105 currently recovered patients, lifetime anxiety disorder was significantly associated with 50% of other unfavorable illness characteristics/current mood symptoms, including lifetime eating disorder, BD II subtype, earlier BD

onset age, higher CGI-BP-OS scores, episode accumulation (10 or more vs. fewer than 10 prior episodes), and any current anhedonia, euphoria, anxiety, and irritability; hastened depressive recurrence (log-rank $p=0.002$; HR=3.0, 95% CI [1.4, 6.3], $p=0.004$) driven by lifetime anxiety disorder itself (HR=2.8, 95% CI [1.2, 6.3], $p=0.016$) and lower BD onset age (HR=1.1, 95% CI [1.0, 1.1], $p=0.039$); and more than twice as high depressive recurrence rate (64.4% vs. 29.0%, $p<0.05$). Any current anxiety was significantly associated with 44.4% of other unfavorable illness characteristics/current mood symptoms, including lifetime anxiety disorder, first-degree relative(s) with mood disorder, mood episode accumulation, higher CGI-BP-OS scores, and any current sadness, anhedonia, euphoria, and irritability and hastened depressive recurrence (log-rank $p=0.042$; HR=2.0, 95% CI [1.0, 3.9], $p=0.046$) driven by lifetime anxiety disorder (HR=2.9, 95% CI [1.2, 7.2], $p=0.022$), but only numerically higher depressive recurrence rate (64.2% vs. 32.9%, $p=0.05$). In contrast, among 153 currently depressed patients, lifetime anxiety disorder/any current anxiety was not significantly associated with delayed depressive recovery or decreased depressive recovery rate. **Conclusion:** Additional research is needed to assess potential differential relationships between lifetime anxiety disorder and current anxiety and hastened/delayed depressive recurrence/recovery, respectively—specifically whether lifetime anxiety disorder versus current anxiety has a marginally more robust association with hastened depressive recurrence, whether both have marginally more robust associations with hastened depressive recurrence than delayed depressive recovery, and related clinical and therapeutic implications.

No. 125

A Case of Acute Lithium Toxicity

Poster Presenter: Amit Mistry, M.D.

Co-Authors: Bowie Han, Charles Dukes, M.D.

SUMMARY:

Background: Lithium is one of the most effective long-term treatments for bipolar disorder and used as an augmenting agent for depression. Despite its benefits, lithium's adverse effects are numerous. Considering the drug's narrow therapeutic index,

routine renal and endocrine function labs must be performed along with judicious monitoring of serum concentrations. Acute toxicity is manifested by gastrointestinal, cardiac and neurologic symptoms, the latter of which may lead to permanent neurological deficits known as syndrome of irreversible lithium-effectuated neurotoxicity (SILENT). In this case, we present a delirious patient suffering from lithium toxicity secondary to acute renal insufficiency. **Case:** Ms. M. is a 39-year-old female with history of bipolar disorder, renal tubular acidosis and hypertension who was admitted for acute kidney injury (creatinine 3.2) and sepsis with complaints of nausea, vomiting, diarrhea, dyspnea, and altered mental status. On arrival, the patient was agitated and pulling on her intravenous lines. Due to QTc interval of 556, clonidine was recommended for severe agitation, along with discontinuation of lithium. At first, lithium level was 2.83 but decreased over two days (1.31) with aggressive hydration. Her home dosage of lithium was unknown. On initial exam, the patient was unresponsive, nonverbal due to tracheostomy tube and demonstrated coarse tremors in all limbs. On day two, her tremor subsided as lithium levels waned, and responsiveness improved. In addition, her sepsis had resolved with dissipation of fever and improving leukocytosis. However, mental status was still unstable with nonsensical speech and periods of coherency in between. On the third day, she developed nephrogenic diabetes insipidus with serum sodium levels of 148. Liberal fluid intake was subsequently encouraged and sodium levels normalized at 146 ten days after initial hospitalization. By day six, the patient became oriented to person, place and time. At time of discharge on day 11, the patient's mental status had returned to baseline. **Discussion:** This patient demonstrated classic findings seen in acute lithium toxicity, with nausea, vomiting, diarrhea, QTc prolongation, and coarse tremors. Her delirium is likely secondary to a combination of infection, elevated lithium and renal tubular acidosis, with the latter two exacerbated by acute kidney injury. Since the patient's mental status slowly improved with resolution of sepsis and hypernatremia, SILENT is not a likely diagnosis. Studies have shown that the most common manifestation of SILENT is cerebellar dysfunction, such as dysarthria and ataxia, the

former of which eventually resolved in this patient. This scenario underscores the importance of aggressive treatment of lithium toxicity with fluid hydration and hemodialysis in severe cases to prevent chronic neurological sequelae.

No. 126

Antidepressants Have Complex Associations With Longitudinal Depressive Burden in Bipolar Disorder

Poster Presenter: Farnaz Hooshmand, M.D.

SUMMARY:

Background: Antidepressant use is common in bipolar disorder (BD), but controversial due to questionable efficacy/psychiatric tolerability. We assessed associations between baseline antidepressant use and longitudinal depressive burden in BD. **Methods:** Stanford BD Clinic outpatients enrolled during 2000–2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation and monitored longitudinally for up to two years with the STEP-BD Clinical Monitoring Form while receiving naturalistic treatment. Prevalence and clinical correlates of baseline antidepressant use in recovered (euthymic at eight weeks) and depressed patients were assessed. Kaplan Meier survival analyses assessed times to depressive recurrence and recovery in patients with versus without baseline antidepressant use, and Cox Proportional Hazard regression analyses assessed covariate effects. This study was limited to American tertiary BD clinic referral sample receiving open naturalistic treatment. **Results:** Baseline antidepressant use was less common among 105 recovered (31.4%) versus 153 depressed (44.4%) patients, and among recovered patients was associated with Caucasian race, higher rates of lifetime anxiety and eating disorders, and bipolar II disorder, as well as earlier bipolar onset, higher Clinical Global Impression scores and number of core psychotropics, and hastened depressive recurrence (only if mood elevation episodes not censored), driven by lifetime anxiety disorder. Baseline antidepressant use among depressed patients was associated with older age, female gender, higher anxiolytic and complex pharmacotherapy use rates, and higher number of core psychotropics, but no unfavorable illness characteristic or current mood

symptom and not time to depressive recovery.

Conclusion: Additional research is required to assess the complex associations between baseline antidepressant use and longitudinal depressive burden in BD. **Keywords:** Bipolar Disorder, Antidepressant, Longitudinal, Depression, Illness Characteristics

No. 127

A Case of Bipolar Disorder in an Adolescent With Lupus

Poster Presenter: Daniel Witter, M.D., Ph.D.

SUMMARY:

Neuropsychiatric symptoms are common in patients with systemic lupus erythematosus (SLE). Neuropsychiatric symptoms can result from the disease (lupus cerebritis), as well as treatment (steroids). There is a scarcity of literature regarding the treatment of acute mania in an adolescent population with SLE. We report a case of a 15-year-old female diagnosed six months previously with SLE who presented with a manic episode. She had not slept for several days and had become violent and difficult to redirect. At the time of admission, she exhibited significant mood lability (elevated and irritable), talkativeness and grandiosity. She reported that she had cured her lupus with her mind and that the sun had been following her. She became threatening to staff and was ultimately restrained after breaking medical equipment during an attempt to leave the hospital. The psychiatry consultation-liaison team was consulted to help manage psychiatric symptoms and subsequently followed the patient through her long hospitalization. In this poster, we discuss the difficulties in making an accurate diagnosis, as well as the challenges facing the psychiatric team in treatment of agitation, psychosis and behavioral issues.

No. 128

The Influence of Ketogenic Diets on Mood Stability in Bipolar Disorder

Poster Presenter: Allen Dsouza

Co-Author: Shariq Haque, M.D.

SUMMARY:

Background: Ketogenic diets consist of high fat, low to moderate protein and low carbohydrates.

Ketogenic diets have been known to have good efficacy in controlling intractable seizures in children. Anticonvulsants are known to be effective in the treatment of both seizure disorder and bipolar disorder. They reduce intracellular sodium by directly or indirectly acting on voltage dependent sodium channels and cause mood stabilization. From this stems the theory that ketosis causes a state of extracellular acidosis, which also causes reduced intracellular sodium, which is postulated to have mood-stabilizing effects. **Case:** 1) A 69-year-old woman diagnosed with bipolar II was started on antidepressants, which were discontinued because of side effects. She was then started on lamotrigine, which helped with her depression but caused confusion. She initiated the ketogenic diet and continued the lamotrigine. Over the two-year period of following the diet and maintaining ketosis, the patient was able to lower lamotrigine and ultimately stop it while achieving good symptom control. There were no adverse sequelae. 2) A 30-year-old woman with type II bipolar illness was tried on different psychotropics, which were discontinued because of multiple side effects. Lamotrigine helped her subjectively. She stopped lamotrigine in preparation for pregnancy and started the ketogenic diet and followed it for three years, monitoring her ketone levels. The patient noted significant symptom resolution and reported better mood stability with the ketogenic diet than with lamotrigine. 3) A 49-year-old female with bipolar disorder refractory to mood stabilizers was started on the ketogenic diet. Despite good compliance with the dietary restrictions for two weeks, the patient did not achieve a state of ketosis; weight loss and no clinical improvement in bipolar symptoms were noted.

Discussion: Neuronal activity involves sodium regulation via sodium pump activity. An abnormality in this sodium pump leading to increased intracellular sodium is known to be one of the factors in the pathophysiology of bipolar disorder. Many mood stabilizers reduce intracellular sodium levels by acting on voltage-dependent sodium channels. Ketosis causes a state of acidosis by decreasing blood pH. It is postulated that to counteract this, extracellular protons are exchanged for intracellular sodium, assisting in mood stability the same way as some anticonvulsants. **Conclusion:** The experience of patients in cases 1 and 2

demonstrate that a ketogenic diet, if followed diligently, can help with effective mood stabilization without any adverse events. Case 3 could not yield positive results because the patient could not achieve ketosis. So far, there has been only one study demonstrating the benefit of a ketogenic diet with bipolar disorder. Further research is needed to uncover the benefits of the ketogenic diet with bipolar type I and II.

No. 129

Delirious Mania: A Case Study and Review of Literature

Poster Presenter: Daniel Kim, M.D.

Co-Author: Carolina Retamero, M.D.

SUMMARY:

Background: Delirious mania is a potentially fatal disorder characterized by an acute onset of delirium, mania and/or psychosis, usually associated with catatonic features and not caused by a physical illness, toxicity or another psychiatric disorder. First described in 1832, this condition exists through evidence from clinical case reports. We describe a unique case of delirious mania without catatonic features, not responding to multiple pharmacological regimens. **Case:** Ms. R., an 18-year-old female with past history of schizoaffective disorder and bipolar disorder, was initially admitted to the inpatient unit of another hospital after watching pornography and masturbating nude in the office of a staff member. There, her manic symptoms and chaotic behavior were targeted primarily with chlorpromazine (doses totaling up to 1g per day), lorazepam and lithium, but the medications failed to effectively manage her symptoms. She was transferred to a different psychiatric unit for electroconvulsive therapy (ECT), where chlorpromazine and lithium were tapered off. The patient received eight ECT treatments, which resulted in improvement of her manic symptoms, more organized and goal-directed thought processes, and more appropriate behavior. Following the fourth ECT treatment, the patient was started on valproic acid and quetiapine, titrated up to 1,000mg and 300mg twice daily, respectively, which continued to effectively manage her symptoms. **Methods:** Retrospective review of the patient's chart was performed. A PubMed and

Psychiatry Online literature search was conducted using the terms “delirious mania” and “treatment of delirious mania.” **Discussion:** Delirious mania should be considered in a patient presenting with extreme excitement and inappropriate disinhibition during the manic phase of bipolar I disorder. Previously, delirious mania patients frequently presented with accompanying catatonia, as it was hypothesized that it was due to a disruption in dopaminergic pathways. However, given the lack of catatonic features in this particular patient, the pathophysiology of this disease may not be wholly explained by disruptions in dopaminergic pathways. We believe our case was further complicated by an anticholinergic state worsened by the high doses of chlorpromazine, as her incoherent speech and confusion improved after reducing the doses of chlorpromazine. As with previously reported cases, ECT was effective in treating delirious mania. Our patient was also stabilized with an antipsychotic and a mood stabilizer. **Conclusion:** Delirious mania should be considered in a patient presenting with extreme excitement and inappropriate disinhibition during the manic phase of bipolar I disorder. It may present in the absence of catatonic features, and the symptoms may be compounded by anticholinergic effects of certain antipsychotics, including chlorpromazine. ECT was effective in treating the symptoms of delirious mania.

No. 130

Multiple Inpatient Hospitalizations in a Patient With Rapid-Cycling Bipolar Disorder

Poster Presenter: Joseph Esposito, M.D.

Co-Authors: Sehba Husain-Krautter, M.D., Ph.D., Connie Chang, M.D., Daniel Grimes, M.D.

SUMMARY:

Background: Bipolar disorder is characterized by chronic recurrent exacerbations of mania, hypomania and depression that cause significant impairment in one’s social and occupational functioning and may result additionally in significant inter-episodic morbidity. Rapid cycling is a course specifier for the subset of bipolar patients who experience four or more discrete mood episodes within a 12-month period. The overall lifetime prevalence of bipolar disorder is 1.6%. The prevalence of rapid cycling within bipolar disorder

has been reported with wide variability (5–43%). In comparison to non-rapid cyclers, rapid cyclers are associated with younger age of onset, a first mood episode being a major depressive episode, increased substance abuse, and more numerous suicide attempts. While the exact etiology of rapid cycling is unknown, it has been associated with certain medical conditions such as hypothyroidism, closed head injuries, subarachnoid hemorrhage, focal temporal pole damage, homocystinuria, and immune system activation. The role of antidepressants in bipolar disorder is controversial, with most experts agreeing that antidepressants may not only induce mania/hypomania but also cause cycle acceleration even after discontinuation.

Case: P. C. is a 53-year-old divorced Caucasian female diagnosed with bipolar disorder at the age of 19. Her medical history is significant hypothyroidism, hypertension, mild renal impairment, and a history of DVT. Her family history is significant for a brother also diagnosed with bipolar disorder. Since May of 2009, the patient has been admitted to the Delaware Psychiatric Center 19 times for manic episodes with associated psychosis. The patient’s readmission times have ranged from 54 weeks to as little as two weeks living in the community. The patient has failed multiple trials of mood stabilizers and antipsychotics in the past. She is currently admitted to Delaware Psychiatric Center after her most recent mood episode in which she attacked staff members at her group home. At the beginning of her hospital stay, she required 1:1 observation to prevent assaultive or sexual behavior toward other patients. She has since been brought back to her baseline on a combination of mood stabilizers and antipsychotics; however, she is still prone to rapid decompensation after missed doses of medications or stressful events such as a family gathering. She is currently awaiting placement at a new group home facility in the community.

No. 131

Testosterone Replacement Therapy-Induced Psychotic Mania

Poster Presenter: Wanda Shao

Co-Authors: Sina Hashemi, Christian Cornelius

SUMMARY:

Background: Testosterone is well known for its

neurobehavioral effects on aggression; however, most literature focuses on the abuse of anabolic steroids or suprathreshold testosterone blood levels. Few case studies exist on low-dose testosterone replacement therapy causing severe psychiatric complications. This report details a case of psychotic mania associated with routine IM testosterone replacement therapy in a patient with normal serum levels. **Case:** A 38-year-old male with hypogonadism on IM testosterone enanthate (200g/mL, 0.75mL IM one to two times a week) presented to the emergency department following acute onset of mania and psychosis. Symptoms included thought broadcasting, auditory hallucinations, paranoia, grandiosity, insomnia for five days, and severe agitation leading to seclusion and restraint. All labs on admission were unremarkable, including UDS, CBC, CMP, TSH/T4, RPR, folate, and B12. Serum testosterone was determined to be within "mid-normal" range by endocrinology. Total testosterone level on admission was 603ng/dL and 505ng/dL the following day (normal range: 250–1,100ng/dL). The patient reported fluctuating serum levels for the past three years on testosterone therapy. One month prior to admission, serum testosterone was found to be elevated, and the dose was lowered to 0.3mL. The patient also had a history of mood changes on high-dose prednisone. Family history consists of bipolar disorder in a paternal cousin. Lastly, on retrospective symptom review, the patient met criteria for bipolar II disorder. TR was initiated on mood-stabilizing agents quetiapine and valproic acid. Dosages were titrated to the following: quetiapine 200mg daily and valproic acid 1,250mg daily (VP level 69). His symptoms resolved within five days. **Discussion:** This case demonstrates that even routine testosterone replacement therapy may precipitate severe psychiatric symptoms in susceptible individuals. High testosterone levels increase dopaminergic activity in the nucleus accumbens leading to amygdala activation and mania. Implications are such that treatment with any form of testosterone replacement therapy should be monitored carefully in selected patient populations. It is important to screen for family history and prodromal mood symptoms during the course of treatment. The speed and degree of fluctuations in testosterone level (not just absolute levels) may correlate mood

changes. **Conclusion:** Future studies are needed to examine how the flux of serum testosterone from peaks to troughs correlates with mood changes. Providers should exercise caution when choosing the type of testosterone supplementation and when adjusting the dose to avoid rapid changes.

No. 132

Lithium Monitoring in Veterans: A Quality Improvement Project

Poster Presenter: Musa Yilanli, M.D.

Co-Authors: Anindita Chakraborty, M.D., Umair Daimee, M.D., Ashika Bains, M.D., Sunbal Ashraf, Nicole Stromberg, M.D.

SUMMARY:

Background: Lithium has established efficacy in the treatment of acute mania and as prophylactic maintenance therapy for both mania and depression. Due to its narrow therapeutic index, lithium is associated with serious side effects including renal and thyroid dysfunction. This highlights the need to verify appropriate clinical monitoring for patients being treated with lithium. The VA/DoD guidelines for management and treatment of bipolar disorder recommend baseline renal and thyroid function and weekly lithium levels during titration, as well as annual complete blood counts with differential counts and renal and thyroid function during maintenance therapy. **Objective:** This quality improvement project is aimed at improving patient care by improving adherence to maintenance monitoring for those on lithium at a VA medical center in Detroit, MI. Specifically, we plan to increase maintenance monitoring to 80% over a six-month period. **Methods:** Using the QI PDSA (Plan, Do, Study, Act) framework, we conducted a retrospective chart review to identify current standards of lithium monitoring on all outpatients on lithium maintenance therapy. We identified barriers to change and implemented interventions to improve practice with a plan to re-audit to monitor progress. Our first PDSA cycle involved reminding psychiatrists to order labs on patients who were not current on serum monitoring guidelines. These reminders were clinical notifications sent via the electronic medical record (CPRS). The second PDSA cycle involved physician education, wherein monitoring guidelines will be posted in psychiatrist

offices. The third PDSA cycle involved collaborating with medical informatics specialists to link electronic lithium orders with laboratory studies. This will require physicians to “opt out” of ordering tests by creating a default of testing. **Results:** Of 107 patients prescribed lithium, 36% (39) did not have routine monitoring in keeping with the guidelines. Out of these, 97% did not have lithium levels within six months, and 21% did not have a serum creatinine level, 33% did not have thyroid function testing and 31% did not have a CBC with differential counts performed within the past year. Out of these 39 patients, 14 had no mental health follow-up appointment scheduled. Barriers to adherence were both physician-related and patient-related, wherein labs were infrequently ordered or patients failed to show for follow-up appointments. **Conclusion:** Current standards of lithium monitoring fall short of recognized guidelines, and there is a need to create systems to support proper lithium monitoring. The most common reasons for nonadherence to guidelines were physician-based. For this reason, our interventions are designed to increase physician knowledge and create laboratory orders that reinforce the expectation of testing. With improved rates of maintenance monitoring, we will enhance our ability to prescribe lithium safely.

No. 133

Thyroid Supplementation as Mood Stabilizing Treatment for Female Patients With Rapid-Cycling Bipolar Affective Disorder

Poster Presenter: Jennifer Jacobson, M.D.

SUMMARY:

Background: Research suggests a higher prevalence of subclinical hypothyroidism and thyroid autoimmunity in patients with affective disorders compared to the general population. Positive antithyroid antibodies are associated with rapid-cycling bipolar disorder, which disproportionately affects women. Prior studies examining the efficacy of supraphysiological levothyroxine (T4) augmentation of mood stabilizers in refractory bipolar patients have demonstrated efficacy for symptom control, but the presence of thyroid autoimmunity is inconsistently reported. **Methods:** We conducted a retrospective chart review of rapid-cycling female bipolar I and II patients on mood

stabilizers who screened positive for antithyroid antibodies (TPO or thyroglobulin) and were augmented with T4. Chart review confirmed bipolar disorder with rapid cycling. Clinical visits beginning six months prior to T4 augmentation to six months after maintenance T4 dose stabilization were reviewed, the number of mood episodes was calculated, and the visit symptom severity was categorized as severe, moderate, mild, partial remission, or full remission based on *DSM-5* criteria. The baseline and final thyroid stimulating hormone (TSH) and free thyroxine levels and percent TSH suppression were calculated, and Patient Health Questionnaire-9 (PHQ-9) scores were trended. **Results:** Six female rapid-cycling bipolar patients with thyroid autoimmunity and T4 augmentation were identified. Moderately dosed T4 reduced the frequency and severity of mood episodes. Total mood episodes decreased from 2.17 in the pretreatment six months to 0.33 six months after reaching maintenance T4 dose. The severity of depressive symptoms decreased in all patients from 1.59 (four-point Likert scale, 0 for remission, 4 for severe) to 0.81. The severity of manic symptoms decreased in all but one patient, from 0.54 to 0.38 on the same scale. The average final dose of thyroxine was 100.33µg. Three patients exhibited 10 to 15% TSH suppression. One patient had a 10% increase in TSH. PHQ-9 scores decreased from 10.56 to 6.58. Thyroxine supplementation was well tolerated, with no adverse events reported. **Discussion:** In this retrospective review, moderate-dose T4 augmentation improved mood outcomes of female bipolar rapid cyclers with thyroid autoimmunity who had not remitted with mood stabilizers. These findings echo results from prior investigations of T4 augmentation in refractory depressed, rapid cycling and non-rapid cycling bipolar patients. A key difference in this cohort is that all patients screened positive for thyroid autoimmunity, whereas prior studies inconsistently report antithyroid antibody positivity. This raises the question of whether antibody screening might positively select for T4-responsive female bipolar rapid cyclers. We recognize medical concerns with long-term T4 treatment, which creates an impetus to better understand the lowest effective T4 dose. TSH suppression might be useful to guide dosing.

No. 134**Mania Secondary to Venlafaxine Discontinuation**

Poster Presenter: Laura Rodriguez-Roman, M.D.

Co-Authors: Fei Chen, Gary Kanter

SUMMARY:

Background: In the assessment of new-onset bipolar disorder, differential diagnosis should always include illegal substance use, medication use, organic illness, and psychiatric diagnosis. Sometimes, things are not always what they seem. A bipolar diagnosis is made after the first episode of mania without the need for a depressive episode or a second episode of mania. Bipolar disorder is a common, severe chronic illness that adversely affects 2.6% of the U.S. adult population every year. It is well documented that the use of antidepressants can trigger a rapid mood switch from depression to mania in 20 to 40% of bipolar patients. Also, concerns about the possibility of mania being precipitated by stimulants has been documented. What is less known is the possibility of an antidepressant withdrawal-induced mania. In this poster, we report a case of first mania episode after abrupt discontinuation of an antidepressant. **Case:** This is the case of a 22-year-old male with previous history of major depressive disorder recurrent in partial remission; social anxiety; and attention deficit disorder, combined type, that was being treated successfully on an outpatient basis with use of venlafaxine and lisdexamphetamine. Secondary to insurance difficulties, the patient was unable to receive venlafaxine. Three days later, the patient had to be admitted to the inpatient psychiatric unit for stabilization, as he became belligerent, irritable, distractible, talkative, and more energetic, with decreased need for sleep. He was also spending a substantial amount of money on shopping sprees. During admission, lisdexamphetamine was discontinued, and venlafaxine was not restarted. Valproic acid and aripiprazole were initiated. Upon discharge, the patient's mood was improved but not entirely back to baseline, with irritability and decreased sleep still lingering. Back in the outpatient clinic, valproic acid and aripiprazole were discontinued, and venlafaxine was restarted. Two days later, the patient reverted back to baseline. **Conclusion:** Substance, SSRI, SNRI, or other medication use is already routinely taken into

consideration when evaluating for a first episode of mania. However, the rapid discontinuation of antidepressants should also be more readily taken into account prior to making a primary psychiatric diagnosis of bipolar disorder, as illustrated by this case report. We will discuss the differential diagnosis and workup for patients with similar presentations.

No. 135**Risperidone-Induced Mania in First-Episode Psychotic Patient**

Poster Presenter: Shahan Sibtain, M.D.

Co-Authors: Adel Nesheiwat, Pooja Mehta, Asghar Hossain

SUMMARY:

Background: Risperidone-induced mania in patients presenting with psychotic features has been reported quite often. There are few individuals in which low dose of atypical antipsychotics causes increased forebrain dopaminergic activity, which results in mood symptoms. Literature has been reviewed, and we found many cases reporting incidences of risperidone-induced elevated moods and manic/hypomanic symptoms. **Methods:** Literature has been reviewed from various sources. Articles and case reports from PubMed and other journals have been studied. **Case:** We present a case of a 20-year-old female who was treated with risperidone during her first episode of psychosis. She has no prior history of mental illness or inpatient psychiatric hospitalizations and presented to the emergency department with psychotic symptoms secondary to first-time LSD use three days prior. She was started on risperidone 1mg twice daily, which was later increased to 2mg twice daily. After 10 days, the patient's psychosis improved, but she started presenting with prominent manic symptoms. She was exhibiting agitation, irritability, high energy, hyperactivity, unpredictability, and extreme mood lability. Later, divalproic sodium 250mg twice daily was added and titrated up to 500mg twice daily. Gradually, her symptoms improved, and the patient was discharged to a structured outpatient program to follow-up. Literature was reviewed to find the reason of such sudden change of symptoms and mood in the patient. We propose that these symptoms our patient exhibited may be side effects from treatment with risperidone. We discuss our

approach in managing this patient, the mechanisms for the manic symptoms induction, and possible ways to prevent this induction.

No. 136

Difficulties in Diagnosing Bipolar Disorder in a 45-Year-Old Female With Malar Rash

Poster Presenter: Michele Vargas

SUMMARY:

Ms. F., a 45-year-old African-American female with psychiatric history significant for a provisional diagnosis of bipolar I disorder and medical history significant for hypertension, presents to the inpatient psychiatric unit for mania of unknown etiology. Ms. F. had been seen by the psychiatry consult service in the emergency department one year prior, where she had presented with what appeared to be a first manic episode in the context of increased life stressors and a urinary tract infection. A provisional diagnosis of bipolar disorder was given; Ms. F. was discharged from the emergency department and subsequently lost to follow-up. This time, one year later, Ms. F. presents again with recent onset of pressured speech, impaired sleep, visual hallucinations of angels, increased goal directed activities, and bizarre behaviors. Mental status exam shows that she is hypersexual, tangential, irritable, and responding to internal stimuli. Her physical exam reveals a malar rash and multiple erythematous plaques. Given the dermatological findings and unexplained mania, laboratory work focused on autoimmune symptomatology was drawn. Labs were notable for an elevated CRP, negative ANA and negative dsDNA. MRI looking for vasculitis was largely unremarkable, with a tiny cerebellar infarct. These findings made a rheumatological explanation for her manic episode far less likely. The purpose of this case is to highlight the challenges faced when diagnosing bipolar disorder in light of medical conditions. This leads to an opportunity to discuss the consideration of a rare cause of mania—lupus cerebritis.

No. 137

Unmasking Bipolar Disorder: A Perfect Storm of Biological, Pharmacological and Genetic Factors

Poster Presenter: Maura Tappen

SUMMARY:

Ms. F. is a 50-year-old woman who presented voluntarily to the emergency department to be evaluated after a physical assault. Her psychiatric history was significant for anxiety and depression as well as ADD that had been diagnosed two years ago and treated with lisdexamfetamine. Of note, within the last year, she had been diagnosed with a right temporal meningioma, which led to a seizure disorder. Ms. F. explained to providers that over the past four to six weeks, she had developed increasing suspicion that people were following her, to the point where she had a journal full of license plates of potential stalkers. This culminated in her aggressively approaching a man in the parking lot of a local store; it is there where she reported this man assaulted her. In the ED, Ms. F.'s physical examination was unremarkable. Her electrolyte panel and complete blood count were within normal limits. Blood alcohol, salicylate and acetaminophen tests were negative. Her TSH level was mildly elevated at 4.70, but her free T4 levels were within normal limits. A CT scan of her head (without contrast) showed subtle increased attenuation in the right cavernous sinus extending along the proximal right ventral margin of the tentorium, which was consistent with a meningioma seen in prior MRI imaging. On further examination, Ms. F. endorsed significant anxiety, racing thoughts and inability to focus. She reported a history of depressive episodes, which were then followed by high-energy episodes paired with verbosity. Ms. F. believed that her increasing paranoia began after starting aripiprazole to augment her antidepressant, fluoxetine. Her symptoms persisted even when she was switched to brexpiprazole about one to two weeks prior to admission. Upon further investigation, a family history of bipolar disorder was also revealed. In this poster, we discuss the interplay of various factors that contributed to this patient presenting with such significant paranoia and a systematized delusional system. These factors include a brain tumor, seizure disorder and multiple potentially psychoactive agents, all in the context of a likely mood disorder. This case particularly highlights the importance of a thorough history when considering diagnoses and treatment modalities.

No. 138

Stevens-Johnson Syndrome Precipitated by Initiation of Valproic Acid with Haloperidol and Risperidone as Treatment for Bipolar I Disorder

Poster Presenter: Christian Umfrid

Co-Author: Jonathan Avery, M.D.

SUMMARY:

We present the case of Ms. P., a 29-year-old Guyanese-American woman with bipolar I disorder admitted to the inpatient burn unit and presenting to the psychiatric consultation service with a severe cutaneous adverse drug reaction developed after initiation of valproic acid (VPA), haloperidol, risperidone, and benztropine during an outside psychiatric hospitalization. The patient reported a history of milder skin sloughing and alopecia with co-administration of VPA and a nonsteroidal anti-inflammatory drug during her first psychiatric hospitalization, which resolved with medication discontinuation. She was hospitalized a second time immediately prior to presentation for manic symptoms, and VPA was restarted. The patient subsequently developed a facial blister progressing to a widespread macular rash, bullae and desquamation, with oral and vaginal mucosal involvement and fever. Stevens-Johnson syndrome (SJS) was verified via skin biopsy. The patient required treatment with high-dose corticosteroids and intravenous immunoglobulin with eventual dermatologic improvement. While SJS and toxic epidermal necrolysis (TEN) are associated with many antiepileptic drugs, there is less evidence for an association with VPA, with reported cases typically occurring with co-administration of other antiepileptic drugs more frequently associated with these conditions, such as lamotrigine or carbamazepine. This case highlights the risk of SJS/TEN with VPA initiation, a reaction uncommonly documented with its use as a single mood stabilizing agent. It further elucidates potential approaches to ongoing treatment of mania in a patient with SJS precipitated by several commonly used therapeutic agents and at high risk for future severe cutaneous reactions.

No. 139

Psychotic and Manic: Phenezine Withdrawal, Vaporized DMT or Bipolar Disorder?

Poster Presenter: David Chong

Co-Authors: Tanida Brown, Wanda Shao, Christian Cornelius

SUMMARY:

Refractory bipolar depression is difficult to treat. When all first- and second-line options, such as atypical antipsychotics and augmentation with SSRIs, SNRIs or TCAs, have failed, is the next rational step a trial of monoamine oxidase inhibitors (MAOIs) or even an experimental drug such as N, N-dimethyltryptamine (DMT)? Both MAOIs such as phenelzine and DMT have been used to treat depression, but in very different capacities. The potential for MAOIs to precipitate manic activation in bipolar patients is well documented; however, literature on mania and psychosis induced by abrupt MAOI withdrawal is sparse. DMT is an experimental drug showing promising results by anecdotal accounts and small clinical trials to treat refractory depression. Within the past ten years, a resurgence of attention to the antidepressant effects of DMT has resulted in tourists venturing on spiritual retreats to experience firsthand the potential benefits of DMT. Additionally, new clinical trials investigating DMT and depression have emerged in multiple countries. Regardless, the use of DMT in treatment of depression remains speculative, and the neuropsychiatric effects of chronic DMT use are unclear. The following report details a rare and interesting case of one psychiatrist's creative solution to his own bipolar depression, which resulted in acute psychosis in the context of phenelzine withdrawal and chronic DMT use.

No. 140

Management of Treatment-Resistant Rapid-Cycling Bipolar Disorder

Poster Presenter: Tahira Akbar, M.D.

Co-Authors: Rassam Khan, Chirag Patel, Faiz Cheema, M.D., Asghar Hossain

SUMMARY:

Background: Rapid-cycling bipolar disorder is defined as the presence of at least four mood episodes within a 12-month period that meet the criteria for hypomania, mania or a major depressive episode. The majority of studies have identified the phenomenon of rapid cycling as a marker for high risk of recurrence and resistance to conventional

drug treatments. The most consistent demographic finding has been a positive association between rapid cycling and female gender, with most studies finding that women comprise 70–92% of samples of rapid-cycling patients. The purpose of this case report is to discuss the management of treatment-resistant rapid-cycling bipolar disorder. **Case:** We present a 64-year-old Caucasian female, single, with a history of schizophrenia and rapid-cycling bipolar disorder. She was brought in for aggressive behavior, agitation, decreased need of sleep, and auditory and visual hallucinations. The patient is on perphenazine 12mg twice daily by mouth and aripiprazole 400mg intramuscularly monthly. She has paranoid delusions and command-type auditory hallucinations of harming herself. Her speech is rapid, judgment is poor with minimal insight and thought process includes blocking flight of ideas. She has history of depressive symptoms and multiple inpatient psychiatric hospitalizations. Valproic acid was recommended but refused by the patient's family. Hence, her medications were adjusted by increasing perphenazine 16mg by mouth and addition of lithium 300mg daily and paliperidone 3mg by mouth, and her symptoms improved. **Discussion:** Rapid-cycling bipolar disorder is characteristically unresponsive to conventional interventions. It is important to consider adjunct medications in addition to the recommended treatments. Current research shows that adding adjunct medications rather than switching medications is more beneficial to the patient. There is a growing clinical impression in the practice guideline that response rate to multiple medications is greater than response rate to monotherapy. Divalproex is the treatment of choice when using a mood stabilizer for monotherapy, while lithium is a first-line choice for rapid-cycling patients with a current episode of depression, euphoric mania or hypomania. Lamotrigine can be a first-line option for patients who present with depression, and carbamazepine is the choice for patients with mania. Carbamazepine may also be combined with divalproex and lithium if needed. Thyroid hormone and atypical antipsychotics are important backup strategies. Atypical antipsychotics are a second-line alternative for monotherapy, particularly for mania, while conventional antipsychotics are a third-line option. **Conclusion:** Rapid-cycling bipolar disorder is rare but

is difficult to treat and causes considerable disruption to the lives of patient and family. It can be relatively resistant to monotherapy or conventional treatment. We can get a better response by adding adjunct medications to conventional treatment.

No. 141

Hoarding Disorder: Comorbidity With Major Depression and Cost-Effective Treatment Modalities

Poster Presenter: Tahira Akbar, M.D.

Co-Authors: Rassam Khan, Barbara Palmer, Asghar Hossain

SUMMARY:

Objective: We will discuss the current cost-effective treatment available for managing hoarding disorder and depression. **Background:** A recent study conducted by Frost and colleagues that examined the largest sample of participants to date confirmed that major depressive disorder was the most frequently occurring comorbid condition (more than 50%) and that kleptomania was a factor in 10% of the sample. Clinically significant hoarding affects between six million and 15 million persons in the United States, according to recent epidemiological studies, occurring at twice the rate of obsessive-compulsive disorder (OCD). **Case:** We report a case of a 51-year-old Caucasian female, single and unemployed, presenting to BRMC. The patient has no formal psychiatric history, has never been hospitalized and is not on any medications. She has been hoarding possessions and reportedly has not been attending to family's phone calls. The house was found in a state of disarray: the toilet was clogged and had not been used for years, there were used tissues filled with blood from her menstrual cycle piled up, and there were empty bottles and cans, newspapers, and magazines all over. The patient has not been taking care of her activities of daily living and instrumental activities of daily living. On presentation in the ER at BRMC, the patient was extremely malodorous and presented disheveled. Her hair was in a beehive, not trimmed or washed for a long time. She had poor judgment, and insight was minimal. She presented symptoms of anhedonia, helplessness and lack of energy, although she denied suicidal ideation or auditory or visual hallucinations. She was started on Risperdal

1mg twice a day, and she integrated into milieu, individual and group therapy. **Discussion:** Since major depression is the most common comorbidity of hoarding disorders, Open-label trials of venlafaxine and paroxetine taken for at least three months yielded promising results in improving symptoms of hoarding and depression concurrently. Individually administered CBT, following the protocol developed by Steketee and Frost, appears to be the most effective treatment, with a 70 to 80% rate of clinical improvement for patients who complete treatment. Given the expense and limited availability of individual treatment, alternatives, including group CBT, web-based treatment, in-person self-help groups, and in-home coaching assistance, may provide sustainable and affordable approaches to this significant societal problem. A pilot study is under way to test the feasibility, acceptability and effectiveness of computer- and Webcam-delivered CBT for hoarding symptoms. Given the large number of persons who hoard, the debilitating and potentially deadly consequences, and the limited insight into the severity of their symptoms, it seems essential to learn more about this complicated problem. Further research to better understand hoarding and to provide additional cost- and resource-sensitive solutions is ongoing.

No. 142

Non-Ambulatory for Five Years: A Case of Severe Specific Phobia

Poster Presenter: Awais Aftab, M.D.

SUMMARY:

Ms. L., a 73-year-old Caucasian female with a psychiatric history of depression and anxiety, was admitted on medicine service for management of B cell lymphoma. She had been non-ambulatory at home for the past several years. After an unremarkable neurological examination, psychiatry was consulted with suspicion for conversion disorder. Five years earlier, Ms. L. had sustained tibial and fibular fractures after she had dropped heavy cylinders of juice on her right leg. This resulted in an extended stay in the hospital and rehab. She was traumatized by this incident and developed an excessive, irrational fear of falling down and having another fracture. After the fracture, she refused to stand or walk, stayed in bed, and had continued to

do so for the next five years. Her husband and son encouraged her constantly, but eventually gave up. Her primary care physician had treated her for depression and anxiety in the past, and she was on diazepam 5mg oral twice daily and paroxetine 25mg oral daily and had been on them for years. She lived with her husband, who was also the POA. On psychiatric assessment in the hospital, she recognized that the fear was irrational and excessive. She was diagnosed as having a specific phobia. Physical therapy was recommended for deconditioning. The psychiatry consultation-liaison team conducted brief bedside cognitive behavior therapy interventions. She showed good insight and initial favorable response. Subsequently, she was transferred to the MICU due to respiratory and renal failure; patient and family chose to pursue hospice care. Further psychiatric treatment of her phobia, therefore, could not be conducted. Traumatic encounters often, but not always, precede the development of specific phobia. Specific phobias usually develop in early childhood before the age of 10, but situational specific phobias tend to have a later age of onset. Older individuals are more likely to report a phobia of falling, and it is associated with decreased quality of life and may serve as a risk factor for major neurocognitive disorder. Exposure therapy is the treatment of choice for specific phobia. Cognitive restructuring is also of benefit. Medications, especially benzodiazepines, are valuable for short-term management of acute anxiety, but have not demonstrated long-term efficacy. Although the fear of falls is a common phobia in the elderly, the severity of the phobia seen in this case is unusual. This case illustrates the importance of recognizing specific phobia as a diagnostic possibility in the consultation-liaison setting and the ability to commence bedside cognitive behavior therapy techniques.

No. 143

Oniomania

Poster Presenter: Raja Mogallapu, M.D.

SUMMARY:

Background: Compulsive buying is defined as frequent preoccupation with buying or impulse to buy that is experienced as irresistible, intrusive, and/or senseless or frequent buying of items that

are not needed or shopping for longer periods of time than intended. The buying preoccupations, impulses or behaviors cause marked distress, are time consuming, significantly interfere with social or occupational functioning, result in financial problems, and do not occur exclusively during periods of hypomania or mania. One study found that compulsive buyers had elevated scores on the Beck Depression Inventory–Anxiety Scale and the Obsessive-Compulsive Inventory. Compulsive buyers and their first-degree relatives often have comorbid psychiatric disorders, particularly mood, anxiety, substance use, and eating disorders. **Case:** A 54-year-old African-American married working female with no significant psychiatric history is referred to the outpatient department for depression. She endorsed depressive mood, hopelessness, guilt, and fleeting suicidal thoughts with no plans and no suicide attempts in the past. No other symptoms of depression are positive during evaluation. She described her stressor as compulsive shopping. As soon as she gets her paycheck, she compulsively shops until she spends the last penny. In spite of multiple redirections, she keeps doing it. She ran out of space in her house from her compulsive shopping, could not accommodate the things in her house and kept giving items away to the thrift stores. If she was stopped from doing that, she got withdrawal in form of being restless. Due to the incidents, her relations with her family members are strained. She acknowledged buying as her intrusive thought and buying as a compulsion. YBOC Scale tested positive. Her mother had a history of depression. The patient is started on fluvoxamine 50mg initially and slowly titrated to 200mg. Behavioral interventions were done by making her husband collect her paycheck. Credit cards were taken away from her. The entire extra luggage at the house was slowly disposed. The patient had a lot of anxiety during this process. It was controlled with cognitive therapy, relaxation techniques and medicine. **Discussion:** Females are more affected than males. There are four distinct phases of compulsive buying: 1) anticipation; 2) preparation; 3) shopping; and 4) spending. An early open-label trial using fluvoxamine showed benefit. In another open-label trial, citalopram produced substantial improvement. In this particular study, responders to open-label citalopram were then enrolled in a nine-week randomized placebo

controlled trial. Compulsive shopping symptoms returned in five of eight subjects assigned to placebo, compared with none of the seven who continued taking citalopram. Cognitive behavior therapy challenges the patient's cognitive distortions and faulty schemas about shopping.

No. 144

Anxiety and Depressive Disorders in Patients With Complicated Grief

Poster Presenter: Cátia Alves Moreira

Co-Authors: Joana Macedo, Marta Guedes, Gonçalo Sobreira, João Miguel Oliveira

SUMMARY:

Grief is an adaptation to loss involving a series of tasks or steps to make this happen. According to Sullivan, the grieving process provides to the survivor the opportunity to disentangle the binding ties. Under normal conditions, the grieving process eliminates these bindings that threaten to keep the illusions of eternal love. In a minority of cases, the grief does not evolve favorably, resulting in severe consequences that affect the mental and physical health of mourners. The complicated grief (CG) has, in fact, an association with health problems such as depression, anxiety, alcohol and drug abuse, and suicide risk. Several authors have documented high rates of comorbidity between CG and depressive disorders/anxiety disorders. Despite this, the real correlation is not well defined. In this study, we defined the main objective as evaluating the prevalence of depressive and anxiety symptoms in patients with CG. This was a cross-sectional, analytical and qualitative study where the sample was composed by users over 18 years old with significant loss for a period of six months or more who were evaluated by a general practitioner.

No. 145

Novel Treatment of Severe Social Anxiety Disorder With Adjunctive Methylphenidate

Poster Presenter: Andrew Nguyen

Co-Authors: Anthony Bui, David Safani

SUMMARY:

A 39-year-old Asian-American male with history of well-controlled major depressive disorder (MDD) presented for the treatment of severe social anxiety

disorder (SAD). At that time, he was on several medications that included tranylcypromine 10mg three times daily, clonazepam 3mg daily, lamotrigine 150mg every evening at bedtime, and quetiapine 50mg every evening at bedtime. He was gradually titrated off quetiapine and lamotrigine with no effects on anxiety or depression. He was then trialed on methylphenidate 5mg daily, with subsequent report of improvement in anxiety. Literature search yielded reports of effective augmentation using stimulants for depression, but there are only a few cases that studied the effect of stimulant augmentation for SAD. Notably, a well-known adverse effect of stimulants is a possible induction or exacerbation of anxiety. Recent data, however, suggest a paradoxical benefit may exist when using stimulants for the treatment of SAD. A recent case report described two adult patients with SAD and ADHD who experienced improvement in symptoms for both disorders with the use of methylphenidate monotherapy. Of note, methylphenidate was well tolerated in both patients with no significant side effects. Another case described an adult patient with treatment-refractory depression and ADHD who had significant improvement in depressive symptoms when treated with tranylcypromine 50mg daily, an MAO inhibitor commonly used in SAD, and methylphenidate up to 45mg daily. Although this patient did not have the diagnosis of SAD, a lack of cardiovascular complications with concomitant use of MAO inhibitors and stimulants was remarkable. While the effectiveness of stimulants as an adjunct for depression is well studied, there is no current literature describing the use of an MAO inhibitor with stimulants for SAD. We present an adult suffering from severe SAD refractory to multiple pharmacotherapies. The addition of a stimulant as an adjunct to tranylcypromine 10mg three times daily presented a possible increased risk of cardiovascular side effects. Given the severity of his symptoms, the patient decided to proceed with treatment despite this risk. Methylphenidate 5mg daily was trialed, and subsequent improvement in both anxiety and depression were noted immediately without any major side effects. Of note, the patient has been well controlled on the treatment regimen for the last month. Successful use of stimulant augmentation in patients with SAD demonstrates the possibility of improving current

approaches and practices for treatment of SAD. However, it is important to keep in mind cardiovascular comorbidities before considering this treatment approach.

No. 146

Adaptive Evolutionary Considerations of Social Anxiety and Depression in a Clinical Scenario

Poster Presenter: Luke Romanow

SUMMARY:

Mr. D. is a middle-aged Caucasian male with a longstanding history of social anxiety and depression who presented to an outpatient clinic for further medication management. His mood and anxiety would often worsen in the context of perceived social isolation (this occurred in spite of a successful professional career and fairly strong relationships with his children). He experienced side effects that limited the role of medications in his treatment. However, supportive measures and increased social interactions (in particular, fostering a new relationship with someone the patient met online) led to steady improvement in his symptoms. This poster will discuss evolutionary considerations in the adaptive aspects of anxiety (in particular social anxiety) and depression, which can provide adaptive benefits in the context of environmental difficulties a patient may be facing. Such benefits can include allowing an individual to filter out extraneous concerns and focus on important conflicts or stressors they are facing. Also, aspects of social anxiety can actually be adaptive and protective when viewed through a lens of the importance of social standing and cooperation with peers in the setting of hunter-gatherer societies in the environment our ancestors faced 100,000 years ago.

No. 147

A Case of Adult Choking Phobia Successfully Treated With Mirtazapine and Paroxetine

Poster Presenter: Ming B. Chi, M.D.

SUMMARY:

Background: Specific phobia related to choking, also known as choking phobia or phagophobia, is a rare disorder characterized by an intense, pathological fear of choking on foods and can lead to significant psychiatric and medical complications. Choking

phobia patients typically have a prior choking event with rapid onset of symptoms afterwards. The epidemiology of choking phobia is unclear but is likely low. Evidence-based treatment for choking phobia is also lacking. Current literature shows some treatment success with serotonergic and noradrenergic agents, as well as benzodiazepines.

Case: A 44-year-old Caucasian male presented to our clinic with a seven-year history of choking phobia after a near-choking event at age 37 while eating pizza. He quickly developed a severe phobia of choking during meals and refused to eat solid foods or liquids. He was unable to continue his work and required hospitalization for severe malnutrition and weight loss. Symptoms partially improved on mirtazapine 30mg, and he has been subsisting on mashed potatoes and clear liquids for the past seven years. No significant past or comorbid psychiatric disorders were present. A trial of buspirone was unsuccessful and discontinued. Paroxetine was started and titrated to 20mg. Two months later, the patient reported five days of eating biscuits, which is more than he had eaten since phobia onset. After three months of paroxetine at 20mg, the patient showed marked improvement in his choking phobia and started eating a wide variety of solid foods daily. His eating has essentially returned to normal, though he still prefers meals at home. It should be noted that at the same time he started paroxetine, the patient found regular at-home employment and steady income. The patient did not engage in CBT or behavioral therapy during this time due to transportation constraints. **Discussion:** The augmentation of paroxetine to mirtazapine in this patient showed a remarkable reduction in choking phobia symptoms, given the chronicity and severity. A review of the literature suggests that this specific combination to successfully treat choking phobia has not been reported before. Paroxetine's known noradrenergic and serotonin reuptake blockade combined with mirtazapine suggests the possibility for a noradrenergic role in attenuating the phobic fear response. This case adds to a growing body of data on the treatment of this rare disorder and suggests that a combination of unique noradrenergic and serotonergic modulation may be a viable treatment option to consider in adult choking phobia patients. Continued investigation into the neurobiology of phobia symptoms can shed further

light on the pathophysiology of specific phobia. Further research with robust sample sizes and higher scientific rigor is needed to help elucidate treatment strategies in this rare disorder.

No. 148

Epigenetics Contributing to Social Anxiety: An Identical Twin Case Report

Poster Presenter: Swati Divakarla, M.D.

Co-Author: Charles Wisniewski

SUMMARY:

Anxiety disorders represent one of the most common psychiatric conditions in the U.S. and often result in significant impairments and chronic medical problems, also resulting in significant health care costs. Social anxiety, specifically, defined as fear and/or anxiety of being negatively evaluated in most social situations, has an estimated lifetime prevalence of 12.1%. Based on current research and epidemiological studies, the onset and progression of social anxiety appears to be influenced by neurobiological, temperamental, genetic, and environmental factors, showing a high heritability rate and frequently co-occurring with other psychiatric disorders such as avoidant personality disorder and panic disorders. We present a case report on 54-year-old identical twin brothers, whose being the victims of bullying in adolescence led to depression and eventually resulted in their becoming recluses in their home for 16 years. This severe isolation perpetuated their already existing social anxiety and depression into their adult years. After starting in similar treatment, their clinical trajectories varied greatly over time, with one of them being able to overcome his anxiety and depression to engage in treatment and achieve some symptomatic relief, while the other twin remains with severe social anxiety symptoms despite intensive therapy and medication management. Despite both of these individuals having the same genetic and neurobiology makeup, living in the same environment through their childhood and adolescence, having been living together all of their lives in the same setting, both abusing alcohol for a period of time to self-medicate, and undergoing similar psychiatric interventions since they left their home, there are several environmental factors, such as length of tobacco and alcohol abuse, severity of

bullying in adolescence, and dependent traits, which remain different between them. This stark difference leads to the question of whether epigenetics of tobacco, alcohol, bullying, or extreme social isolation has changed their neurobiology, so much so that one has responded more to treatment or the other has remained extremely impaired and unable to care for himself. These differences were assessed using basic genomic testing and a battery of psychological testing including projective testing of their personality to help conceptualize these identical twins as individuals in an effort to tailor their current therapeutic milieu.

No. 149

Anxiety Disorders in Neurofibromatosis 2

Poster Presenter: Syed E. Maududi, M.D.

Co-Authors: Chirag Patel, Mohammad Ramay, Asghar Hossain

SUMMARY:

Background: Neurofibromatosis type 2 (NF-2) is a rare genetically inherited autosomal dominant disease with an estimated incidence of 1 in 33,000 people worldwide. The NF-2 gene regulates the production of a protein that functions as a tumor suppressor. NF-2 is characterized by benign tumors of the nerves that transmit balance and sound impulses from the inner ears to the brain (bilateral acoustic neuromas). The characteristic symptoms of NF-2 usually develop around the time of puberty or early adulthood. Psychiatric disorders are more frequent in NF-2 than in the general population, which ranges from dysthymia to depression and mood and anxiety disorders. **Case:** We report the case of a 12-year-old Caucasian boy brought to the outpatient clinic for extreme anxiety, nervousness and depression for the last year. The patient appeared anxious, irritable and nervous and was constantly crying and demanding to go home. He appeared small for his age, with a dysmorphic face. His mother stated that he developed hydrocephalus at age one, along with café au lait spots, and was diagnosed with NF-2 and subsequently placed on a VP shunt. His father was diagnosed with NF-2, and his sister was diagnosed with anxiety disorder. He has also been having depressed mood, low self-esteem, feelings of hopelessness, and sleep of four to six hours. Lab reports were within normal limits.

RI brain scan was within normal limits. The patient was diagnosed with major depression along with anxiety disorder due to another medical condition.

Conclusion: Neurofibromatosis 2 appears to be associated with reduced emotional functioning and psychiatric disorders. The majority of studies have focused on physical health and neurocognitive functioning, whereas the psychiatric disorders associated with this disease remain unclear and undocumented. Some literature has discussed the links between NF-2 and psychiatric disorders, though further research is warranted. This report is based on a clinical case and discusses the relationship between NF-2 and psychiatric disorders, particularly anxiety disorders and depression.

No. 150

Comorbid Narcolepsy and Schizophrenia: Diagnostic and Treatment Implications

Poster Presenter: Simon Chamakalayil

Co-Authors: Natasha Dalseth, Jessica Kovach

SUMMARY:

Narcolepsy is a sleep-wake disorder that causes excessive daytime sleepiness, in some cases cataplexy, poor nighttime sleep, and often hypnagogic and hypnopompic hallucinations. Many symptoms of narcolepsy are easily confused with the symptoms and treatment side effects of schizophrenia. For instance, hypnagogic and hypnopompic hallucinations can be confused with those from schizophrenia, and excessive daytime sleepiness can be confused with neuroleptic side effects or with negative symptoms of schizophrenia. In addition, narcolepsy-related hallucinations may contribute to delusions from schizophrenia. Common treatments for narcolepsy, including modafinil and sodium oxybate, may cause psychiatric side effects. Mr. A., a 26-year-old male diagnosed with schizophrenia at the age of 13 and with a history of multiple inpatient hospitalizations, was transferred to an extended acute inpatient facility after a six-month stay on an acute inpatient psychiatric unit at an outside hospital. Despite a six-month observed trial of Haldol, valproate and lithium, his primary symptoms on presentation included assaultive behavior toward staff and family; auditory and tactile hallucinations, mostly occurring at night; paranoid delusions of being sexually

assaulted each night; and poverty of spontaneous thought and speech. Valproic acid and lithium were discontinued initially due to lack of current or past history of mood symptoms. Due to witnessed “drop attacks,” prominent hypnogogic hallucinations and excessive daytime sleepiness, a diagnosis of narcolepsy was made. Modafinil and venlafaxine were started with improvement in narcolepsy symptoms but resulted in side effects of increased irritability and aggression. Haldol was switched to clozapine, and doses of modafinil and venlafaxine were decreased with subsequent improvement in daytime psychosis and agitation but increase in narcolepsy symptoms. In this poster, we discuss diagnostic considerations as well as treatment side effects relevant to comorbid narcolepsy and schizophrenia.

No. 151

Lack of Shut-Eye and Psychiatric Disorders: A Literature Review

Poster Presenter: Sandhya Chinala

SUMMARY:

Background: Sleep deprivation has long been linked to psychiatric problems and traditionally was viewed as a side effect. However, increasing evidence suggests that sleep deprivation may exacerbate risk for, and even directly contribute to the development of, some psychiatric disorders like depression, anxiety, bipolar disorder, and even psychosis. Recent studies suggest that insufficient sleep increases our sleep debt, and when the sleep debt becomes large enough, noticeable problems appear. Hence, it is important to recognize the toll that sleep deprivation takes on cognitive and mental health. Studies have linked insufficient sleep to everything from decline in cognitive function to weight gain to disruption in the immune system. Increasing evidence suggests that a good night’s sleep helps foster both mental and emotional resilience and that a lack of shuteye can lead to emotional instability and psychological disturbances. Also, the significant overlap between sleep disorders and psychiatric problems suggests both types of problems to have common biological roots. In this literature review, we accentuate the importance of sleep hygiene and discuss the neurobiology of circadian rhythm. We will explore the relationship between sleep

deprivation and some of the psychiatric disorders.

Methods: A literature search was conducted on PubMed and MEDLINE with the search terms “sleep deprivation” and “psychiatric disorders,” and results were reviewed from the past 10 years. **Discussion:** On reviewing the literature, it can be concluded that sleep deprivation and sleep debt can result in a number of psychiatric disorders. Traditionally, physicians treating psychiatric patients viewed insomnia and other sleep disorders as symptoms, but it has been noted in studies that sleep problems may raise risk for, and even directly contribute to, the development of many psychiatric disorders. Also, research suggests that treating a sleep disorder can help alleviate symptoms of a co-occurring mental health problem.

No. 152

Psychosis in a 22-Year-Old Woman With Narcolepsy After Restarting Sodium Oxybate

Poster Presenter: Chelsea Wolf, M.D.

Co-Authors: Patrick Buckley, Pamela Herrington, M.D.

SUMMARY:

Background: Sodium oxybate, the sodium salt of gamma-hydroxybutyric acid (GHB), is a safe and effective treatment for daytime sleepiness and cataplexy in patients with narcolepsy. We present the case of a 22-year-old narcoleptic woman who developed acute psychosis shortly after restarting her previously well-tolerated dose of sodium oxybate following a ten-day hiatus. **Case:** Ms. C. is a 22-year-old woman with no previous psychiatric history who presented to the emergency department accompanied by her parents, who were concerned by their daughter’s recent odd behavior. The patient had a history of debilitating narcolepsy with cataplexy that did not respond adequately to stimulants but had been well controlled on sodium oxybate monotherapy. Ten days prior to her presentation to the emergency department, the patient had temporarily discontinued sodium oxybate for a multiple sleep latency test that confirmed the diagnosis of narcolepsy. At the conclusion of the sleep test, the patient restarted sodium oxybate at her previous therapeutic dose (3.5g twice nightly). Three days after restarting the medication, the patient became increasingly anxious

and irritable, reporting auditory hallucinations and exhibiting bizarre behavior. She was admitted to the inpatient psychiatric unit, where she appeared to be responding to internal stimuli and demonstrated a disorganized thought process; her thought content was significant for paranoia, hyper-religiosity and ideas of reference. An organic workup for psychosis, including an EEG and brain MRI, was unremarkable. Sodium oxybate was held and her psychotic symptoms gradually improved, though she continued to acknowledge some residual delusions one week after her last dose of sodium oxybate. Over the course of an eight-day admission, the patient received three doses of haloperidol and was discharged after returning to her baseline mental status. Following discharge, a re-challenge of this medication with slower titration to her previous dose was well tolerated and did not precipitate any adverse reactions. **Discussion:** This case adds to literature that suggests sodium oxybate can induce acute psychosis at therapeutic doses in patients with narcolepsy. Similar to other cases, our patient's symptoms improved with discontinuation of sodium oxybate and short-term antipsychotic treatment. Interestingly, our patient continued to experience residual delusions up to a full week after discontinuation of sodium oxybate, particularly surprising given the short half-life of sodium oxybate (30–60 minutes) and the rapid symptomatic improvement over the course of two to three days described in other cases. **Conclusion:** This case highlights the importance of resuming sodium oxybate therapy at starting doses and titrating to therapeutic effect even after brief discontinuations in order to avoid psychiatric side effects.

No. 153

Diagnosis and Management of Comorbid Schizophrenia and Narcolepsy

Poster Presenter: Joseph O. Niezer

Co-Author: Seth Judd

SUMMARY:

Mr. T., a 19-year-old African-American male with no past psychiatric history presented to ER with disorganized thinking and behavior as well as paranoid delusions of people spying on him and tapping his phone. He responded well to risperidone and later Invega Sustenna, with resolution of

psychotic symptoms in less than one month. Approximately a year after being followed as an outpatient, the patient began to endorse hypnagogic hallucinations, daytime fatigue with difficulty maintaining sleep at night and sleep paralysis. The patient attributed these symptoms to side effects of antipsychotic medication despite appropriate psychoeducation and referral for polysomnogram. He chose to discontinue medication and withdraw from clinic. The patient ultimately sought out evaluation for daytime fatigue several months later. Polysomnography confirmed diagnosis of narcolepsy. At the time of this diagnosis and having been off antipsychotic therapy for five months, the patient was noted by his neurologist to demonstrate pressured speech, disorganized behavior and paranoia concerning for re-emergence of schizophrenia symptoms. The patient's presentation prompted his neurologist to consult with psychiatrist regarding the most appropriate management of comorbid psychosis and narcolepsy. In this poster, we discuss the diagnostic and treatment challenges associated with narcolepsy and comorbid schizophrenia, including the risks and potential benefits of initiating stimulant medications in this population.

No. 154

Managing Insomnia for Those on Psychotropics and at Risk of Obstructive Sleep Apnea in the Psychiatric Inpatient Setting

Poster Presenter: Kim Hoang

SUMMARY:

Little is known regarding the association between use of psychotropics and poor sleep due to obstructive sleep apnea. On a busy night on call in the psychiatric inpatient setting, psychiatrists are often called for evaluation of insomnia. How often is obstructive sleep apnea (OSA) on the differential? Those with severe obstructive sleep apnea can have periods of non-breathing over 30 times in one hour. Prescribing a benzodiazepine may worsen the outcome for those with OSA. We need to be careful in the hypnotics we use to treat insomnia, especially for those with OSA. Do psychotropics increase the risk for OSA? Antipsychotics are known to increase the risk toward obesity and metabolic syndrome, which is a risk factor for OSA. Lack of sufficient

amounts of rapid eye movement (REM) sleep and deeper levels of sleep make patients more tired during the day. Daytime somnolence and sedation are often attributed to the side effects of psychotropics rather than the effects of obstructive sleep apnea. In this poster, we discuss the effects of psychotropics on contributing to obstructive sleep apnea, early methods of detection, and treatment of OSA in the psychiatric inpatient setting.

No. 155

Usage of Probiotics to Alleviate Affective Symptomatology in a Patient With Autism Spectrum Disorder

Poster Presenter: Mohammed Mazharuddin

Co-Author: Matthew A. Petrilli

SUMMARY:

It has been well established that autism spectrum disorder (ASD) is associated with illnesses of the gastrointestinal tract. A large body of research has also alluded to a correlation between gastrointestinal diseases and psychiatric illness. Mr. V., a 60-year-old white male with a presentation consistent with autism spectrum disorder was admitted to a state psychiatric facility exhibiting an inability to care for self, aggressive behavior and overt delusions regarding anaphylactic reactions. Mr. V. had a longstanding history of multiple psychiatric hospitalizations, mostly due to delusional and paranoid behavior in the context of medication nonadherence. This included complaints of multiple food, drug and environmental allergies, all of which were not verified by an allergist. This resulted in chronic malnutrition due to highly selective eating habits. In addition, he also complained of diffuse somatic complaints along with depressive and anxious symptoms. He was started on an atypical antipsychotic and an antidepressant upon admission. Subsequent antipsychotic trials were attempted, including clozapine, as well as various mood stabilizers and antidepressants, with minimal alleviation of his symptomatology. Consultation with dietary staff resulted in the initiation of *Lactobacillus acidophilus* oral capsules. Within weeks, he was more willing to consume novel foods, he experienced improvement of anxiety and somatic complaints, mood symptoms decreased in severity, and his affect appeared more euthymic. His paranoid

delusions appeared to be less of a focus in his thought content, and his willingness to interact with peers and staff increased. He was subsequently discharged with appropriate outpatient follow-up. Due to the relationship of the gut-brain axis in psychiatric illness, along with its strong correlation to autism, individuals with autism spectrum disorder could benefit from probiotic supplementation to help alleviate symptoms and reduce the need for psychotropic medication that is associated with a constellation of side effects. In this poster, we discuss the importance of gastrointestinal complaints in individuals with ASD with comorbid psychiatric conditions and the usage of probiotics as a possible option to alleviate symptomatology.

No. 156

Clozapine-Induced Constipation: Making the Case for an Algorithm

Poster Presenter: Kammarauche Asuzu, M.H.S.

Co-Authors: Zainab Malik, Stephen Oxley, M.D., Elena Perea, M.D., Chris Kenedi, M.D., M.P.H

SUMMARY:

Background: Clozapine remains the treatment of choice for treatment-resistant schizophrenia, resulting in an additional 30% reduction in psychotic symptoms among patients who had previously failed other antipsychotic trials. Clozapine-induced constipation affects 13 to 60% of patients who are prescribed clozapine. Among patients who develop severe constipation, Palmer et al. showed 27.5% mortality. Physician, patient and medication factors contribute to predisposing to life-threatening constipation from clozapine. **Methods:** This quality improvement (QI) project assessed practices among physicians and nurses regarding prevention and management of clozapine-induced constipation at a single-site psychiatric facility. IRB exemption was granted from the institution. A survey was sent out to physicians and nurses. In addition, a chart review was conducted to review discharge summaries, medication and problem lists of patients administered clozapine while on hospitalization. We reviewed charts of patients admitted between April 2015 and March 2016. **Results:** The survey revealed 47 responses with 66% physicians and 34% nurses. Four out of five physicians report have no guideline to monitor for constipation among patients

prescribed clozapine. Seventeen percent of physicians always document a plan for prevention of constipation in the discharge summary. The frequency that physicians carry out recommended practices to prevent constipation ranged from four to 87%. There were 105 separate admissions included in analysis in which clozapine was administered. Ninety-one of these patients were discharged on clozapine. From the chart review, 34% of patients discharged on clozapine had any documentation regarding the plan for constipation in the discharge summary. **Conclusion:** Without an algorithm to prevent and manage clozapine-induced constipation, recommended practices are underutilized among physicians. Clozapine-induced constipation is relatively benign but can be lethal, especially in the absence of close monitoring. Clozapine is a very effective drug and the only choice for certain patients. Improving its usability and acceptability among our patients through effective monitoring to prevent associated side effects is paramount. This underlies the need for an algorithm that enables health care providers to monitor and prevent constipation among patients prescribed clozapine.

No. 157

Aggression Rate in Acute Inpatient Psychiatric Units: Impact of Substance Abuse and Psychosis

Poster Presenter: Inderpreet S. Virk, M.D.

Co-Authors: Tolulope Olupona, M.D., Adenike Ishola, M.D., Evaristo O. Akerele, M.D., M.P.H.

SUMMARY:

Background: Reduction of aggression rate is a major challenge in acute inpatient psychiatric units and may adversely affect the well-being of both staff and patients. The data suggest that lifetime risk for assault on nurses working on inpatient psychiatric units is approximately 75%. The efficacy of current risk assessment strategies in lowering incidence of violence on acute inpatient psychiatric units is still unclear. **Methods:** This was a retrospective study. Electronic medical records were reviewed for violent and aggressive incidents reported by the staff over a six-month period in acute inpatient adult psychiatric units. Demographic variables such as age, sex, diagnosis, race, history of substance abuse, and violence were included to assess for high-risk factors

associated with aggression. These included patient to patient and patient to staff aggression. **Results:** A total of 73 aggressive incidents were reported, of which 39 (53%) were patient to patient and 16 (20%) patient to staff. The rest primarily involved damage to property and self. The highest risk factors for being involved in an aggressive incident included 1) gender (predominantly male), 2) having a diagnosis of schizoaffective disorder and schizophrenia, and 3) substance use disorder. Approximately 50% of patients involved in aggressive actions had a secondary diagnosis of substance use disorders.

Conclusion: The data suggest that the majority of aggressive behaviors on inpatient units are patient to patient. Second, at least 50% of the individuals involved in these aggressive behaviors have a secondary diagnosis of substance use disorder. There is a need to monitor patients with secondary diagnosis of substance use disorder on inpatient units. It is essential that these patients are proactively trained on how to use coping strategies for conflict resolution.

No. 158

Impact of Length of Stay on Readmission Rates to Psychiatry Inpatient Units

Poster Presenter: Olawale O. Ojo

Co-Authors: Tolulope Olupona, M.D., Evaristo O.

Akerele, M.D., M.P.H., Carol Lim

SUMMARY:

Background: Psychiatric illnesses are often chronic, necessitating frequent and multiple readmissions. Readmissions within a short period after hospitalization usually suggest missed opportunities for the provision of optimal treatment and postdischarge plan. In this literature review, an attempt is made to review existing data on psychiatric inpatient readmission rates and, furthermore, to determine whether or not the data suggest a correlation between the duration of a patient's stay in the hospital and readmission.

Objective: Identify the factors that dictate length of hospital stay in an acute psychiatric unit and other factors that might be responsible for readmission in a psychiatric inpatient unit. **Methods:** A comprehensive review of international and American literature that discuss the relationship between the length of hospital stay and the rate of

readmission was conducted. The following databases were used for the literature search: PsycINFO and PubMed. The authors selected articles from 2005 to the present time. Only studies with controlled groups were included. **Results:** The data suggest that a correlation exists between length of hospital stay and readmission rates. **Conclusion:** It is necessary to ensure that patients are hospitalized for an adequate length of time to minimize the frequency of readmissions. The optimal length of stay depends on the diagnoses and challenges confronting the patient.

No. 159

Physical Exam Is Not Necessary for Routine Psychiatric Admissions

Poster Presenter: Christopher DeLange

SUMMARY:

The utility of routine, annual physical exams in primary care has been questioned for the past several decades. Numerous studies have failed to find any evidence that a routine physical exam improves the health of patients, with some suggesting they actually cause harm due to interventions based upon false positives. It is questionable whether a general physical in the absence of any relevant history has any clinical utility. Physical exam is often, but not always, a requirement of admission to the psychiatric ward of a hospital. Frequently, patients will receive a physical exam from and be “cleared” by an ER physician before psychiatry is consulted for possible admission. We are unaware of any systematic studies demonstrating the utility of a general physical exam for patients admitted to the psychiatric ward, whether or not a prior physical exam has been performed by an ER physician. This study attempted to ascertain whether there is any evidence that a physical exam by the admitting psychiatrist leads to meaningful clinical interventions when a physical exam has already been performed by an ER physician. A secondary aim of this study was to examine instances where an ER physician does not perform a physical exam to determine if a physical exam done solely by the admitting psychiatrist leads to meaningful clinical interventions. Our results do not find evidence in support of routine physical exams for patients

admitted to a psychiatric ward, regardless of whether a physical exam was previously performed by an ER physician.

No. 160

Atypical Antipsychotic Prescribing Patterns for Pediatric Patients Enrolled in West Virginia Medicaid

Poster Presenter: Joseph Hart, M.D.

SUMMARY:

Background: The rate of second-generation antipsychotic (SGA) prescribing for pediatric populations in the United States increased significantly over the past two decades, and the majority of these prescriptions have been used for off-label indications. This pattern of high-frequency non-FDA approved prescribing is concerning, as evidence for off-label efficacy is limited and these drugs have well-known metabolic side effects. In response to these concerns, in August 2015, West Virginia Medicaid implemented a prior authorization program for antipsychotic use in children under 18. **Objective:** Evaluate the impact of the prior authorization program on SGA prescribing patterns and assess any impact of the program on compensatory prescribing. **Methods:** West Virginia Medicaid and CHIP administrative claims were examined from September 2014 to July 2016, a population including over 205,000 members. These data were analyzed for trends before and after the PA program. **Results:** Among WV Medicaid and CHIP users, the percentage of individuals receiving second-generation antipsychotics demonstrated an immediate drop by 18.3%, after accounting for preexisting trends in the data. Unexpectedly, we also observed a small but significant monthly decline in SGA prescriptions that was present even before the prior authorization program took effect; furthermore, the monthly decline was higher during the period afterward. All three observations were significant at $p < 0.0005$. No significant compensatory change was noted in other psychotropics. **Conclusion:** Implementation of an SGA prior authorization program for children under age 18 resulted in a significant decrease in prescribing rate for this class of medication.

Sunday, May 21, 2017

Medical Student/Resident Poster Competition 3

No. 1

Topiramate as Monotherapy or Adjunctive Treatment for PTSD: A Meta-Analysis

Poster Presenter: Archana Varma

Co-Author: Michael Moore

SUMMARY:

Background: Posttraumatic stress disorder (PTSD) is a chronic and debilitating condition with symptoms of avoidance/numbing, hyperarousal and re-experiencing. Topiramate, an anticonvulsant agent, has been studied as a primary and adjunctive treatment for PTSD, yet little is known regarding the efficacy of this treatment approach. The objective of this study was to perform a systematic review and meta-analysis of randomized controlled trials (RCTs) testing the efficacy of topiramate as monotherapy or adjunctive therapy compared to placebo for the treatment of PTSD in adults. **Methods:** A search of published articles was conducted in PubMed, PsycInfo and Cochrane Central databases. An additional study was identified via review of published articles, and its authors were contacted. **Results:** RCTs comparing topiramate as adjuvant therapy or monotherapy to placebo with minimum duration of six weeks were reviewed. Studies used a rating scale of PTSD symptoms at intake and at the end of treatment. Trials with veteran subjects and civilian subjects were included. The overall standard mean difference (SMD) for treatment with topiramate was 0.55 (95% CI [-0.072, 1.181], $p=0.08$). On stratification, topiramate showed a reduction of hyperarousal symptoms with an SMD of 0.35 (95% CI [0.014, 0.693], $p=0.041$). Re-experiencing symptoms showed a trend toward reduction with topiramate, but the results were not statistically significant with an SMD of 0.29 (95% CI [-0.024, 0.598], $p=0.07$). **Conclusion:** Topiramate significantly reduced hyperarousal symptoms of PTSD. Topiramate tended to reduce overall PTSD symptoms and re-experiencing symptoms of PTSD, but these results were not statistically significant. Further studies on topiramate will clarify its role in PTSD treatment.

No. 2

High Patient Satisfaction With Antidepressants Predicts Early Drug Release Date Across Online User-Generated Medical Databases

Poster Presenter: Scott Siskind

SUMMARY:

Studies establishing the use of new antidepressants often rely simply on proving efficacy of a new compound. The advent of large online databases in which patients themselves rate drugs allows for a new big-data-driven approach to evaluate patient satisfaction, with sample sizes exceeding previous studies. We compared patient evaluations of antidepressants on three large databases—WebMD, Drugs.com and AskAPatient—totaling over ten thousand different ratings. We found that the most popular drug in the databases was phenelzine, and the second most popular drug was tranylcypromine, suggesting a strong preference for MAO inhibitors. The third most popular drug was clomipramine, and the sixth was imipramine, showing a high rating for tricyclics as well. The highest-rated SSRI was escitalopram in seventh place. The lowest-rated drugs were newer agents, including vortioxetine and vilazodone. Within the three databases, there were strong negative correlations—-0.48, -0.55 and -0.62, respectively—between patient rating and year of drug approval. We consider several possible confounding factors, including greater psychiatrist familiarity with older medications and differential population of patients receiving these drugs. However, these are unlikely to produce these results; most psychiatrists are more familiar with newer medications, and older medications like MAO inhibitors are usually given to more treatment-resistant patients. The results may represent a genuine preference for these older medications on the part of patients based on their innate pharmacological characteristics. We recommend that prescribers consider becoming more familiar with the advantages of these medications and with their place in depression treatment algorithms.

No. 3

Zonisamide-Induced Psychosis in a Patient With Nonepileptic Seizure: A Case Report

Poster Presenter: Safa A. Alrubaye

SUMMARY:

Background: Zonisamide (1,2-benzisoxazole-3-methanesulfonamide) is an antiepileptic medication that was first approved for clinical use in Japan in 1989 and introduced to the U.S. in 2000. It is used as an adjunctive treatment of partial seizure with or without secondary generalization in adults. Although zonisamide has a good tolerability, several case reports have described zonisamide-induced psychosis. Most of the patients in these reports were on other antiepileptic medications. The onset of psychosis reported was from seven days to 11 months. This case report describes a new psychotic episode that occurred within 24 hours of increasing the dose of zonisamide in a patient with history of nonepileptic seizure who is on zonisamide as a monotherapy. **Case:** A 32-year-old African-American male with a history of PTSD, nonepileptic seizure disorder and essential tremor, all acquired when the patient was deployed to Iraq, presented to the emergency department with acute onset of hallucinations and delusions after the zonisamide was increased from 50mg twice daily to 100mg twice daily. The patient was seen by a neurologist two days prior to this admission, and the dose was increased due to uncontrolled seizure activities. He stated that the hallucinations started the next day. The patient described the visual hallucination as well-formed, vivid images of cats, writings, the devil, and some other creatures (i.e., half bear/half dog). The patient stated that he can touch the cats and can feel if they wet the bed. The patient described auditory hallucinations as mumbling voices of the cats' owners; aliens taking showers at his house; people whispering; and the voices of the cats themselves. He reported a delusion about aliens indwelling his house and delusion of spirits trying to reach him asking for help. Also, he reported worsening tremor and related it to increased anxiety and irritability due to the ongoing hallucinations. The patient had received 2.5mg of Haldol at the emergency department but no change in his hallucination or delusion before he was admitted to neurology service for medication adjustment. Zonisamide was discontinued, and topiramate of 25mg was started. On the second day of admission, the patient reported improved hallucination in regards to frequency and intensity, as well as improvement of delusion and tremor. Longitudinal chart review shows resolution of delusions and

hallucination with no residual psychotic symptoms.

Conclusion: Different forms of hallucinations and delusions were reported with the use of zonisamide. This case indicates, for the first time, that acute psychosis can occur within 24 hours of increasing the dose of zonisamide. A detailed history should be taken, as the case might be mistaken with psychotic disorders. No studies have been conducted to study treatment of zonisamide induced psychosis. However, discontinuing zonisamide improves and treats these psychotic episodes.

No. 4

Bilateral Cataracts in a Young Patient With Bipolar Disorder on Treatment With Risperidone

Poster Presenter: Ekta Patel

SUMMARY:

Patients with mental illness are at an elevated risk for developing cataracts when compared to the general population. There is evidence that first-generation antipsychotics increase the risk of cataracts; however, data about second-generation antipsychotics is limited and consists mainly of case reports involving quetiapine. There is only one case report associating risperidone with cataracts, in addition to one large-scale study comparing the cataractogenic potential of quetiapine versus risperidone. Our goal is to add to the current evidence base by reporting a case of an otherwise healthy young individual who developed cataracts while on risperidone. O. D. is a 27-year-old male with no medical comorbidities who has a diagnosis of ADHD and bipolar disorder. Since age ten, the patient was treated with methylphenidate and valproic acid; however, at the age of 16, he started displaying symptoms of psychosis. After a failed trial of quetiapine 400mg per day for a few months, the patient was put on risperidone 6mg per day. At the same time, valproic acid and methylphenidate were discontinued, and lithium 900mg per day was initiated with good response. The patient first complained of blurry vision at age 26 and saw an optometrist who discovered cataracts in both eyes with 20/40 vision. The patient's last recorded vision was 20/20, documented at age 24. The patient was referred to an ophthalmologist, who diagnosed grade three cataracts of the left eye and trace cataracts of the right eye, indicating bilateral

asymmetrical cataracts. Given ongoing blurry vision, the patient opted for cataract surgery of the left eye. A later eye examination revealed no further changes in the right eye cataract. To our knowledge, this is the second case showing a potential association between cataracts and risperidone. Our patient had a lack of risk factors, including no metabolic abnormalities, a normal baseline eye examination and no prior history of cataracts. Although the patient was exposed to quetiapine and valproic acid, the exposure to those medications was for shorter periods of time. Moreover, the patient had an unremarkable eye examination several years after discontinuing quetiapine and valproic acid. Given that there are no reports indicating a relationship between lithium and cataract formation, we suggest that risperidone has contributed to the patient's cataract formation. In this poster, we will discuss the challenges of potential cataract formation while using second-generation antipsychotics, as well as the importance of ophthalmologic monitoring for early detection and prevention.

No. 5

Reversible Thrombocytopenia After Gabapentin in an HIV-Positive Patient

Poster Presenter: Mohammed Basith, M.D.

SUMMARY:

Background: Gabapentin is FDA approved for treatment of partial seizures with and without secondary generalization, as well as for post-herpetic neuralgia. Given the therapeutic value of other anticonvulsants, such as valproate and carbamazepine, in treating psychiatric diseases, gabapentin has become increasingly studied and used in psychiatric practice to treat anxiety disorders. Limited side effects, few drug interactions, low addictive potential, and lack of monitoring requirements make gabapentin a favorable alternative to other anti-anxiety medications such as benzodiazepines. Thrombocytopenia has not been noted as a side effect of gabapentin; in fact, gabapentin has been used as an alternative to valproate and carbamazepine in treating seizures when patients are at risk of thrombocytopenia. In patients with HIV, thrombocytopenia is well known as a chronic and often asymptomatic clinical finding independent of medication intake. This is a case

report of a 36-year-old man whose HIV was diagnosed during inpatient care and who had reversible thrombocytopenia with gabapentin. **Case:** This patient had a psychiatric history of recurrent major depressive disorder, alcohol use disorder and no known medical history before admission. His platelet count on admission was 88k/mm³. He was not aware of the low platelet count, and no prior laboratory studies were available. He had not previously taken gabapentin. He was started on gabapentin at 300mg per day and venlafaxine at 37.5mg per day, and his platelet count was monitored serially. His other medications included folic acid and thiamine during this period. He was also tested for HIV due to the unexplained low platelet count. The gabapentin was titrated up to 1,200mg per day and was found to be effective for anxiety, but within six days, the patient's platelet count dropped to 61k/mm³, and gabapentin was discontinued while other medications remained the same. His platelets rose to 81k/mm³ within four days of discontinuing gabapentin. During this period, the HIV test result was positive for HIV-1. The patient continued to be anxious, so gabapentin was restarted due to its efficacy and consideration that thrombocytopenia might be related to HIV status. Again, within three days of restarting gabapentin at 900mg per day and with no other changes in medication, the patient's platelet count dropped to 57k/mm³. Gabapentin was discontinued again, and within two days, the platelet count increased back to 81k/mm³. **Conclusion:** The time course and repeated exposure to Gabapentin with reversibly decreased platelets indicate an association between gabapentin and thrombocytopenia in this patient with HIV. This observation suggests caution in treatment with gabapentin for patients with preexisting low platelet counts and suggests a potential for thrombocytopenia from gabapentin.

No. 6

Use of Cariprazine in Psychiatric Disorders: Systematic Review

Poster Presenter: Aarti G. Chhatlani, M.D.

Co-Authors: Madhuri Jakkam Setty, M.D., Syeda Arshiya Farheen, M.D., Rajesh R. Tampi, M.D., M.S.

SUMMARY:

Background: Cariprazine is a novel, atypical

antipsychotic agent with dopamine D2 and D3 partial agonist effects, was recently approved for treating schizophrenia and bipolar mania, and is currently in clinical trial phase 2 for depression in the United States. **Objective:** Systematically review the literature on the efficacy and safety of cariprazine for psychiatric disorders including schizophrenia, bipolar disorders and depression when compared to placebo. **Methods:** We performed a literature search of PubMed, MEDLINE, PsycINFO, and Cochrane Collaboration databases through August 31, 2016, using the following keywords: “cariprazine,” “depression,” “schizophrenia,” and “bipolar disorder.” The search was not restricted by the age of the patients or the language of the study. However, in the final analysis, the studies involving patients that were published in English or had official English translations were included. In addition, we reviewed the bibliographic databases of published articles for additional studies. **Results:** The systematic review of literature identified a total of nine articles that evaluated the use of cariprazine in treatment of psychiatric disorders. There were eight double-blinded randomized controlled trials, and one was analysis of pooled data from phase 2/3 trials. Half of these were phase 2 trials (N=4), and the others phase 3 trials (N=4). Four of these trials evaluated the safety and efficacy of cariprazine in bipolar I depression. One trial investigated its use as an adjunct to antidepressants in major depressive disorder (MDD), and three trials evaluated its use in treatment of acute exacerbation of schizophrenia. Two studies used risperidone or aripiprazole as comparators in addition to placebo. Both low- and high-dose cariprazine were more effective than placebo in the treatment of acute manic or mixed episodes associated with bipolar I disorder and also schizophrenia. As an adjunctive treatment, cariprazine showed efficacy in treatment of MDD as measured by the change in MADRS total score. However, patients were selected based on inadequate antidepressant response, and hence, these results may not be generalizable to all individuals with MDD. The main cause of study discontinuation was mania or akathisia. Side effects noted were similar in all the studies. **Conclusion:** This review indicates that cariprazine demonstrates superior efficacy and good tolerability both at low and high doses when compared to placebo in the

treatment of individuals with psychosis, mania and depression. EPS-related treatment-emergent adverse events, especially akathisia, appear to be greater with cariprazine use than with placebo.

No. 7

Treatment Considerations in the Case of a Pregnant, Aggressive Woman With Psychosis

Poster Presenter: *Claudia J. Chapa, M.D.*

SUMMARY:

Background: Deciding which antipsychotic to choose during pregnancy is always a difficult decision for clinicians, even though there is enough evidence that the benefit of initiating therapy in a psychotic patient outweighs the risks of not giving medication at all; literature has shown that the progression and persistence of psychosis with a poor outcome is the usual course of the diseases if the patient does not receive the appropriate treatment. **Case:** The patient is a 37-year-old African-American female with schizophrenia currently not complaint with medications and with absence of substance use history. In the ER, she was found irritable and aggressive, with paranoid delusions, talking to herself. She was found to be 14 weeks pregnant. She responded poorly to a trial of monotherapy of haloperidol and subsequently lurasidone. The patient improved on haloperidol 10mg twice daily by mouth and clozapine 150mg twice daily by mouth and monthly haloperidol decanoate of 150mg intramuscular injection every four weeks. She was no longer aggressive and compliant with medications, and her psychosis had decreased in intensity. **Discussion:** Typical antipsychotics such as haloperidol have been extensively used and, overall, are traditionally the first line of use for a pregnant woman with florid psychotic symptoms. They are better tolerated and have fewer side effects than atypical antipsychotics, also it should be the first option for a medication-naïve patient, but if pregnancy occurs and the patient has already been on an atypical antipsychotic, it is better to continue the same medication instead of switching to a first-generation antipsychotic. Because of ethical issues, there is no “gold standard” on how to select the least harmful medication, and this is because there are no randomized, placebo-controlled, double-blind, crossover trials. Most of the literature comes

from case reports and not all the variables that may affect the mother/fetus are taken into account (drug use, history of medication compliance, polypharmacy, etc.). In the postpartum period, relapsing is greater three months after parturition, which may lead to termination of pregnancy, obliged C-section and institutionalization of their offspring due to reduced capability to take care of them. It can lead to impaired attachment and neglect, custody loss, and cognitive and behavioral sequelae in the offspring and, in an extreme case, infanticide. So it is important to educate and recommend contraception to a patient with a history of schizophrenia to avoid unwanted pregnancies or, if they want to carry on with the pregnancy, to discuss the options and selections of antipsychotics. The patient should be fully educated that there are no side effect-free options but that compliance with the prescribed medications outweighs its risks.

No. 8

Clozapine-Induced Myocarditis in a Patient With Schizophrenia: A Case Report and Brief Literature Review

Poster Presenter: Fabrizio A. Delgado

SUMMARY:

Case: The patient is a 26-year-old man with alcohol and cannabis use disorders admitted to inpatient psychiatry due to paranoid psychosis with hallucinations and aggression. The patient failed four trials of antipsychotic medications and was started on clozapine. On day 17, the patient had acute-onset chest pain. ECG showed sinus tachycardia and T wave changes. The patient was transferred to medicine due to persistent tachycardia. Labs showed CRP of 1.82, troponin I of 0.297, D-dimer of 2055, and eosinophilia increasing to 38.2%. The patient's chest pain resolved. Cardiac echo showed septal wall motion abnormality with preserved LV function. Clozapine was continued, under close supervision, without subsequent event. **Discussion:** Clozapine has been shown to cause potentially fatal cardiac side effects. CIM occurs in between one in 1,000 and one in 10,000 patients. Incidence ranges from 0.2–3%. Increasing prevalence likely reflects increased awareness among clinicians. Reviews show that 85–90% of cases occur in the first eight weeks of treatment, with 75–80% in the first four weeks.

Incidence peaks between 14 and 21 days. Risk factors include rapid titration, male sex, older age, and obesity. The risk is not dose-dependent. Mortality rates have been reported to be as high as 50%. The most common mechanism involved is a type 1 IgE hypersensitivity reaction. Myocarditis is characterized by eosinophilic infiltration of myocardial tissue. Eosinophilic degranulation leads to myocyte damage. Clinical symptoms include fever, palpitations and flu-like symptoms. Diagnostic features include a troponin level greater than twice the upper limit of normal and/or CRP greater than 50mg/dL. Electrocardiograms generally show nonspecific changes, and laboratory studies are often normal. Acute management involves immediate discontinuation of clozapine and appropriate cardiac management. Ideally, initial titration of clozapine should be completed on an inpatient basis. Cardiac monitoring is recommended during the first four weeks of therapy, including baseline ECG, echocardiogram and troponin I level. If troponin increases past twice the upper limit of normal or CRP is greater than 100 or there is any evidence of cardiac damage, clozapine should be immediately stopped. Re-challenge is generally not indicated. **Conclusion:** In this poster, we discuss a case of clozapine-induced myocarditis, a rare and potentially fatal side effect that occurs after initiation of clozapine. Symptoms include chest pain and tachycardia and commonly occur within four weeks of initiation. Baseline cardiac function should be obtained prior to start of clozapine therapy, Troponin I/CRP should be monitored weekly for the first four weeks. This can potentially lead to early identification of CIM and ultimately aims to decrease the mortality rate associated with it.

No. 9

Painful Truths Reviewed: Interactions Between Opioid Use Disorder Treatments and Psychotropic Medications

Poster Presenter: Nicole C. Rouse

Co-Author: Abdolreza Saadabadi, M.D.

SUMMARY:

Background: Opioid use disorder is often comorbid with mental illness. When patients on opioid detoxification treatments, such as methadone and buprenorphine, are brought into mental health

hospitals for psychiatric emergencies, they often require psychotropic medications. Concerns arise when opioid use disorder treatments and psychiatric medications interact. Understanding these interactions may have implications in patients' safety and efficacy of treatment. **Methods:** A review of English language articles was performed using key search terms, and were evaluated to assess these interactions. **Results:** Methadone and bupropion are metabolites of the cytochrome P450 (CYP) system and are affected by medications that inhibit or induce CYP. Benzodiazepines taken concurrently with methadone or buprenorphine have substantial psychodynamic interactions that result in synergistic central nervous system depression. Clonazepam and diazepam, however, do not have an effect on buprenorphine. Selective serotonin reuptake inhibitors are generally CYP inhibitors and increase methadone levels; fluoxetine has no effect on buprenorphine, but fluvoxamine increases its levels. Antipsychotics are generally CYP 2D6 inhibitors, with first-generation antipsychotics being stronger inhibitors than second-generation; quetiapine increases methadone and may cause withdrawal on its cessation; olanzapine, however, has no effect on methadone. Interactions between buprenorphine and antipsychotics have not been studied. Carbamazepine is a CYP inducer and reduces methadone levels; upon cessation of carbamazepine, there is potential for methadone overdose. Valproic acid has no effect on buprenorphine or methadone. More studies are needed to understand interactions between lithium and methadone or buprenorphine. Tetracyclic antidepressants (TCA) and methadone increase each other and synergistically increase risk of cardiac arrhythmias and of opioid withdrawal upon cessation of the TCA. **Conclusion:** Methadone and buprenorphine are often affected by psychotropic medications that dangerously increase or decrease levels of these opioids. Certain medications in each class, however, may not have a strong enough effect to significantly change levels of these opioids or may affect methadone and buprenorphine differently. It is important to choose medications that are less likely to interact with opioid dependence treatments to prevent opioid toxicity or withdrawal. Few articles have been documented reporting interactions between methadone or buprenorphine and psychotropic

medications. Further investigation on how individual medications within each class of psychotropic medications interact with methadone and buprenorphine is needed to provide safe and efficacious treatment options for patients who are treated with both opioids and psychiatric medications.

No. 10

Nocturnal Enuresis as a Rare Side Effect of Valproic Acid

Poster Presenter: Alexandra Berliner, M.D.

Co-Author: Rashi Aggarwal, M.D.

SUMMARY:

Background: Valproic acid is an anticonvulsive agent that has been frequently used in treatment of bipolar disorder as well as epilepsy. After encountering a patient with history of enuresis while using valproic acid in our clinical practice, we reviewed the literature regarding this side effect to understand the pathophysiology behind the side effect, as well as to understand how frequently this occurs in patients using valproic acid. **Methods:** A literature review was conducted using PubMed, searching for mesh terms like "valproic acid and enuresis" and "valproic acid side effects." **Results:** We found several case reports and case series on this topic. One case report discussed a pediatric patient with full bladder control since the age of four who was diagnosed with bipolar disorder type I and was started on valproic acid 250mg per day and after two weeks was increased to 750mg per day. At the increased dose, the patient began bedwetting, and as the dose was titrated to 500mg twice daily, the patient developed diurnal and nocturnal enuresis every day, with some urinary incontinence. Due to this side effect, the patient's dose was reduced to 500mg per day, which resulted in the disappearance of bedwetting. A prospective study in 2015, demonstrated that 17 of 72 children participating in the study developed secondary enuresis after beginning treatment with valproic acid. It also reported that enuresis completely resolved in 16 out of 17; with 10 of these children, it resolved spontaneously while continuing the medication, and in six children, enuresis abated after discontinuing the medication. On average, the side effect appeared 20 days after initiating treatment. The

average time for the spontaneous resolution of enuresis was 150 days in those who were continued on the treatment, and enuresis resolved on average seven days after the discontinuation of treatment. **Discussion:** Several of the case reports reviewed implicate valproic acid as the cause of secondary nocturnal enuresis. It is worthy to note that all of the case reports reviewed focused on children developing the side effects. It is unknown if the side effect only occurs in children or if the adult population has not been as open about disclosing this information. The exact pathophysiology of valproic acid-induced enuresis remains unknown. It is postulated that sodium valproate has a direct effect on the thirst center, resulting in polydipsia, or it may be a consequence of increased depth of sleep. Deeper sleep may inhibit the ability to wake up as a response to a full bladder. Nocturnal enuresis appears to be an underreported side effect of valproic acid. The latest study also highlighted that only the parents of three children volunteered to report the development of the side effect to the providers. The researchers had to specifically inquire about the development of this particular side effect to get the data that they collected. Therefore, it is important for psychiatrists, especially child psychiatrists, to recognize this side effect.

No. 11

Extrapyramidal Symptoms With Lurasidone Use

Poster Presenter: Caroline C. Clark, M.D.

Co-Author: Megan Ehret, M.S.

SUMMARY:

Background: With its unique mechanism of action and safety profile, lurasidone has become a treatment option strongly favored for patients at higher risk for extrapyramidal symptoms (EPS) in many clinical settings. Despite the high binding affinity as a full antagonist of D2 ($\chi=1.68$), in-vivo studies have observed fewer central nervous system depressive effects, EPS and anticholinergic effects than other typical and even other atypical antipsychotics. **Case:** We are reporting a case of EPS in a patient stabilized on lurasidone. The patient is a 30-year-old Caucasian female with bipolar and PTSD who developed a significant EPS including a shuffling gait described by one provider akin to the "Thorazine shuffle." The patient had, prior to this

spontaneous onset of side effects, been stabilized for 11 months on 80mg of lurasidone. The patient was tapered from lurasidone to discontinuation and started on propranolol and benztropine to mitigate side effects; over the course of treatment, symptoms of EPS improved, yet gait abnormalities have mildly persisted at this time. **Discussion:** To our knowledge, this is the first case report of EPS related to the use of lurasidone. The decreased risk of EPS has been thought to be related to the medication's receptor saturation point, which is fully below the threshold for EPS. This case supports the evidence that EPS continues to be a concern despite these studies.

No. 12

Dexmedetomidine Withdrawal Syndrome After Prolonged Infusion in the Intensive Care Unit: Case Report and Literature Review

Poster Presenter: Adeyemi Marcus, M.D.

Co-Authors: Adefolake Akinsanya, M.D., Katy A. Lalone

SUMMARY:

Background: Dexmedetomidine, a central α_2 adrenoreceptor agonist, was approved by the FDA in 1999 for sedation and anesthesia in the intensive care setting. However, use of continuous infusion was not recommended by the FDA beyond 24 hours due to risks of tolerance and subsequent withdrawal phenomena on abrupt discontinuation, including nausea, vomiting, hypertension, tachycardia, and agitation. In our intensive care units (ICUs), dexmedetomidine is used well beyond the recommended 24 hours, and it remains unclear how to appropriately monitor for and recognize this rare but significant phenomenon following dexmedetomidine use. **Methods:** We present a case of a 32-year-old male admitted with a gunshot wound to the abdomen whose ICU course was complicated by severe agitation and delirium, requiring prolonged use of dexmedetomidine, who later developed severe symptoms of dexmedetomidine withdrawal syndrome (DWS) after its discontinuation on the 16th day of use. We then reviewed the literature to better understand the pharmacology of dexmedetomidine and the estimated prevalence of DWS and consider how to best monitor for DWS in the ICU setting. **Results:** Our patient developed severe confusion, agitation,

tachycardia, hypertension, and emesis after discontinuation of dexmedetomidine. These symptoms resolved with resumption of dexmedetomidine, which was then gradually tapered off and transitioned to clonidine over an eight-day period. The pharmacokinetics of dexmedetomidine make it appealing in the ICU setting, but also increases the propensity for withdrawal to occur due to short half-life and fast onset of action. Initial clinical trials documented the prevalence of DWS in eight percent of patients following seven-day exposure to dexmedetomidine, which became evident by 24 to 48 hours after discontinuation. Kukoyi et al. in 2013 reported two cases of dexmedetomidine withdrawal in adults with symptoms similar to those seen in our patient.

Conclusion: While there are more reported cases of DWS in the pediatric population, to our knowledge, there are only two previously reported cases of DWS in adults outside of the clinical trial setting. Given its similar mechanism of action, clonidine, which has a longer half-life, may serve as a potential treatment of DWS and appeared effective in treating our patient. As dexmedetomidine is frequently used beyond the recommended 24-hour period, further research is clearly needed to better estimate the true prevalence of DWS and enhance awareness so it can be adequately treated.

No. 13

Risperidone Consta and Its Role in Reducing Relapse Rate and Health Care Costs

Poster Presenter: Hardeep Jaspal

Co-Authors: Prathyusha Bande, Rohan J. Singh

SUMMARY:

Background: Schizophrenia is a chronic psychiatric disorder that results in social and occupational impairments. This illness results in a profound economic and social burden on a patient's family and friends. The World Health Organization ranks schizophrenia as one of the top 10 illnesses that contribute to global disease burden and consider it to be among the most disabling and economically catastrophic medical disorders. **Case:** H. S., a 31-year-old African-American male with multiple psychiatric inpatient hospitalizations (a total of 15, with the last one 12 months prior) and medication nonadherence, presented on his own to the

emergency department for worsening command auditory hallucinations. Prior to this admission, the patient was stable on risperidone Consta 37.5mg intramuscularly every two weeks for nine months. The patient was diagnosed with schizophrenia undifferentiated type at the age of 17. During his first hospitalization, the patient was started on an oral antipsychotic with good response and was discharged after a week and a half. The patient remained noncompliant for many years on oral medications and was admitted multiple times for the management of acute psychotic symptoms. During 14 years of illness, the patient was admitted 15 times in New York, always due to noncompliance. Since the patient was diagnosed as having schizophrenia, the longest period where he remained stable was 12 months, after being on a long-acting injectable (LAI). **Results:** One of the LAIs that has been shown to be responsible for increasing the length of remission is long-acting risperidone. It has the advantages of not only improving patient compliance, but also decreases the chances of experiencing adverse effects, such as EPS, which lead to further reductions in the use of health care resources and costs, in addition to the increased patient compliance. Results from a multicenter, Canadian retrospective study reported that following a switch to long-acting risperidone, 92% fewer patients (4.3%) were hospitalized after initiation compared with prior (50.7%, $p < 0.0001$). Furthermore, the total duration of hospitalization days decreased by 99% ($p < 0.0001$), and anticholinergic and anxiolytic use fell by 22% ($p = 0.0719$) and 38% ($p = 0.0252$), respectively. Of note, preliminary data from a Swedish multicenter study in 92 patients have demonstrated that, for patients treated with long-acting risperidone, the total number of hospitalizations was reduced by 38% ($p = 0.0004$) compared with the same observational period when treated with their previous antipsychotic therapy. Using an empirical economic model based on the Swedish costs, the mean annual cost savings can be calculated per patient following a switch to long-acting risperidone within the recommended dose range.

No. 14

Aripiprazole Augmentation of Antidepressant for the Treatment of Nonpsychotic Depression: A

Meta-Analysis

Poster Presenter: Riddhi Kothari

Co-Author: Brittney Boykin, M.D.

SUMMARY:

Background: Approximately 50–60% of depressed patients do not respond to antidepressant monotherapy. Clinical experience shows that the use of aripiprazole as an adjunctive agent is common practice. **Objective:** Perform a systematic review and meta-analysis of published randomized controlled trials (RCTs) evaluating the efficacy of aripiprazole as an adjunctive treatment in the reduction of depressive symptoms in individuals with major depressive disorder who are nonresponsive to antidepressant monotherapy. **Methods:** Trial registers and PubMed and PsychInfo databases were searched. Bibliographies of relevant articles were cross-referenced. Studies included were RCTs comparing antidepressant monotherapy and placebo with antidepressant and adjunctive aripiprazole. Participants were over the age of 18 and had a diagnosis of nonpsychotic depression. Studies also had to be at least four weeks in duration. Eligibility assessment was performed independently, and any discrepancies were resolved by consensus. Of the 81 studies identified, six met eligibility criteria. Data were independently abstracted by multiple observers. Data were assessed for quality and risk of bias. **Results:** Initially, six studies (N=1,940) were included in the qualitative data analysis, which showed a medium effect size (SMD=0.41, 95% CI [0.23, 0.60], $p=0.00$); however, significant heterogeneity ($I^2=76.6\%$, $p=0.00$) was noted. One study was removed due to having a small sample size and a shortened duration of intervention phase due to a high dropout rate. Removal of this study led to resolution of heterogeneity ($I^2=0\%$, $p=0.49$) and demonstrated a similarly small, but significant improvement in depressive symptoms compared to placebo (SMD=0.34, 95% CI [0.26, 0.43], $p=0.00$). **Conclusion:** Aripiprazole augmentation of an antidepressant shows minimal reduction in depressive symptoms, so a risk versus benefit analysis must be performed before considering aripiprazole as an adjunctive agent.

No. 15

Sertraline-Induced Acute Oculogyric Crisis With

Opisthotonus

Poster Presenter: Robert Rymowicz

Co-Authors: Najeeb Hussain, M.D., Jonathan Lim

SUMMARY:

A 25-year-old treatment-naïve Hispanic male suffered an acute oculogyric crisis with opisthotonus within minutes of being administered 100mg of sertraline. The patient was admitted to the inpatient psychiatric unit after being brought to the emergency department by his mother for endorsing homicidal and suicidal ideations related to a traumatic incident in which he was severely injured and a family member was murdered. The patient was provisionally diagnosed with major depressive disorder according to *DSM-5* criteria, and the decision was made to start him on sertraline, a selective serotonin reuptake inhibitor (SSRI). Within ten minutes of oral administration, the patient began to complain of an inexplicable urge to flex his right arm and extend his neck. The patient began to complain of pain and discomfort. He arched his back, and his eyes deviated upward. He was notably distressed, but remained able to speak throughout the episode. Physical examination revealed that his arm and neck muscles were extremely tight. Immediate treatment with intramuscular lorazepam 2mg led to complete resolution of the patient's symptoms within five minutes. Antidepressants rarely cause extrapyramidal symptoms (EPS), of which akathisia is the most commonly reported, with fluoxetine and paroxetine responsible for most reported events. Dystonic reactions are less common. Most are attributable to duloxetine, but sertraline is responsible for more than bupropion. The mechanism by which SSRI medications induce EPS is not clear, although it is believed that serotonin reuptake inhibition may have inhibitory effects on dopaminergic neurons. Unlike many other SSRIs, sertraline is also a dopamine reuptake inhibitor, which may contribute to its therapeutic effectiveness, yet also somehow make it more likely to cause dystonic reactions. Pharmacogenomic factors may well play a role in predisposing individuals to dystonic reactions and may account for why young men are reportedly at greatest risk of developing dystonic reactions and why these reactions are not dose-related and can occur with both short- and long-term use. To our knowledge,

this is the first report of sertraline-related dystonia following a single dose. Sertraline is the most commonly prescribed antidepressant in the United States and the second most common psychiatric medication, behind only alprazolam. It is widely considered to be safe, and very few cases of EPS have been attributed to sertraline monotherapy.

No. 16

Autoimmune Thyroiditis Exacerbation Secondary to Lithium Therapy for Bipolar Depression in an Adolescent Patient: A Case Study and Review

Poster Presenter: John A. Pesavento, M.D.

Co-Author: Venkata B. Kolli

SUMMARY:

Objective: Discuss thyroid abnormalities, especially autoimmune thyroiditis, associated with lithium therapy in the pediatric population and review the most recent guidelines for monitoring thyroid laboratory studies in pediatric patients prescribed lithium. **Methods:** Using a case report of a 14-year-old female who developed autoimmune thyroiditis secondary to lithium therapy for treatment-resistant bipolar depression, we will appraise current literature on lithium and its relationship with autoimmune thyroiditis. We will discuss the common presentations of autoimmune thyroiditis and thyroid laboratory monitoring in pediatric patients who are taking lithium. **Results:** We report the case of a 14-year-old female with a history of bipolar I disorder and hypothyroidism. She was admitted to psychiatric residential treatment facility level of care due to symptoms of treatment-resistant depression and chronic suicidal ideation. Her symptoms improved initially with the addition of lithium. Twelve weeks into lithium therapy, she developed blurry vision, diarrhea, psychomotor retardation, and worsening depression. Laboratory studies showed an elevated thyroid-stimulating hormone, white blood cell count and absolute neutrophil count. Uveitis, worsening depression and worsening hypothyroidism raised a suspicion for autoimmune thyroiditis. Laboratory testing revealed both an elevated thyroglobulin antibody count of 174IU/ml and an elevated thyroid peroxidase level of over 1,300IU/ml. **Conclusion:** Despite lithium's benefits, vigilance is needed due to its narrow therapeutic index and side effects. Autoimmune

thyroiditis is a serious illness that presents as hypothyroidism, hyperthyroidism or goiters. The role of thyroid autoimmunity in lithium-induced thyroid disorders is unclear. Several studies have looked at the possibility of lithium inducing increased levels of thyroid antibodies with mixed results. There are very few studies or case reports that include pediatric patients in their review. This case report demonstrates the need for heightened monitoring of patients who are prescribed lithium for symptoms of thyroid abnormalities and shows the importance of adherence to thyroid laboratory guidelines in patients prescribed lithium therapy.

No. 17

Antidopaminergic Agents and Fibroids: A Literature Review

Poster Presenter: Kerry A. Sheehan

Co-Authors: Jilyan Decker, Ritesh Amin, M.D.,

Douglas J. Opler, M.D.

SUMMARY:

Background: Leiomyoma is a benign smooth muscle tumor and the most common neoplasm of the pelvis. Colloquially known as fibroids, these tumors can lead to significant morbidity in reproductive-aged women, causing symptoms that range from bleeding and pain to infertility and childbirth complications. The exact pathogenesis of fibroids remains unknown, though some progress has been made in determining tumor mitogens and nonsurgical treatments. Prolactin, among other hormones, has been implicated as a mitogen growth factor in leiomyoma. The production and release of prolactin from the pituitary gland is inhibited by dopamine. Antipsychotics exert their effect through dopamine antagonism. In lowering dopamine levels and thereby removing the inhibition of prolactin secretion, patients on antipsychotic medications can have increased serum prolactin levels. Given this relationship, it stands to reason that antipsychotics may have a deleterious effect on myometrial smooth muscle cells. **Methods:** Literature review. **Results:** To date, no studies have been published on the prevalence of fibroids in women receiving antipsychotic medications. However, some research has been done on the relationship between prolactin and fibroids. A recent integrated data analysis has shown that prolactin is one of the most expressed

and most highly signaled hormones in fibroids. Though the relationship has not been confirmed, additional small studies have shown a relationship between hyperprolactinemia and uterine leiomyoma. Another small study showed the inhibition of smooth muscle growth in cells treated with anti-prolactin antibody. Dopamine agonists such as cabergoline have been shown to shrink fibroids in premenopausal women. It is hypothesized that these agents successfully reduce leiomyoma through prolactin inhibition. **Conclusion:** We are concerned that the administration of antipsychotic medications to reproductive-aged women can worsen preexisting fibroids or even cause new fibroids to develop. A literature review of the current research on antipsychotics and leiomyoma shows that our understanding of the pathogenesis of these smooth muscle tumors is still nascent. More research must be done not only on the exact mechanism of tumorigenesis of fibroids, but on the prevalence of fibroids in women taking antipsychotic medications. Given the unknown risks of antipsychotic administration in women with a history of leiomyoma, it may be prudent to consider prolactin-sparing antipsychotics in these patients in lieu of prolactin-inducing antipsychotics when possible.

No. 18

Olanzapine-Induced Peripheral Edema Following Treatment in a Patient With Bipolar Disorder: A Case Report

Poster Presenter: Ahsan Khalid

Co-Author: Melissa Martinez

SUMMARY:

Bipolar disorder is a complicated illness that can be challenging to manage despite multiple treatment options, especially in a patient with multiple comorbidities. We present a case of a 43-year-old female patient who was treated with olanzapine after several failed attempts with traditional mood stabilizers and atypical antipsychotics. Although she improved substantially with olanzapine and fluoxetine, the patient developed peripheral edema two weeks after initiation of treatment. Her primary care provider increased her diuretic, hydrochlorothiazide, to manage the edema, but this was ineffective. Olanzapine was decreased to

minimize side effect burden, but her mood destabilized, prompting return to higher dosage. Four weeks after treatment, the patient had gained 21 pounds secondary to the edema. Previous case reports indicated that furosemide was helpful with antipsychotic-induced edema, and this information was shared with the patient's primary care providers. They were hesitant to use this medication due to the patient's history of hyponatremia, but agreed to a trial if alternative mood stabilizers were not options. Although, the incidence of edema is rare in patients treated with antipsychotics (two to three percent), it is important to manage these patients using available evidence while collaborating with other care providers to maximize long-term medication tolerability and benefit.

No. 19

Intoxication and Withdrawal From the GABA-Analogue Phenibut

Poster Presenter: Yash Joshi, M.D., Ph.D.

SUMMARY:

Phenibut (4-amino-3-phenyl-butyric acid) is a nootropic agent that is available through online vendors as a supplement intended to enhance cognitive functioning. Phenibut is an analogue of gamma-aminobutyric acid (GABA), chemically similar to gabapentin and baclofen, and thought to exert sedative/anxiolytic effects primarily through action at the GABA-B receptor. Typical dosing varies, but 250mg–1,000mg per day has been cited by commercial distributors of phenibut to be an effective dose for nootropic action. In this poster, we describe the case of Mr. F., a 32-year-old male without significant past psychiatric history brought to the emergency department after endorsing a dissociative state with an "out-of-body" sensation, found inside a running car with a hose connecting the exhaust pipe to the inside cabin. The patient had not slept for four days prior to admission and had been taking 8–10g of phenibut daily, bought online and self-titrated up over a number of months, with a recent increase to 16g per day in the week prior to admission. On admission in the ED, he was noted to be tachycardic (140s), but otherwise with unremarkable vital signs. His mental status was notable only for an illogical and somewhat tangential thought process at the time of ED consultation. He

was admitted to the inpatient psychiatric unit within 24 hours of presentation. Admission vital signs, physical exam and laboratory studies were unremarkable. On the first day of admission (hospital day one; HD1), he was linear and able to sleep for over seven hours. However, on the evening of HD2, he developed agitation, requiring multiple emergent IM injections for safety. He developed insomnia, increasing disorganization, disorientation, delusions, and visual hallucinations. Benzodiazepines worsened his mental status, and limited effect was found with antipsychotic administration. We initiated baclofen starting at 10mg three times a day and titrating up to 30mg three times a day, which was effective in reducing disorientation and mitigating insomnia, disorganization, visual hallucinations, and delusions. By HD6, the patient was able to achieve a normal sleep pattern, and by HD9, he was fully linear and oriented, no longer endorsing hallucinations or delusions. He was discharged on an extended taper of baclofen to prevent relapse of phenibut withdrawal. Our case highlights the effects of phenibut intoxication and a protracted withdrawal, which has been described only by a handful of reports in the English medical literature. In this poster, we discuss the pharmacology of phenibut and the challenges that accompanied the management of this case. Psychiatrists, emergency room clinicians and other health professionals should recognize the adverse effects of phenibut. More broadly, this case illustrates the imperative to better regulate nootropics available for online purchase for public safety.

No. 20
Childhood Trauma and Prescribed Psychotropic Medication Among Outpatients With Schizophrenia: A Cross-Sectional Study

Poster Presenter: Chong Ki Kim

Lead Author: Chong Ki Kim

Co-Authors: Nak Young Kim, Jin Park, Yong Chon Park, M.D., Ph.D.

SUMMARY:

Background: Experience of early childhood abuse elevates risk of developing schizophrenia in later periods of life and increases psychiatric comorbidity and severity and complexity of symptoms in this

population. In this context, we hypothesized that the pattern of prescribed psychotropic medication would reflect this; those with childhood trauma will receive more types and higher doses of their medication. **Methods:** From our database of 102 outpatients diagnosed with *DSM-IV* schizophrenia, we analyzed experiences of childhood trauma measured by the Childhood Trauma Questionnaire–Short Form and types and dose of prescribed psychotropic medication. **Results:** We found significant positive correlations between child sexual abuse and number of psychotropic medications ($p=0.029$) and also between child emotional neglect and number of psychotropic medications other than antipsychotics ($p=0.045$). **Conclusion:** This preliminary study suggests the pattern of psychotropic prescription may be affected by types of childhood trauma. Further studies will have to shed light on mediating factors such as symptoms or comorbid conditions that lead to prescription of a certain psychotropic class.

No. 21

Lithium-Induced Rhabdomyolysis: A Case Report

Poster Presenter: Gloria Osuruaka, M.D.

Co-Author: Sarah A. Kleinfeld, M.D.

SUMMARY:

Case: Mr. H. is a 40-year-old man with a medical history of HIV (on HAART, last documented CD4 count 505 cells/mm³) and a psychiatric history of major depressive disorder and posttraumatic stress disorder (PTSD) who presented to the emergency department with a chief complaint of “not feeling right” in the context of fevers and bilateral anterior thigh pain for five days. He also noted darker than normal urine. On review of systems, Mr. H. denied weight loss, night sweats, new rashes, trauma, or participation in any different exercise or outdoor activities. He engages in daily exercise but stopped at the time of symptom onset. His last travel was to San Francisco in March of 2016, with no recent international travel. New medications included the addition of lamotrigine and lithium two weeks ago by an outside psychiatrist (reportedly for treatment of depression and PTSD). Other home medications included atazanavir, ritonavir and emtricitabine/tenofovir, all for treatment of HIV. Initial laboratory results revealed creatine

phosphokinase (CPK) 10,687 U/L, ALT 151 units/L and AST 347 units/L. Urinalysis was positive for blood and negative for red blood cells. Creatinine, complete blood cell count and urine toxicology were normal. Lithium level was 0.15mmol/L. Mr. H.'s labs and clinical presentation were consistent with a diagnosis of rhabdomyolysis, and he was admitted to the medical unit for treatment and additional workup. His primary team stopped lithium and lamotrigine due to concern that they were inciting factors for rhabdomyolysis. Workup for other etiologies was ultimately negative. Psychiatry was consulted for alternate medication recommendations. No history of mania or hypomania was elicited that would suggest an underlying diagnosis of bipolar I or II disorder, and the indication for the patient's current medication regimen was unclear. The patient's symptoms improved; at the time of discharge several days later, his CPK had trended down to 3,767 U/L and was normal at one week follow-up. In addition to evaluation by psychiatry and infectious disease, he was seen by hepatology for his transaminitis, which was thought to be secondary to medication-induced rhabdomyolysis. They agreed with the recommendation to stop lithium and lamotrigine. Given that the patient reported his depressive and PTSD symptoms were stable, no new psychiatric medications were started, and he was instructed to follow up in the outpatient clinic once his lab work had normalized to pursue alternate pharmacological treatment. **Discussion:** This case was interesting because there is a broad differential for causes of rhabdomyolysis. Although uncommon, lithium (and in rare instances lamotrigine), has been associated with rhabdomyolysis. Given that no other cause could be identified, it is likely that this was the inciting factor. Our poster will explore the frequency, treatment and mechanism of lithium-induced rhabdomyolysis.

No. 22

Treatment of Catatonic Schizophrenia and Psychogenic Polydipsia With Clozapine: A Case Report

Poster Presenter: Inderpreet S. Virk, M.D.

Co-Authors: Sidiki Dabo, M.D., Christianah Y.

Ogunlesi, M.D., Moddy Kiluva, M.D.

SUMMARY:

Psychogenic polydipsia is a common problem in patients with chronic schizophrenia with prevalence rates varying from 5–10%. No definitive treatment guidelines exist for pharmacological treatment of psychogenic polydipsia. There have been conflicting reports on antipsychotics causing and being used for treatment of polydipsia. We report a unique case of a 53-year-old patient presenting with schizophrenia with catatonic features and psychogenic polydipsia treated with clozapine. The patient was brought in from the residential facility to the emergency department due to his inability to care for self and exhibiting odd and bizarre behavior. Residential staff reported that he has been noncompliant with his medications for more than a month and slowly decompensating. He was transferred to the inpatient psychiatric unit for medication management and further observation. On initial evaluation, patient was found to be in a state of stupor, mute, apathetic, aloof, and listless. He actively maintained the same posture against gravity for a long duration of time. On the unit, the patient was observed to be uncontrollably drinking excessive amounts of water, and after extensive workup including unremarkable head computerized axial tomography (CAT) scan, the patient was diagnosed with psychogenic polydipsia. He was put on water restriction 1L per day and observation every 15 minutes for verbal redirection in order to prevent water intoxication and hyponatremia. His sodium levels varied in the range of 128–131mmol/l. The patient's symptoms were refractory to treatment with Ativan and other antipsychotics. After switching to clozapine, dramatic improvement was seen not only in the polydipsia and correction of hyponatremia but also in catatonic behavior within a few weeks. Clozapine may be a possible alternative option for patients presenting with catatonia and psychogenic polydipsia, especially in settings where there is no availability for electroconvulsive therapy (ECT).

No. 23

Ketamine-Induced Psychotic Symptoms: A Case Report

Poster Presenter: Shahana Ayub, M.D.

SUMMARY:

Several lines of evidence suggest that ketamine and

N-methyl-D-aspartate (NMDA) glutamate receptor antagonists are reported to induce schizophrenia-like symptoms in humans, including cognitive impairments. Ketamine produced focal increases in metabolic activity in the prefrontal cortex and an acute psychotic state. These actions are mediated via multiple receptor subtypes, including opioid, NMDA, α -amino-3-hydroxy-5-methyl-4-isoxazole propionate, kainate, and γ -aminobutyric acid A receptors. Ketamine also inhibits serotonin and dopamine reuptake and inhibits voltage-gated Na⁺ and K⁺ channels. With action at such a wide range of receptors, it could be perceived that ketamine has potential in a diverse spectrum of conditions. This, however, is likely at the possible cost of diverse side effects. In this case report, we describe the patient who developed psychosis following administration of ketamine.

No. 24

Baclofen-Induced Withdrawal Delirium: A Case Report

Poster Presenter: Saeed Ahmed, M.D.

Co-Author: Guitelle St. Victor, M.D.

SUMMARY:

A 46-year-old female with a past medical history of intracranial hemorrhage, hypertension, depression, anxiety, and alcohol and prescription opiate dependence presented to the medical emergency department for disorganized behavior and hallucinations. On initial evaluation, the patient was markedly disoriented, cursing at imaginary people and making bizarre hand gestures. She was claiming she saw her mother-in-law behind the nursing station, her incarcerated husband having an affair with a hospital nurse and people trying to have sex with her. The patient was admitted to medicine for altered mental status. A psychiatry consult was called for an evaluation of agitation and disorganized behavior. On hospital day 3, the patient recalled using baclofen for back pain and abusing her prescription until three days ago. Considering baclofen is an analog of the gamma-aminobutyric acid neurotransmitter (GABA) and abrupt withdrawal can present with disorientation, agitation, confusion, insomnia, anxiety, delusions, and perceptual disturbances, it is important to be aware that routine toxicology screen does not

include baclofen. Baclofen withdrawal should be considered in the differential diagnosis of a confused patient with autonomic instability if culprits such as NMS, alcohol and benzodiazepine withdrawal are ruled out.

No. 25

Gabapentin Abuse by Nasal Insufflation: A Case Report

Poster Presenter: Zain Khalid, M.D.

Co-Author: Lilian Aldana-Bernier

SUMMARY:

Since its approval in 1993 by the FDA as an antiepileptic agent, gabapentin has variously been dubbed the “snake oil of the twentieth century” and a “pharmacotherapeutic panacea.” More recently, however, concerns about its abuse potential have gained increasing prominence. We report the case of a 51-year-old man with a history of substance-induced mood disorder and opioid, nicotine, cocaine (in remission), and alcohol use disorders who presented to the emergency department following attempted self-harm by overdose on ten gabapentin 300mg capsules. He reported having fallen asleep after the overdose and calling EMS himself when he woke up several hours later. He also reported drinking 48 hours prior to admission. He was vitally stable and fully oriented, though irritable, and easily agitated. His renal function panel, complete blood count and liver function panel were normal. His urine drug screen, aspirin, ethanol, and acetaminophen levels were negative. His electrocardiogram was normal, including a normal QTc interval. Poison control was notified, and supportive care was rendered. Following medical stabilization, he was admitted to the psychiatric unit for further care. His home medication regimen consisted of bupropion 150mg two times a day, divalproex 1,000mg nightly, trazodone 100mg nightly, and gabapentin 300mg three times a day. Review of his recent gabapentin use was concerning for potential abuse. He was noted to have run out early several times and had been requesting the medication from different providers on varied pretexts. One provider had stopped prescribing gabapentin because of suspected misuse. Pain and anxiety had been the usual clinical indications for prescription. On confrontation, he revealed that he

had been abusing gabapentin mainly via nasal insufflation for at least nine months, a route he expressed a particular penchant for since his cocaine-snorting days, snorting intermittently Suboxone and heroine as well before he began snorting gabapentin. He also endorsed frequent alcohol abuse and nicotine dependence. He reported crushing and insufflating nasally three to four 300mg tablets at two-hour intervals during “binges.” He described the “high” that followed as characterized by increased focus, energy and sociability, likening it to prior experiences with cocaine. Discontinuation or reduction in use resulted in a withdrawal state that included nausea, diarrhea, increased anxiety, and dysphoria. He denied snorting bupropion, divalproex or trazodone. He was offered but refused rehabilitation for substance use. This report adds to the growing literature on gabapentin’s abuse liability. In this poster, we discuss the clinical implications of gabapentin’s abuse potential and the need for greater vigilance among providers in identifying and monitoring at-risk patients, such as those with a prior history of substance abuse.

No. 26

Challenge of Monitoring Clozapine Levels in Smokers Who Undergo Inpatient Hospitalization

Poster Presenter: Adnan M. Durrani, M.D.

Co-Author: Carolina Retamero, M.D.

SUMMARY:

Background: Clozapine is an atypical antipsychotic that is metabolized to a great extent by the cytochrome P450 enzyme CYP1A2. Cigarette smoke, a potential inducer of hepatic CYP1A2 enzyme activity, results in significantly lowered serum clozapine concentrations in smokers when compared to nonsmokers. It is well documented in literature that for a given dose, smokers may have about 40 to 50% lower serum levels of clozapine when compared to nonsmokers. This is of particular significance in light of recent smoking bans in inpatient psychiatric units, which mandates closer drug monitoring and, essentially, monitoring serum levels on discharge as well. **Case:** We present the case of a 56-year-old African-American male with a diagnosis of chronic paranoid schizophrenia who presented with disorganized behaviors and what appeared to be decompensation of his illness. He

had been on treatment with clozapine for a few years; hence, we restarted him on low dose of clozapine and gradually titrated it upward. We stopped at 400mg per day, at which dose his serum clozapine level was 565 and norclozapine level was 187. The patient was a heavy smoker, smoking about a half to a full pack of cigarettes per day prior to admission. While inpatient, he was off of smoking due to restrictions on the unit, but planned to resume on discharge. The patient tolerated the clozapine titration well and was discharged on a dose of 400mg per day. **Methods:** We performed a retrospective review of the patient’s chart and noted his serum clozapine level. We aim to follow his serum clozapine levels shortly after discharge from inpatient as well. In addition, a PubMed search was conducted using the keywords clozapine and smoking. **Discussion:** As most inpatient psychiatric units have smoking restrictions, monitoring therapeutic doses and serum levels of atypical antipsychotics such as clozapine can be challenging. A patient may reach toxic serum levels on smoking cessation, while resumption would require readjustment of effective dose. In this patient, we anticipate that serum clozapine levels would decrease on resumption of heavy smoking, hence reiterating that it is essential to closely monitor patients on clozapine, even after discharge.

No. 27

Valproate-Induced Parkinsonism: A Case Report

Poster Presenter: Lauren E. Moore, M.D.

SUMMARY:

Background: Drug-induced Parkinsonism(DIP) is a well-known side effect of commonly prescribed psychotropic medications. Roughly seven percent of patients with Parkinsonism develop it as a result of a medication. In fact, DIP is the second most common cause of Parkinsonism in the elderly after Parkinson’s disease. It presents with tremor, masked facies, bradykinesia, rigidity, and postural instability that cause both emotional and functional impairment. The most common medications to cause DIP include neuroleptics, but there are many others, including antidepressants and antiepileptics, that are sometimes overlooked. This is a case of Valproate-induced Parkinsonism. **Case:** This patient is a 60-year-old female with a history of bipolar 1

disorder who presented to clinic with asymmetric Parkinsonism, including an action tremor, masked facies and bradykinesia with gait disturbance. Her medication regimen at the time included Valproate 750mg twice daily, quetiapine 500mg nightly, duloxetine 120mg daily, trazodone 100mg nightly, and melatonin 6mg nightly. There had been no changes to her regimen in the past three to four months, when she was started on Valproate for a manic episode. Initially, quetiapine was tapered but only resulted in progression of her symptoms, which at their peak required her to use a cane and wheelchair. She also exhibited cognitive decline, prompting assistance from her family with activities of daily living (ADLs) and instrumental ADLs (IADLs). At this time, other Parkinson's plus etiologies as well as Parkinson's disease were considered. She was referred to neurology, who recommended tapering Valproate along with further neurological workup, including brain MRI. Within one week of decreasing Valproate, she showed improvement in her gait and affect, which continued to gradually improve as it was tapered. At two-month follow-up, her cognition had returned to baseline, she was independent in ADLs and IADLs, and her gait had improved without recent falls. **Discussion:** Valproate was the most likely cause of this patient's Parkinsonism. The underlying causes of Parkinsonism can be complex, causing a delay in diagnosis and treatment, as it can often be mistaken for Parkinson's disease, as DIP is often clinically indistinguishable from Parkinson's disease. Similar to this patient, the symptoms can be severe enough to affect daily functioning and can persist for prolonged periods of time without timely recognition. Therefore, it is important for physicians to not only monitor for these symptoms but also recognize the multitude of medications that cause it.

No. 28

A Rare Case of an Acute Dystonic Reaction in the Setting of Clozapine Administration

Poster Presenter: William B. Pitts, M.D.

Co-Authors: Alexander M. Kaplan, M.D., Iqbal Ahmed, M.D.

SUMMARY:

Reports of dystonic reactions in the setting of clozapine administration are markedly lower than in other atypical antipsychotics. One such medication is

the long-acting risperidone depot injection (Risperdal Consta) that is administered every two weeks and is more commonly associated with extrapyramidal symptoms (EPS), including acute dystonic reactions. We present the case of a 44-year-old male with a longstanding history of treatment-resistant schizoaffective disorder and multiple hospitalizations for acute exacerbations of psychosis and suicidality. At the time of admission, he had been maintained on 50mg risperidone depot injections and an additional 2mg of oral risperidone at night. He had never reported any EPS from the medication. His last injection was five days prior to admission, and he continued oral risperidone on the night of admission and the following evening. The following morning, he was initiated on clozapine. By hospital day (HD) 15, he was receiving 175mg of clozapine twice daily. At approximately 1300 hours on HD 15, the patient was noted to be agitated, and he complained of a "swollen mouth." The patient was found to have his tongue slightly deviated to the left, slurred speech and a mild tremor in his hands when his arms were held outstretched. He was thought to be experiencing buccal dystonia, and 2mg of intramuscular benztropine was administered. He experienced a resolution of symptoms over the following hours and did not experience a recurrence of symptoms during the remainder of his hospitalization. Given the exceedingly low rate of reported EPS in the setting of clozapine administration, alternative explanations were considered. At the time of the adverse reaction, it is feasible that risperidone remained in the patient's system, with resultant significant CNS dopamine D2 receptor binding, due to slow elimination of risperidone from the continued release from the intramuscular depot microspheres. It is possible that the co-administration of clozapine, with its small amount of D2 receptor binding, may have led to the occupation of sufficient receptors beyond the threshold necessary to cause EPS, leading to the patient experiencing an acute dystonic reaction. As no previous such reports have been presented, the authors feel that this case may present clinicians with relevant additional considerations regarding the implications of clozapine initiation soon after discontinuation of chronically administered long-acting risperidone.

No. 29

Fentanyl-Induced Catatonia: Case Report and Literature Review

Poster Presenter: *Needa Khan, M.D.*

Co-Author: *Raman Sandhu*

SUMMARY:

Background: Fentanyl is a commonly used synthetic opioid, but it is not a recognized inducer of catatonic reactions. It is known to cause muscular rigidity, particularly of the chest wall, in some patients. We recently cared for a patient who developed an abrupt catatonic state after intravenous fentanyl. **Objective:** Report index case and review relevant human and animal literature. **Methods:** We conduct a single case report and PubMed/general Internet literature searches using terms fentanyl, catatonia and catalepsy. **Results:** A 39-year-old male with a past psychiatric history of bipolar disorder type I presented for repeat dilatation of a mucous fistula under anesthesia, which included intravenous fentanyl, lidocaine, propofol, and ondansetron. Of note, he had a prior uneventful similar dilation procedure using these same agents but with a lesser fentanyl dose. On awakening, the patient was immobile, mute and unresponsive while appearing awake with stable vital signs. On assessment using the Bush-Francis Catatonia Rating Scale, he had six of the 14 screening items present, and his full-scale score was 8 out of 23. He met Bush-Francis as well as *DSM-5* criteria for catatonia, with mutism, posturing, immobility, staring, stereotypy, and withdrawal. He was treated with 2mg intravenous lorazepam, and within one hour showed resolution of all the catatonic symptoms and was fully verbal and mobile. He was discharged home. The literature review revealed several animal studies where systemic or intracerebral injections of fentanyl and related opioids induced behavioral reactions analogous to catatonia. No reports linking lidocaine, propofol or ondansetron to emergence of catatonia were found. In fact, one case noted resolution of catatonia within hours of intravenous propofol in a complex patient with adenovirus limbic encephalitis. Two published cases were found where fentanyl as a component of the anesthetic regimen may have been a factor for postoperative catatonia. One case was of liver transplant using anesthesia with fentanyl,

midazolam, etomidate, succinylcholine, and isoflurane. Four days after anesthesia, the patient developed catatonia that largely resolved with zolpidem and oxazepam. A second report was an orthopedic case (using fentanyl, propofol and sevoflurane for anesthesia) where catatonia occurred upon anesthetic emergence, persisted for 20 minutes, and resolved within another 10 minutes after intravenous midazolam. **Conclusion:** While the literature review of animal studies suggests the potential for catatonic reactions from fentanyl and related opioids, these appear to be rare events clinically. We report a case suggestive of fentanyl-related catatonia that was abrupt in onset and rapidly responsive to lorazepam. The findings suggest that fentanyl-induced catatonia can respond to lorazepam and related high-potency benzodiazepines.

No. 30

Cases Demonstrating Early Use of Long-Acting Injectable Antipsychotics: Shifting the Paradigm From Last Resort to First Line

Poster Presenter: *Kathryn Q. Johnson, M.A.*

Co-Author: *Christian D. Neal, M.D., M.P.A.*

SUMMARY:

Background: Long-acting injectable (LAI) antipsychotics have been around since the 1960s and are often used with the most severely ill, treatment-resistant, poorly compliant, and frequently hospitalized patients. Despite research suggesting that 40–60% of patients with schizophrenia are partially or totally nonadherent to oral medications, less than 30% are prescribed an LAI. Literature is emerging that examines why LAI antipsychotics are not prescribed earlier, if at all. Using LAI antipsychotics sooner may slow the progression of severe mental illnesses by improving compliance, preventing hospitalizations, and reducing symptom recurrence and complications. Factors contributing to underutilization and late consideration of LAI use include lack of education about newer LAIs, limited exposure in training, injection delivery barriers, and concerns about patient perception. Increasing trainee knowledge and comfort with earlier use of LAIs will eventually improve provider and patient attitudes and shift the paradigm from last resort to first-line therapy. **Case:**

Mr. K. is a 29-year-old African-American male diagnosed with schizophrenia. Outpatient psychiatric treatment was initiated due to perceptual disturbances and odd behaviors. He had not taken medications prior to coming to the clinic and had no known hospitalizations. Oral antipsychotics were tried, but compliance was poor. The intensity of his symptoms increased, resulting in two hospitalizations. During his second hospitalization, outpatient providers arranged for a trial of paliperidone palmitate. Ms. C. is a 19-year-old Caucasian female who had her first three inpatient admissions in one month for management of depression and psychosis. Severe distress and impairment in functioning resulted in suicidal statements and ambivalence about medication adherence. The inpatient team opted for a trial of paliperidone palmitate for treatment of psychosis and unstable mood. Mr. S. is a 19-year-old Caucasian male who was hospitalized for the first time after self-inflicted stab wound to the chest. The patient had been on brief trials of low-dose oral antipsychotics. He was started on paliperidone palmitate during his first psychiatric hospitalization to address symptoms of paranoia, and possible negative symptoms of a primary psychotic disorder. **Discussion:** In this poster, we present cases where LAI antipsychotics were used early in the treatment course and present a method used to improve attitudes and educate about the benefits of this practice. Residents and faculty will be surveyed and asked to attend an interactive, case-based didactic exploring practice habits, attitudes and comfort with LAI treatment.

No. 31

Can Abilify Cause Impulsive Behaviors?

Poster Presenter: Allen Dsouza

Co-Authors: Senthil Vel Rajan Rajaram Manoharan, M.D., Shariq Haque, M.D.

SUMMARY:

Background: Dopamine receptor agonist drugs used to treat Parkinson's disease, restless legs syndrome and hyperprolactinemia have been known to cause severe impulse control disorders such as pathological gambling, hypersexuality, compulsive shopping, binge eating, and compulsive fascination involving repeated mechanical tasks. Abilify, which is

used to treat mental disorders such as schizophrenia, bipolar disorder and irritability in autism, also shares the same mechanism of action. Recently, the FDA issued a warning about impulse control problems associated with aripiprazole (Abilify) leading to compulsive or uncontrollable urges. We present a case report of a patient being treated with Abilify who presented with obsession for feces. **Case:** The patient is 51-year-old man with history of hypertension, mood disorder, TBI with residual right-sided spastic hemiparesis, and seizure disorder presenting from a nursing home to the hospital for evaluation for dizziness and increased falls. The primary symptoms were being managed by the medical and neurological teams. The patient was being treated with Abilify and venlafaxine for mood symptoms. Per reports from the nursing home, the patient had been compliant with his medications. He had been behaviorally stable; however, he was noted to be obsessed with fecal matter and smearing feces on the wall and also on the toilet seats. In light of the FDA warning about Abilify being associated with obsessive symptoms and problems with impulse control, Abilify was discontinued on day 2 of admission. There was significant improvement in the patient's obsession with feces after that. **Discussion:** The FDA recently issued a warning that the drug aripiprazole (Abilify) causes compulsive or uncontrollable urges to gamble, binge eat, shop, have sex, and other urges with impulsive and compulsive features. The FDA Adverse Event Reporting System (FAERS) database and the medical literature show that, since the approval of Abilify, 184 case reports (167 FAERS cases and 17 medical literature cases) indicate an association between aripiprazole and impulse control problems. The specific impulse control problems reported include pathological gambling (N=164), compulsive sexual behavior (N=9), compulsive buying (N=4), compulsive eating (N=3), and multiple impulse control problems (N=4). Of 17 cases published in the medical literature, all cases contained information that the compulsive behavior resolved completely when aripiprazole was discontinued, and four cases reported the return of compulsive behaviors when aripiprazole was restarted. **Conclusion:** Further research is needed to clearly establish the association of Abilify with impulse control disorders. However, psychiatrists should recognize the

possibility of impulse control disorders when prescribing Abilify and encourage patients to report any new impulsive or compulsive behaviors when on treatment.

No. 32

The Case for Pharmacogenomics: How Gene Testing Reversed a Pattern of Decline and Hospitalization in a Patient With Bipolar Disorder Type I

Poster Presenter: Jonathan Greenberg

Co-Author: Rif S. El-Mallakh, M.D.

SUMMARY:

Background: The various SULT genes are involved in the biotransformation of steroid hormones, neurotransmitters, drugs, and other xenobiotics. These genes have important implications for psychiatric treatment. For instance, patients with the SULT4A1-1 haplotype have been shown to respond to olanzapine more effectively than patients who lack the haplotype. However, as olanzapine is metabolized via the CYP1A2 pathway, it is also important to know whether or not a patient is CYP1A2 hyper-inducible. The patients with such a phenotype may show marked increase in CYP1A2 enzyme activity when exposed to an inducer like tobacco smoke. Therefore, these patients may not respond as well to normal doses of olanzapine and may require significantly higher doses. **Case:** Ms. B., a 46-year-old White female with a long history of bipolar disorder type I and a two to three pack per day smoking history revealed a pattern of poor treatment response and multiple psychiatric hospitalizations. When it was identified that she had a SULT4A1-1 that predicted good olanzapine response, and that she had a hyper-inducible allele at CYP1A2, she was started on 20mg olanzapine, which was soon increased to 30mg. A review of her chart and medical records examined the patient's hospitalizations and clinical encounters from approximately seven months prior to starting olanzapine to seven months after starting olanzapine. In the window prior to starting olanzapine, the patient was hospitalized on five occasions at three different facilities for over eight weeks. Since starting olanzapine, the patient has not been hospitalized. Furthermore, her encounters as an outpatient since starting olanzapine reveal considerable improvement. **Discussion:** This case

highlights the potential value of pharmacogenomic testing, particularly in patients who have not done well. The SULT4A1-1 haplotype and CYP1A2 hyper-inducer allele are generally not frequently considered. Pharmacogenomic testing should be considered in treatment-resistant subjects.

No. 33

Challenges in Diagnosis and Management of Serotonin Syndrome in a Patient With Schizophrenia Treated With a Long-Acting Injectable Antipsychotic

Poster Presenter: Shane D. Riggs

Co-Authors: Amber Mansoor, M.D., Aizaz Hundal, M.D.

SUMMARY:

Mr. C. is a 29-year-old Hispanic male with a past psychiatric history of schizophrenia. He presented to the hospital UCC with symptoms of disorganization, agitation, auditory and visual hallucinations, and suicidal ideation. The patient had no family available to provide collateral history and was a poor historian due to mental status. He informed providers that he had been taking trazodone and may have overdosed. He was accepted to the inpatient psychiatric unit as a direct admission for management of his acute psychosis and suicidal ideation, but was not seen by a psychiatrist until after arrival to the inpatient unit. Once there, he began to experience autonomic instability, tremors, posturing, and inducible myoclonus. The patient was transferred to the general medical floor due to concern for serotonin syndrome. Psychiatry continued to follow on a consulting basis and discovered through collateral that the patient had recently (less than a week earlier) received a dose of haloperidol decanoate and may have been taking an unknown type and dose of benzodiazepine in addition to trazodone. Due to worsening of his condition, he was transferred to the ICU and managed for a broad set of differential diagnoses (benzodiazepine withdrawal, serotonin syndrome or neuroleptic malignant syndrome). His preexisting condition of schizophrenia complicated management, especially without reliable knowledge regarding his baseline mental status; and his total hospital course was quite protracted (around five weeks) and acute in nature (attempts to elope from the medical floor,

delirium, paranoia), likely due to the further complication of having received a long-acting injectable form of a neuroleptic—the usual initial step in management would be the cessation of the suspected offending agent, which was not possible. This latter point makes this case of further interest because, while there are many examples in the literature of second-generation antipsychotics contributing to cases of serotonin syndrome, there are relatively few where a first-generation antipsychotic (much less a depot form) has been involved. This poster discusses in detail the challenges one can meet in diagnosis and management of a patient with symptoms of suspected psychotropic drug toxicity in the context of both severe mental illness (schizophrenia) and the use of long-acting depot forms of potent pharmacological agents.

No. 34

Recurrent Episodes of Quetiapine-Induced Acute Pancreatitis

Poster Presenter: Fei Chen

Co-Authors: Maanasi Chandarana, D.O., Mehdi Yazdanpanah, M.D., Stephen Welch, M.D., Ana Turner, M.D.

SUMMARY:

Mr. X. is a 55-year-old Caucasian male with history of hypertension, obstructive sleep apnea, chronic low back pain, and gout, as well as a past psychiatric history of bipolar I disorder and distant alcohol use disorder, in sustained remission. He was admitted to the inpatient medical service for epigastric pain, nausea and vomiting two days after restarting quetiapine after a two-week hiatus. Initial bloodwork on admissions showed white blood cell count of $18k/mm^3$, lipase over 600U/L and amylase 529U/L. Imaging studies confirmed diagnosis of acute pancreatitis. This marks the fourth reoccurrence of pancreatitis in this patient within four months. The first episode occurred spontaneously after 11 years of stability on quetiapine, but each following episode was associated with either re-initiation or titration of the antipsychotic. Prior to this, he had no previously reported side effects to the medication or history of pancreatitis. During this hospitalization, psychiatry was consulted for alternative medication

recommendations for treatment of bipolar I disorder, most recent episode depressed. Psychiatry recommended transitioning to lurasidone after literature review showed no prior documented causative relationship of pancreatitis, whereas other antipsychotic medications in consideration have been implicated. Quetiapine was stopped, and the patient's symptoms improved with antiemetics, analgesics and bowel rest. He slowly advanced in diet and was discharged home after tolerating oral intake. This is the first reported case of a patient developing pancreatitis from quetiapine after tolerating treatment without side effect for over a decade and without other current independent risk factors for pancreatitis.

No. 35

Was It the Antipsychotic? Acute Pulmonary Edema and Pericardial Effusion in a Patient With Olanzapine Use

Poster Presenter: Yarelis Guzman-Quinones, M.D.

Co-Authors: Fei Chen, Maanasi Chandarana, D.O., Almari Ginory, D.O.

SUMMARY:

Mr. B. is a 33-year-old Puerto Rican male with reported psychiatric history of schizoaffective disorder, bipolar type, and autism spectrum disorder. He was admitted to the intensive care unit for evaluation of new-onset bilateral pleural effusions and pericardial effusion causing tamponade physiology. He had no prior cardiac or pulmonary conditions that contributed to his presentation of recurrent pleural and pericardial effusion. The patient underwent two pericardiocentesis procedures and a comprehensive cardiovascular, pulmonary and infectious disease workup. He was treated empirically for urinary tract infection, tuberculosis and autoimmune causes. At that time, psychiatry was consulted for evaluation of olanzapine as a possible etiology of his clinical presentation. The patient had been maintained on olanzapine for fifteen years without significant side effects besides weight gain. During his admission, discontinuation of olanzapine and use of alternative antipsychotics resulted in a recurrence of auditory hallucinations. After conferring with the family regarding indications and risk and benefit ratio of olanzapine as well as the possibility of it contributing

to his symptoms, the patient was reinitiated on olanzapine. The patient's subsequent constrictive pericarditis slowly improved over the course of months without complications. Although there is no clear causative relationship between olanzapine and the patient's symptoms, the possibility of a medication-induced pleural and pericardial effusion cannot be ruled out in light of an otherwise negative comprehensive medical workup. Literature review showed limited publications on olanzapine-induced pleural or pericardial effusion. However, given that clozapine, another atypical antipsychotic, has been associated with similar symptoms, the possibility of this being a previously undocumented side effect warrants further investigation and increased awareness regarding this possible adverse event.

No. 36

Does Vitamin D Deficiency Increase Risk of Antipsychotic-Induced Parkinsonism: A Case Report and Literature Review

Poster Presenter: Andrew R. Smith

Co-Authors: Nicholas P. Basalay, M.D., Venkata B. Kollu

SUMMARY:

Background: Parkinsonism symptoms are often dose-related side effects of antipsychotic treatment, and these side effects can impede adherence. Vitamin D deficiency has been implicated in Parkinson's disease. **Case:** We report the case of a 24-year-old adult male patient with first-episode psychosis, who experienced severe Parkinsonian symptoms with 1mg of risperidone, which improved partially with benztropine. This patient reported his hips becoming so stiff that he could not move them without discomfort. He was switched to olanzapine, but experienced extrapyramidal side effects with 7.5mg dose. He has a history of severe vitamin D deficiency and has a previous history of femur fracture. **Discussion:** With low vitamin D increases the risk of Parkinson's disease by 33%. There is a higher density of vitamin D receptors in the substantia nigra. Also, there is a higher concentration of α -hydroxylase in the substantia nigra. α -hydroxylase is the enzyme involved in the conversion to 1,25-dihydroxycholecalciferol, an active metabolite of vitamin D. Vitamin D deficiency can also impact the development of dopamine

neurons. We hypothesize that hypovitaminosis D can cause a hypodopaminergic state in the substantia nigra, increasing the risk of Parkinsonian side effects associated with antipsychotics. Further research on investigating the relationship between vitamin D deficiency and antipsychotic-induced Parkinsonism is warranted.

No. 37

Psychotropic Medications During Pregnancy and Lactation

Poster Presenter: Zahid Islam

Co-Authors: Rassam Khan, Asghar Hossain

SUMMARY:

Background: Pregnant women who need antipsychotic medication often face a difficult dilemma: go off the drugs and risk a relapse or continue the medication during pregnancy and risk potential health complications. However, advising these women to discontinue medication presents new risks associated with untreated or inadequately treated mental illness, such as poor adherence to prenatal care, inadequate nutrition, and increased alcohol and tobacco use. **Objective:** Our goal is to provide a literature review and explore in depth each drug that should not be used or used with caution during pregnancy and lactation, thus providing a summary for doctors to prescribe safe medications and individualize the treatment plan during pregnancy and lactation for each patient.

Discussion: Exposure to selective serotonin reuptake inhibitors (SSRIs) late in pregnancy has been associated with transient neonatal complications; however, the potential risks associated with SSRI use must be weighed against the risk of relapse if treatment is discontinued. Paroxetine (Paxil) should be avoided by pregnant women and also by women who plan to become pregnant. Isolated adverse effects have been reported, the most notable of which was an infant who had transient apnea after being exposed to citalopram (Celexa). Carbamazepine exposure during pregnancy is associated with facial dysmorphism and fingernail hypoplasia. The use of lamotrigine during pregnancy has not been associated with any major fetal anomalies and is an option for maintenance therapy in women with bipolar disorder. Prenatal exposure to diazepam (Valium) increases the risk of oral cleft.

The use of olanzapine (Zyprexa), risperidone (Risperdal), quetiapine (Seroquel), and clozapine (Clozaril) has been associated with increased rates of low birth weight and therapeutic abortion.

Conclusion: The decision to use any atypical antipsychotic, anxiolytic, antidepressant, and mood stabilizer during pregnancy and lactation must be based on an individualized assessment of risks and benefits for each patient. The absolute contraindications (FDA: Category X) in pregnancy include paroxetine (Paxil), estazolam, flurazepam (Dalmane), quazepam (Doral), tamazepam (Restoril), and triazolam (Halicon). Medications contraindicated with positive evidence of risk during pregnancy (FDA: Category D) include chlordiazepoxide (Librium), clonazepam (Klonopin), diazepam (Valium), lorazepam (Ativan), carbamazepine (Tegretol), lithium, valproic acid (Depakene), and paroxetine (Paxil). Contraindications during lactation include doxepin (Sinequan), lithium, ziprasidone (Geodon), thioridazine, quetiapine (Seroquel), pimozide (Orap), loxapine (Loxitane), and nefazodone.

No. 38

Seizure Associated With Use of “Fat Burner Supplement” Along With Antidepressant Therapy

Poster Presenter: Balwinder Singh, M.D., M.S.

Co-Authors: Bradley Kohoutek, Amer Ibrahim, James L. Roerig

SUMMARY:

Background: “Fat burners” are easily available supplements, frequently used for weight loss. These may contain stimulants, ephedra derivatives, yohimbine, caffeine, bitter orange, grapefruit, amino acids, and others. Along with unproven efficacy, these can increase the risk of serious side effects and complications. **Case:** We present a case of a young Caucasian female in her 30s with a past history of recurrent, major depression and generalized anxiety disorder. She had a partial response to fluoxetine therapy (80mg daily). Augmentation with bupropion (Wellbutrin-XL) lead to remission of depressive symptoms. She had one episode of provoked seizure one month after the dose of Wellbutrin-XL was increased to 450mg. Neurology workup was negative. Wellbutrin XL was discontinued, which led to relapse of depressive symptoms and weight gain. Buspirone was initiated for augmentation with

fluoxetine, and the dose was optimized to 30mg three times daily. This improved her depression and anxiety symptoms. She had no history of substance use disorders or head trauma. Her medical history was positive for hypothyroidism, which was well maintained on levothyroxine. She self-initiated fat burner supplements containing bitter orange and grapefruit. Five days later, she experienced a seizure followed by postictal confusion for 15–20 minutes. Emergency room assessment included a normal unenhanced brain CT scan and normal laboratory results. Fat burner supplements were immediately discontinued. Buspirone was tapered and discontinued. The neurological consultation was obtained, and a provisional diagnosis of seizure most likely secondary to the interaction of grapefruit and buspirone was made. **Discussion:** To our knowledge, this is the first case report of a seizure related to the use of fat burner supplements along with antidepressant therapy. The incidence of seizures with fluoxetine is 0.2%, and incidence during buspirone treatment is estimated to be between 0.1 and 1%. There is only one prior case report of seizure associated with fluoxetine and adjuvant buspirone therapy. Bitter orange is a source of synephrine and can cause headaches, arrhythmias, and even cases of stroke and angina. Buspirone is eliminated mainly by metabolism, and a prior study has shown that potent CYP3A4 inhibitors greatly increase buspirone levels. Grapefruit juice probably inhibits CYP3A4-mediated drug metabolism mainly in the wall of the small intestine. Grapefruit can increase the C_{max} (4-fold) and AUC (9-fold) of buspirone. **Conclusion:** Fat burner supplements containing grapefruit can cause significant interactions and complications. Physicians need to recognize possible interactions between psychotropics and fat burner supplements and should discuss the possible risks with their patients.

No. 39

Quetiapine-Induced Sleep-Related Eating Disorder: A Case Series

Poster Presenter: Nisha Baliga

Co-Authors: Rishi Parikh, Amit Chopra

SUMMARY:

Background: Sleep-related eating disorder (SRED) is a disorder of arousal from non-rapid eye movement (NREM) sleep, which manifests as recurrent episodes

of involuntary eating and drinking during the main sleep period. It can be associated with one or more features including consumption of peculiar foods, insomnia, sleep-related injury, dangerous behaviors performed while in pursuit of food, morning anorexia, and adverse health consequences from recurrent binge eating of high-caloric food.

Methods: This case series will focus on two patients who presented to the clinic without prior history of parasomnia behaviors and reported SRED behaviors in association with quetiapine use. **Case:** The first patient is a 47-year-old Caucasian male with psychiatric diagnoses of bipolar II disorder, rapid cycling in nature, OCD and ADHD. He reported having recurrent episodes of SRED with choking during sleep, morning anorexia and weight gain due to eating high-caloric foods at night after initiation of quetiapine for mood stabilization. Sleep history was essentially negative for sleep disorders, including prior parasomnia behaviors and obstructive sleep apnea, except for transient restless legs syndrome after initiation of quetiapine treatment. He was unwilling to discontinue quetiapine due to its unparalleled efficacy in mood stabilization and sought treatment options for SRED. He responded very well to a trial of topiramate 25–50mg at bedtime with complete resolution of SRED episodes, but had to discontinue this medication due to cognitive side effects and hair loss. Due to documented efficacy of benzodiazepines in treatment of parasomnia disorders, alprazolam 1–1.5mg at bedtime was tried with an excellent response and no further SRED episodes. The second patient is a 37-year-old African-American female with psychiatric diagnoses of bipolar I disorder and OCD. She reported having episodes of nightly eating and weight gain after initiation of quetiapine for mood stabilization, but did not report these episodes to her primary team until the episodes became more frequent after a dose titration of quetiapine. Due to the partial amnesia and weight gain secondary to quetiapine, she opted to discontinue the medication, resulting in a complete resolution of her symptoms.

Conclusion: Quetiapine, along with other antipsychotics and sedative hypnotics, can be associated with parasomnia behaviors such as SRED. Treatment options for SRED include tapering or discontinuing the inciting agent or adding topiramate or benzodiazepines to the medication

regimen. As quetiapine often has many effective uses in the psychiatric setting, it is important to educate patients and their families regarding potential side effects of SRED. Further research into the mechanisms and treatment of quetiapine-associated SRED is warranted.

No. 40

A Case Study of Clozapine-Related Delirium

Poster Presenter: Jordan Harrison Rosen, M.D.

SUMMARY:

Clozapine is well known for both its efficacy in schizophrenia as well as its significant side effect profile. We often check levels of both the medication and its active metabolite to avoid toxicity while maximizing effectiveness. There are numerous drugs that interact with the metabolism of this medication, including many that are commonly prescribed as adjuncts in the treatment of schizophrenia. When one of these drugs is started, a patient's clozapine level can increase dramatically, which can manifest in worsening side effects and frank delirium. In this particular case, a 50-year-old female patient on clozapine for 10 years was started on Prozac for concern of depressive symptoms. This led to an increase of 60% in her total level, and over the following three years, she developed five urinary tract infections and corresponding deliriums, developed an additional two deliriums of unknown origin that resolved with short hospitalizations, and required a significant increase in her bowel regimen.

No. 41

Seroquel-Induced Priapism: A Case Report and Literature Review

Poster Presenter: Tymaz Adel, M.D.

Co-Authors: Aamani Chava, M.D., Srinkanth Reddy, Asghar Hossain, Sohi Gobind

SUMMARY:

Background: Priapism is an erection lasting more than four hours, a painful medical condition that may occur with or without sexual arousal; it is classified as either high-flow priapism, which is a non-ischemic condition that usually occurs secondary to trauma, or low-flow priapism, which is an ischemic medical emergency due to decreased blood flow through arteries in the corpus cavernosa.

Though rare, priapism has been reported as a potential side effect of quetiapine/Seroquel.

Objective: Report a case of Seroquel-induced priapism and review the available literature from PubMed, Google and UpToDate. **Case:** A. H. is a 24-year-old African-American male who was voluntarily admitted to the hospital due to a relapse of PCP abuse. Prior to admission, A. H. reported nonadherence with psychotropic medications that included escitalopram, gabapentin and quetiapine, which he had reportedly been taking for many years. On the fourth day of hospitalization, A. H. developed persistent priapism that required emergent ER urological intervention. Prior to this episode, he did not report any illicit drug use in the inpatient setting, nor any present history of malignancy, trauma, or sickle cell disease or trait. However, the patient did report two previous episodes of priapism. The first episode occurred one year ago, requiring similar emergent urological intervention in the ER setting. At that time, the patient was taking Depakote, Ambien and Seroquel. His second episode occurred two weeks prior to this current hospital admission and resolved spontaneously after several hours.

Discussion: Review of available literature has shown that there is a correlation between onset of priapism, the patient's age and the amount of time the patient has been on quetiapine, with cases reporting onset with the first dose of quetiapine to years after being on stable dose, as is seen in our patient. Reports also show a higher incidence in African Americans between the age of 20 to 50 compared to other ethnicities. **Conclusion:** We have found that priapism is a rare but severe side effect of quetiapine. The incidence of antipsychotic-induced priapism appears to be directly related to the affinity of the antipsychotics for the alpha-1 receptors, along with other possible contributing factors such as race/ethnicity and maintenance of dosage over time. Antipsychotics with high affinity for alpha-1 receptors include quetiapine, chlorpromazine, ziprasidone, and risperidone and are widely used in clinical practice today. This prompts an ever-increasing awareness of the current topic and this potentially serious medication side effect.

No. 42

Galactorrhea With Normal Serum Prolactin-Atypical S/E of Atypical Antipsychotics

Poster Presenter: Syed E. Maududi, M.D.

Co-Authors: Chirag Patel, Mohammad Ramay, Asghar Hossain

SUMMARY:

Background: Hyperprolactinemia has for decades been an inevitable and neglected side effect of antipsychotic medications. When the D2 receptors in the tubero-infundibular pathway are blocked, prolactin levels rise. It can sometimes go to such an extent that the patient can begin lactating inappropriately, a condition known as galactorrhea. Galactorrhea is a very common problem with antipsychotics, but it is very unusual to have galactorrhea with normal prolactin levels in patients taking antipsychotics. **Case:** A 30-year-old patient, never pregnant, with past psychiatric history of schizophrenia, bipolar type, presented to the outpatient clinic with the complaint of mild depressive symptoms and paranoia about people talking about her. She also had some manic symptoms like rapid speech, irritability and racing thoughts. She reports being stable on her current medications: lurasidone, topiramate and vilazodone. In the past, she was started on risperidone; when she started having galactorrhea, her risperidone was subsequently discontinued. On breast examination, she had secretions from both the breasts, and she said it measures up to half a cup every day. Her menstrual cycle has been irregular for many years now. In view of amenorrhea with galactorrhea, she was advised serum prolactin and thyroid profile estimations. Her serum prolactin was found to be 17ng/ml and 13ng/ml, which is within normal limits. Her thyroid profile and pregnancy test were also normal. MRI of the brain showed no abnormalities.

Conclusion: Current literature provides information on normal prolactin levels in patients with macroprolactinomas due to the "hook effect" of serum prolactin, but it doesn't explain the normal prolactin levels in patients on antipsychotics. Large quantities of antigen in an immunoassay system impair antigen-antibody binding, resulting in low antigen determination. We suggest that in order to avoid the high dose hook effect, the serum PRL be estimated in appropriate dilution in all patients, especially when high prolactin is suspected. This case reports a patient with galactorrhea with normal prolactin level and warrants further research.

No. 43**Evidence-Based Approach to Understanding Predictors of Antipsychotic Efficacy in First-Episode Psychosis: A Case Study and Literature Review**

Poster Presenter: Eric Lederman

SUMMARY:

Mr. S. is an 18-year-old college freshman with a past medical history significant for auditory hallucinations, unspecified brain lesions and alcohol use disorder who presented to the university outpatient mental health services in his first week of school for worsening auditory hallucinations. Mr. S. reported that, for the past two years, he's had mild, nonintrusive, non-commanding auditory hallucinations. His mother, who also had a history of auditory hallucinations, had been coaching him on how to cope with voices, distinguish reality from hallucination and maintain his identity separate from these voices. Although the patient was born in the United States, he grew up with his family in Austria and, at his mother's behest, avoided psychiatric care out of concern for being stigmatized. About five months prior to this office visit, he reported that his family and friends "noticed a big personality change" and so the patient's mother sought out a neurological consult; a brain MRI discovered nondescript brain lesions, but the neurologist ruled out multiple sclerosis and other neurological concerns and prescribed Xanax, which the patient did not take. Over the subsequent 2.5 months, the voices became increasingly intrusive, commanding and directing him toward "dangerous things like doing drugs or purposely saying things to offend people." He reported that his coping tools, which primarily involved reality checking, were no longer sufficient, and he now wanted psychiatric help. His presentation was positive for significant thought blocking, and the patient was started on a low dose of aripiprazole. He denied that his symptoms were related to mood or substance use. One of his main concerns was how long it would take for the medication to work and if he would be able to remain in school. There is an increasing amount of research aimed at predicting the effectiveness of antipsychotic medication early in treatment. This poster will present a comprehensive review and synthesis of the available empirical literature. The

ability to identify these early predictors of response for first-onset psychosis has the potential to inform clinical decisions that can reduce both a patients' mental suffering and the social and economic fallout that often accompany psychotic illness. This poster underscores the possibility and importance of identifying, early in treatment, when an antipsychotic will likely prove ineffective.

No. 44**Escitalopram-Induced Akathisia: A Case Report**

Poster Presenter: Akshay P. Lokhande, M.D., M.S., M.H.A.

Co-Authors: Qaiser S. Khan, M.D., Charles Dukes, M.D.

SUMMARY:

Akathisia is an extrapyramidal symptom described as the subjective sensation of inner restlessness with the objective observation of fidgeting or abnormal purposeless movements. It is most often associated with antipsychotic medications and is often underdiagnosed or misdiagnosed in patients who are treated with selective serotonin reuptake inhibitors (SSRIs). SSRI-induced akathisia has been reported several times, but escitalopram-induced akathisia is rare. This case involves a 64-year-old male with no significant psychiatric history who had developed severe akathisia after taking escitalopram for a few weeks. According to the Barnes Akathisia Rating Scale (BARS), his Global Clinical Assessment of Akathisia Score was 5—i.e., severe akathisia. As per Naranjo Adverse Drug Reaction Scale, the probability of association of this adverse reaction with escitalopram was 8 (i.e., probable). Escitalopram was decreased to half, but his symptoms did not resolve completely. On further reduction of the dose of escitalopram, adding propranolol and lorazepam, his symptoms improved rapidly. He was able to stand still for longer than five minutes, representing a significant reduction of target symptoms attributable to drug-induced akathisia. Newer SSRIs are rarely associated with EPS; the recognition of such adverse effects requires a high index of suspicion. Akathisia is an important diagnosis to make early in the treatment course of psychiatric illness due to its negative effects associated with patient outcomes. It has been associated with an increase in suicidal ideations, impulsivity, high risk for tardive

dyskinesia, increased substance use, medication noncompliance, and poor response to medication. In addition, akathisia can potentially exacerbate anxiety and psychotic symptoms. Akathisia may also present at different points during the treatment period with varying levels of severity in terms of patient distress. Early recognition, discontinuation or decreasing the dose of the offending agent and treating with benzodiazepines, beta-blockers such as propranolol, anti-cholinergic agents, or serotonin receptor antagonists such as mirtazapine may provide rapid relief from these distressing symptoms

No. 45

Panic Attacks as the Initial Presentation in a Patient With Brugada Syndrome: A Case Report

Poster Presenter: Akshay P. Lokhande, M.D., M.S., M.H.A.

Co-Authors: Charles Dukes, M.D., Britta Ostermeyer, M.D., M.B.A.

SUMMARY:

Brugada syndrome is a rare genetic disorder that is characterized by abnormal electrocardiogram (EKG) findings and an increased risk of sudden cardiac death. The typical patient with Brugada syndrome is a young, otherwise healthy male with normal general medical and cardiovascular physical examinations. Its clinical manifestations are variable; some patients can remain asymptomatic, while some may present with sudden cardiac death. Other initial presenting symptoms may include palpitations, dizziness, presyncope, seizures, or panic attacks. The diagnosis of Brugada syndrome relies on both clinical presentation and EKG findings that occur spontaneously or may be induced by usage of sodium-channel-blocking agents. Psychiatric evaluation should include the possibility of medical conditions contributing to physiological symptoms of various anxiety disorders. Our case involves a 31-year-old male patient with a nine-year history of panic attacks and generalized anxiety disorder who was treated with psychotropic medications and was subsequently diagnosed with Brugada syndrome. His symptoms of palpitations and presyncope were always attributed to anxiety. His Brugada syndrome was treated medically with automatic implantable cardiac defibrillator (ICD). The patient's eventual diagnosis of Brugada syndrome led to a change in his

psychopharmacological management. This case is an example of how an underlying undiagnosed medical disorder can affect the use of psychotropic medications that would otherwise be an optimal choice for the management of physiological symptoms of anxiety and panic disorder. Psychiatrists should be aware that psychotropic medications that block sodium channels, such as valproic acid, carbamazepine, oxcarbazepine, SSRIs, TCAs, first-generation antipsychotics, and clozapine, might increase the risk of syncope and sudden cardiac death. Prolonged QT has been listed as one of the side effects of psychotropic medications. Some Brugada patients display a QT prolongation in their EKG. Brugada syndrome should be on the differential diagnosis in patients presenting with panic attacks and anxiety disorders. In conclusion, awareness of typical signs of Brugada syndrome in psychiatric patients may prevent severe cardiac complications and sudden cardiac death.

No. 46

Adult-Cerebral X-Linked Adreno-Leukodystrophy: A Mirage of Psychosis and Substance Use

Poster Presenter: Celine C. Corona, M.D.

Lead Author: Abhishek Wadhawan, M.D.

SUMMARY:

The authors discuss a case of adult-cerebral X-linked adrenoleukodystrophy (XALD) who was erroneously diagnosed at multiple facilities before being referred to their hospital. Mr. J., a 34-year-old Caucasian male with a past psychiatric history of schizophrenia, bipolar disorder and substance use disorder, was initially admitted to a nearby psychiatric facility for racing thoughts, disorganized behavior, hallucinations, and delusional thought process. When no improvement was noticed on Risperdal Consta (50mg), he was transferred to our institution for further psychiatric stabilization. Mr. J. had been a professional computer programmer until his illness manifested in adulthood. He was involved in multiple car accidents and started using illicit drugs including cocaine, methamphetamine, ecstasy, K-2, alcohol, and cat tranquilizers. He was eventually dismissed from his position and was never able to keep a stable job. About two weeks into his admission at our institution, he was referred to the neurology service for evaluation of a circular

stereotypic movement of his head, which had reportedly begun after receiving Risperdal Consta several weeks prior in another hospital. He reported a year-long history of urinary and fecal incontinence. Neurological exam findings were significant for gait ataxia, stimulus sensitive ocular myoclonus, oculomotor dysfunction, bilateral exophoria, anisocoria, brisk deep tendon reflexes, and decreased vibration sense in distal lower extremities. Brain MRI revealed confluent deep white matter T2 hyperintensities in multiple areas concerning for a demyelinating disorder. Neuropsychological testing exhibited progressive decline in intelligence and impairment in learning new information. Blood work showed elevated levels of very long chain fatty acids (VLCFAs). Plasma ACTH level was slightly high with low-normal evening cortisol levels, indicating impending adrenal insufficiency. The age of onset of his illness was consistent with a diagnosis of adult-cerebral XALD, the rarest subtype of XALD (1–3% of all XALD cases with a total incidence of 1:17,000). XALD occurs secondary to a mutation in the ABCD1 gene (Xq28), which leads to an alteration in the metabolism of VLCFAs in the peroxisomal wall. VLCFA buildup results in brain demyelination, peripheral nerve damage and testiculo-adrenocortical insufficiency. Prognosis of adult-cerebral XALD is poor, resulting in a vegetative state in two years. If diagnosed at the asymptomatic stage, neurologic progression of XALD can be slowed down with Lorenzo's oil and dietary restriction of VLCFAs. At this stage, Mr. J. has limited therapeutic options available like adrenal steroid replacement, supportive and rehabilitative services, and management of his multiple comorbidities. This highlights the importance of educating physicians about this rare disease entity and also underscores the need for psychiatrists to recognize this disorder.

No. 47

Understanding Posttraumatic-Associated Pathologies: Presentation and Prevalence.

*Poster Presenter: Aos S. Mohammed Ameen, M.D.
Co-Authors: Viviana Chiappetta, M.D., Monica Badillo, M.D., Michelle Kohut, M.S.W., Wen Gu, Ph.D., Panagiota Korenis, M.D., Luisa Gonzalez, M.D.*

SUMMARY:

Fifty-five percent of people in the United States

report exposure to at least one traumatic experience in their lifetime. Although not every traumatic exposure results in posttraumatic stress disorder (PTSD) symptoms, there are characteristics that make particular individuals vulnerable to PTSD. Such characteristics include separation from parents at an early age, preexisting anxiety or depression, and family history of anxiety. In addition, those with PTSD are also at risk of having other psychiatric comorbidities, including an increased risk of anxiety, mood and substance use disorders. Reviewed literature highlights the increased incidence of PTSD on inpatient psychiatric units. However, despite knowing that there is an increased incidence of PTSD, it is uncertain how this affects the treatment planning and outcome for patients on inpatient settings. A performance improvement project was conducted on all newly admitted patients to our inpatient psychiatric unit, which is located in an urban hospital. We collected baseline data that identifies not only the prevalence of PTSD but also the clinical characteristics of our patients. In addition, we aim to further understand what traumatic experience is most prevalent in our community and better appreciate the prevalence of traumatic experience in our patient population. Improved detection and management of posttraumatic pathologies will also be reviewed.

No. 48

Missing From the DSM-5: "Lack of Physical Exercise

*Poster Presenter: Lauren M. Pengrin, D.O.
Co-Author: Roger Peele, M.D.*

SUMMARY:

It would be difficult to identify a more important etiological agent in medicine, including psychiatry, than "lack of physical exercise." Lack of physical exercise has a major role in serious illnesses such as cardiovascular diseases, osteoporosis and cancer. Lack of physical exercise has a much broader impact than many of the other behaviors listed in the DSM-5. For example, manic behavior, presence of delusions, catatonia, substance use, compulsions, depersonalization, and narcolepsy are all found in the DSM-5, but not the behavior of a lack of physical exercise. More than 40% of DSM-5 conditions have an etiological agent with a behavioral component, but none compare in magnitude to a lack of physical

exercise. This "lack of physical exercise" is ignored by psychiatry, even though it is recognized by the rest of medicine. In ICD-9-CM, its code was V69.0. In ICD-10-CM, it is Z72.3. However, there are no codes in the *DSM-5* allowing psychiatrists to include lack of physical exercise when assigning a diagnosis. Currently, more research is being done to further explore this link between physical exercise and psychiatric symptoms. Now more than ever clinicians are advocating for increased education for patients regarding the use of exercise as a treatment modality for psychiatric symptoms. We will review the literature on exercise levels and mental health and investigate this connection further. In this poster presentation, we present a case for the importance of including a qualifier for "lack of physical exercise" in the *DSM-5* and explore the impact this would likely have on the evaluation and treatment of psychiatric illness. A review of the literature on exercise levels and mental health establishes the case for including ICD-10-CM's "Lack of Physical Exercise, Z72.3" in future *DSM* editions.

No. 49

Cotard Syndrome Resulting From Valacyclovir Toxicity

Poster Presenter: Areef Kassam

Co-Authors: Elizabeth Ann Cunningham, Kiran Ivaturi

SUMMARY:

A 55-year-old African-American female with history of bilateral renal cell carcinoma and no known psychiatric history presented to the emergency department with an acute onset of altered mental status after receiving treatment with valacyclovir for the prior two days. The patient had valacyclovir initiated for the treatment of herpes zoster. She received six times the dose that should have been provided with appropriate renal dosing of the medication. The patient received a medical evaluation for the etiology of her altered mental status, including labs, imaging and physical exam. Labs were significant for elevated creatinine and potassium. Head CT was unremarkable. On exam, the patient exhibited nihilistic delusions, stating she was dead and in heaven and wanting to dance with providers—"come dance with me!" Other symptoms included erratic movements, bizarre posturing, and inappropriate smiling and laughing. The patient was

admitted to the hospital and dialyzed. Cotard delusions resolved as her mental status cleared following three hemodialysis treatments. This case supports previous literature recognizing that a Cotard syndrome can result from an adverse drug reaction, particularly valacyclovir.

No. 50

A Case of Levetiracetam-Induced Mania

Poster Presenter: Azka Bilal

SUMMARY:

Background: Levetiracetam is an FDA-approved antiepileptic medication commonly used due to its good safety profile and fewer drug-drug interactions. The precise mechanism of action is still unknown. Psychiatric side effects have been reported with its administration, including aggressive behavior, psychosis, agitation, emotional lability, and mood changes. However, the development of mania is an unusual side effect that has not been well documented. In this poster, we present the unique case of a 34-year-old male with levetiracetam-induced mania. **Case:** Mr. A. is a 34-year-old male with no past psychiatric history who was brought to the hospital by his family due to a change in his behavior. He had been displaying elated mood at home and not sleeping well. He punched a mirror the night prior to coming into the hospital "out of excitement," reporting an increased energy level. He was talking about "eternal life" and inquiring about dead family members, which was unusual for the patient as per the family. On further questioning, the patient reported feeling "close to God" and "hearing Him from the inside." On further interviewing, it was revealed that he had a history of seizure disorder and was prescribed levetiracetam 500mg twice a day about 12 days prior to admission. The patient's behavior started changing after he started taking the medication. Family history was negative for a psychiatric illness, there was no history of substance abuse and basic laboratory workup was negative. He was diagnosed as exhibiting a manic episode according to *DSM-5* criteria and admitted to the medical floor for further monitoring. Neurology was consulted, and levetiracetam was discontinued, as it was hypothesized that the current mood disturbance had been precipitated by the medication. The patient's mood symptoms returned to baseline over

a period of 24 hours. **Discussion:** This case report has important implications for patients prescribed levetiracetam. Patients should be monitored for development of mood symptoms including mania. Furthermore, clinicians should be cautious when administering this medication to those already with past psychiatric history of depression or bipolar disorder. Since the mechanism of levetiracetam is relatively unknown, further research needs to focus on the pathways through which this medication acts in the brain and, in particular, the mechanism through which it is associated with psychiatric side effects, including mania.

No. 51

Heartbreak Syndrome in a Chronically Depressed Woman: A Case Report

Poster Presenter: Pranathi Mruthyunjaya, M.D.

Co-Authors: Ayesha Sattar, M.D., M.B.B.S., Sanjay Advani

SUMMARY:

Background: Takotsubo syndrome (i.e., heartbreak syndrome) is a poorly understood, reversible catecholamine-mediated myocardial stunning. It stems from emotional or biological stressors and can prove fatal. The patients present with sudden chest pain, dyspnea and elevated cardiac troponin levels. Often misdiagnosed as a myocardial infarction, heartbreak syndrome occurs in postmenopausal women with a recurrence rate of 5–22% of patients within one to 10 years. There is usually a past history of anxiety and depressive disorders along with many life stressors such as emotional or physical abuse, divorce, loneliness, or other severe traumas. However, these cases are rare and often misdiagnosed. **Objective:** Increase awareness of differentiating heartbreak syndrome from other psychiatric illnesses. **Methods:** Case report of a patient with heartbreak syndrome. **Results:** The patient was diagnosed with heartbreak syndrome where the patient has suspected acute coronary syndrome and the physiological or psychosocial causes are unknown. **Discussion:** This case presents a middle-aged Caucasian female of normal BMI with a history of hypertension, fibroids, and schizophrenia and chronic depression. She was admitted for treatment of chest pain radiating to the back with nausea, vomiting, suspicion of unstable angina, and

suspected acute coronary syndrome. The patient and her family denied previous cardiac history and any drug abuse. Lab testing revealed elevated troponin. EKG testing showed diffuse symmetrical T-wave inversions in all leads, suggesting myocardial infarction. We discovered that she had normal coronaries consistent with hypertension and also mild left circumflex disease during left heart catheterization. She reported that she had not been taking any psychiatric medications for two weeks prior to the incident and at the time of the hospitalization. She was kept off her psychiatric medications during her hospital stay. The consultation-liaison service ruled out drug-induced QTc prolongation based on serial EKG results and restarting psychotropic medications upon cardiac stabilization. The patient was discharged home without any cardiac sequelae. **Conclusion:** We concluded that heartbreak syndrome may be diagnosed in patients with longstanding depression who suffer from acute coronary syndrome after other physiological and psychosocial causes are ruled out.

No. 52

Diagnosing Hashimoto's Encephalitis in a Patient With Recent Synthetic Marijuana Use and Probable Bipolar Disorder

Poster Presenter: Dorcas Adaramola, M.D.

Co-Authors: Shizhen Jia, M.D., Talha Baloch, M.D.

SUMMARY:

This is the case of a 40-year-old female with known history of major depressive disorder on sertraline, brought by police to the emergency department for attempting to break into cars to retrieve locked-in babies. She was responding to auditory and visual hallucinations, with labile mood and poor recollection of events leading up to her arrest. The patient was a poor historian, but mentioned use of synthetic marijuana one day prior. Her family knew little of her whereabouts prior to the arrest. Her labs were significant for negative drug screen and elevated TSH 8.24 with reflex T3 and T4 pending. She was managed on the psychiatric floor as bipolar disorder, mixed, and probable synthetic marijuana intoxication with multiple antipsychotics, anticonvulsant mood stabilizers and benzodiazepines, with some reduction of agitation,

but no resolution of psychotic or mood symptoms. Repeat TSH was 10.73, then 25.38, with T4 of 0.4. An endocrinology consult resulted in a diagnosis of Hashimoto's thyroiditis and considered Hashimoto's encephalitis. Thyroid peroxidase antibodies, antithyroid globulin and ANA were positive at high titers. She was started on thyroid supplementation. Brain MRI was negative for significant pathology. Cerebrospinal fluid analysis was normal. The endocrinology team advised against treatment with steroids, which is the mainstay of treatment for Hashimoto's encephalitis, for fear of worsening her psychosis, with concerns that this was not her diagnosis. During a six-week hospitalization, she was alert and oriented, but floridly psychotic. She was discharged on the above medications, as she did not consent to voluntary admission and could no longer be held on involuntary admission. We discuss the challenges of diagnosing a rare but probable organic cause, given a confounding differential of a synthetic marijuana-induced persistent psychotic disorder and possible bipolar disorder with a first manic episode.

No. 53

Diagnosing Ekblom's Delusional Parasitosis in a Patient With Concurrent Amphetamine Use Disorder

Poster Presenter: Dorcas Adaramola, M.D.

Co-Author: Mariyah Hussain, M.D.

SUMMARY:

A 30-year-old Caucasian female was admitted via the emergency room on account of suicidal ideation and a history of multiple suicide attempts. Past psychiatric history was significant for possible bipolar disorder and amphetamine use disorder, with consideration of substance-induced mood disorder. When evaluated in the emergency room, she complained of being infested by "springtail bugs" that were coming out of plants and eating her up. She also believed that her home, husband's genitals and other belongings had become infested due to her contact with them. A thorough physical examination was negative for any insects. She had multiple excoriation marks. She was severely agitated and distressed by her delusions, with labile mood, angry affect and suicidal thoughts, which she stated were occurring because no one believed her or wanted to help her remove the bugs. UDS was

positive for amphetamines. Differentials considered included amphetamine-induced tactile hallucinations, bipolar disorder current episode mixed, and bipolar disorder, with comorbid Ekblom's delusional parasitosis. She was admitted onto the psychiatric floor and started on haloperidol while awaiting pimozide, as it was non-formulary and required special order. She agreed to take medications with the understanding that they may not take away the bugs but would reduce her ability to sense them and thus reduce her distress from them. During her hospitalization, she received multiple doses of haloperidol and was transitioned to pimozide when it became available. She sustained significant reduction of her distress and recognized the role of the medication in reducing the distress. She continued to believe that she was infested by bugs, but was able to live with it. She was discharged in stable condition to continue her medications and be followed up on an outpatient basis. In making this diagnosis, a few confounding factors made diagnosis difficult. One was the presence of amphetamine use disorder. We discuss the challenges of making this diagnosis in the face of a strong confounding differential.

No. 54

Psychosis, Catatonia and Post-Psychosis PTSD

Poster Presenter: Evita Rocha, M.D.

Co-Authors: Evita Rocha, M.D., Robert G. Bota, M.D., Andrei Novac, M.D., Jiwon Shin, Daniel Kirsten, Diana Totoiu

SUMMARY:

We are describing the case of a 27-year-old female with no previous psychiatric history who developed post-psychotic PTSD after presenting with first-episode catatonia and psychosis. The patient initially presented to the emergency department with increasingly disorganized behavior and paranoid thinking over the course of one week in the context of multiple life stressors. Soon after admission, the patient became catatonic, demonstrating mutism, stereotyped behaviors and echolalia. After ruling out an organic cause for the catatonia, the patient was treated with lorazepam, which minimally improved her catatonia, but revealed active psychosis. In particular, she voiced a scenario that several men sexually assaulted her at her mother's home in the

time leading up to her admission. An investigation by law enforcement ruled out the occurrence of assault. However, the patient expressed vivid dreams, nightmares and distress centered on her assault. Various antipsychotics were trialed with little effect (risperidone, olanzapine, haloperidol, and clozapine). Given that she exhibited several characteristics of PTSD, other agents, including escitalopram, prazosin and divalproic acid, were initiated to target her PTSD-like symptoms. On this regimen, the patient showed significant improvement in her mental status and functioning. Thiothixene was added to target residual symptoms of her psychosis. She was discharged to home in the care of her mother and on follow-up remembered little of her psychosis and denied any trauma or occurrence of sexual assault in the past.

No. 55

Global Availability of Clozapine and the Risk of Decompensation for Recent Geriatric Patients From Africa: A Case Report

Poster Presenter: Adenike Ishola, M.D.

Co-Authors: Ayodeji Jolayemi, M.D., Mario Gustave, M.D., Tolulope Olupona, M.D.

SUMMARY:

Background: In individuals with schizophrenia resistant to treatment with other antipsychotic drugs, clozapine has been found to be an effective treatment. Due to its associated risk of agranulocytosis, routine testing and monitoring of the absolute neutrophil count (ANC) is required. We report a case of a chronically ill patient who migrated from Africa, was successfully treated with clozapine while in Nigeria and continued in the United States, a testament to the increased availability of state-of-the-art treatment globally and challenges of migration in geriatric patients. **Case:** 70-year-old widowed, Nigerian female presented to the hospital accompanied by her daughter due to agitated behavior and noncompliance with medications. She had a chronic history of schizophrenia, for which she was on clozapine 150mg daily for the past four years. In the past, she had tried several antipsychotics for multiple psychotic episodes but reported not responding to them. Prior to moving to the United States about nine months ago, she had been compliant with

clozapine 150mg at bedtime and also had an extensive history of outpatient and inpatient treatment in Nigeria. The patient decompensated due to medication noncompliance. **Conclusion:** Migration is often seen as a stressful event and can cause a relapse of underlying psychiatric disorder. Migrating to a new country can be challenging, especially with geriatric patients due to their acculturation challenges, which may result in medication noncompliance. Geriatric patients should be closely monitored during migration to minimize decompensation risk.

No. 56

Intermittent Explosive Disorder Diagnosed After Bone Marrow Transplant

Poster Presenter: Avjola Hoxha, M.D.

Co-Author: Jacqueline A. Hobbs, M.D., Ph.D.

SUMMARY:

Background: Bone marrow transplant and the disease processes requiring such transplants are stressful life experiences. Certain mental disorders have been shown to develop after bone marrow transplant, including adjustment, depressive and anxiety disorders. This literature will be discussed. **Case:** A 25-year-old male with no previous psychiatric history prior to bone marrow transplant presented to our outpatient clinic with complaint of new-onset anger management difficulties. Accompanying symptoms included verbal aggressions and behavioral outburst, some of which have included physical injury. The patient reported that the outbursts are not premeditated and that he is distressed by them. The presentation was most consistent with intermittent explosive disorder per *DSM-5* criteria. **Discussion:** To the best of our knowledge, intermittent explosive disorder has to date not been associated with bone marrow transplant. Many factors may play a role in the development of psychiatric illness after bone marrow transplant. First, the development may be coincidental (i.e., the disorder may have developed even if the patient had never been ill or had the treatment). Second, the disorder may develop due to disease and/or treatment stress or as a result of treatment (drug)-related adverse effects (e.g., due to steroid treatment). Third, there is the question of whether there is an immune-related effect of the

bone marrow transplant that somehow affects the brain. These possible hypotheses as well as others will be discussed. In addition, the induction of certain disorders such as adjustment, depression, anxiety, and possibly even psychosis by bone marrow transplant may be more easily explained or understood, but links to intermittent explosive disorder may not be as easily understood. A discussion of possible mechanisms of action will be included.

No. 57

Carnitine Deficiency Mistaken for OCD and Anxiety

Poster Presenter: Rachel Steere, D.O.

Co-Authors: Vedrana Hodzic, M.D., Andrea Naaum, M.D.

SUMMARY:

Ms. M. is a 19-year-old Caucasian woman with a past psychiatric history of OCD and anxiety who was brought into the emergency department by her parents for acute mental status change and psychomotor agitation. The patient is constantly moving and is unable to answer questions, instead repeating words and letters. She grasps at the physician's stethoscope during physical exam and is newly incontinent of urine. Her parents report that she has not slept in two days and requires help with feeding. Since age 11, the patient has had similar episodes every six months associated with her menses and involving withdrawn behavior and various motor symptoms. The patient was previously diagnosed with OCD and treated with sertraline because she would compulsively arrange her possessions at the start of these episodes. The patient has never been very social, but interacts normally with family in between episodes. She receives mostly A's in school and met all developmental milestones. Her history is negative for dietary restrictions, substance use, toxic exposures, and recent travel. In the ED, the patient is given lorazepam 2mg and is physically restrained to prevent her from pulling out IVs. She is initially diagnosed with acute psychosis and is recommended for inpatient psychiatric hospitalization. However, follow-up on medical history reveals past Lyme disease infection with unclear treatment, a tonsillectomy for repeated strep throat prior to the patient's first episode and generalized muscle

weakness with easy fatigability since childhood. The patient is admitted to the inpatient neurology service, where the persistent movement continues, and she has two episodes of hypoglycemia with ketones in her urine. Differential diagnosis includes NMDA-receptor encephalitis, PANDAS, limbic encephalitis, CNS Lyme disease, nonconvulsive status epilepticus, paraneoplastic syndrome, autoimmune disease, porphyria, and inborn errors of metabolism. She undergoes extensive workup, which reveals marked carnitine deficiency. The patient is treated with lorazepam as needed for akathisia, and her condition gradually improves. She is referred to a genetic specialist and is started on L-carnitine supplementation. This case highlights the potential manifestations of carnitine deficiency and the challenges of identifying medical conditions that may be mistaken as primarily psychiatric in etiology.

No. 58

Number of Conditions in ICD-10-CM in Comparison to ICD-9-CM

Poster Presenter: Arushi Kapoor

Co-Author: Roger Peele, M.D.

SUMMARY:

This nation's medical system depends on the International Classification of Diseases (ICD) for its clinical work, research and education. While the ICD began in the late 1800s, it was not until the 1920 edition that psychiatry was included in the classification. Nations using the ICDs can make alterations if consistent with the basic ICD, especially if adding greater specificity to the ICD version. While keeping the first three digits consistent, each country can add versions of specifier and/or modifier to the code. The United States has developed a "clinical modification" (CM) of recent ICDs. For example, in 1992, ICD-9-CM replaced ICD-8-CM. In 2014, ICD-10-CM replaced ICD-9-CM. An example of adhering to the ICD-10's first four digits and adding entities coded in the fifth digit is adjustment disorder. ICD-10 had "adjustment disorder, F43.2." ICD-10-CM has amplified that to F43.20, adjustment disorder, unspecified; F43.21, adjustment disorder with depressed mood; F43.22, adjustment disorder with anxiety; F43.23, adjustment disorder with mixed anxiety and depressed mood; F43.24, adjustment disorder with disturbance of conduct;

and F43.29, adjustment disorder with other symptoms. In the first digit, ICD-10 replacing a letter for a number (e.g., as to major depressive disorder single episode moderate 296.22 is replaced with F32.1) expands the potential number of codes from 18,000 (ICD-9-CM) to 38,000 (ICD-10-CM). Which medical specialties actually expanded the number of options in ICD-10-CM? Cancer, Endocrine disease, cardiovascular, respiratory, dermatological, obstetrical, and congenital conditions saw marked increases. Mental behavioral and neurodevelopmental disorders showed a modest increase from 508 to 724 conditions. Why did psychiatry show such a modest increase? There have been three reasons: 1) as two NIMH directors have pointed out, there have been virtually no additional etiological agents discovered in psychiatry in recent decades; 2) psychiatric treatment has not suggested a need for greater differentiation; and 3) the APA developers of the *DSM-5* had a specific goal of having no more conditions in the *DSM-5* than there were in the *DSM-IV*. Since the APA authors of the *DSM-5* worked closely with authors of ICD-10-CM, staff within the U.S. Department of Health and Human Services, it is not surprising that ICD-10-CM did not have a marked expansion of conditions.

No. 59

Diagnostic Difficulties in a Patient Presenting With Dissociative and Catatonic Symptoms

Poster Presenter: Nicholas P. Basalay, M.D.

Co-Authors: Shannon Kinnan, Venkata B. Kolli

SUMMARY:

Background: Catatonia is a unique state with a distinct set of motor and psychological symptoms and can be secondary to schizophrenia, bipolar disorder, anxiety, substance use disorders, and several other neurological and psychiatric conditions. We report a case of catatonia with an overlap of dissociative disorder, misdiagnosed as malingering. **Case:** A 38-year-old Caucasian female had two presentations to the emergency room (ER) for altered mental status and self-harming behaviors. She exhibited increased muscle tone. She also claimed to be from Eastern Europe and gave a different name from the ones in her hospital records. She was misdiagnosed with malingering and later with factitious disorder. Three days following

the second ER presentation, she was hospitalized to a psychiatric unit with a similar presentation. She had a Bush-Francis Catatonia Rating Scale score of 32 initially, which improved to 19 following administration of 8mg of oral lorazepam. She reported auditory hallucinations. Even though collateral history from friends revealed that she was born and raised in the United States, she continued to maintain that she could not understand English but managed to follow directions and conversations in English. The catatonia improved with lorazepam, but the patient maintained a firm belief that she was from Eastern Europe and had a different name and gave approximate answers raising the suspicion of a dissociative disorder **Discussion:** This patient had a considerable overlap between catatonia symptoms and dissociative symptoms. Catatonia is currently a relatively rare presentation in the Western world. With dissociative symptom complicating the presentation, the patient's condition was misdiagnosed as malingering. Dissociation, approximate answers and pseudohallucinations are some of the key symptoms of Ganser's syndrome, a dissociative disorder. However, up to 21% of patients with catatonia exhibit symptoms of Ganser's syndrome. Often, initial presentations of catatonia result in emergency room presentations. We recommend physicians working in emergency settings to be familiar with a diagnosis of catatonia and continue to consider catatonia as a differential when prominent dissociative symptoms are present.

No. 60

A Theoretical Framework for the Development of a New Fall Risk Assessment in an Acute Psychiatric Setting

Poster Presenter: Demetrio Prota

Co-Author: Rajasekhar Addepalli

SUMMARY:

Case 1: A patient with asthma and seizure disorder was taking risperidone 2mg per day. The patient was given haloperidol and lorazepam intramuscularly 24 hours before the fall. On the day of ADM, blood pressure was 129/76; on the day of the fall, blood pressure was 101/58. Case 2: This is a 40-year-old woman with bipolar disorder, schizoaffective disorder and hypertension on lisinopril DM, furosemide DM and metformin DM. The patient was

receiving risperidone 6mg per day and divalproex 1,000mg per day. She was not given any PRN medications. Her Hendrich Fall Scale score on the day of the fall was 0/16. (High risk is 5 or more.) On the day of ADM, blood pressure was 139/84; on the day of the fall, blood pressure of 107/69. Patients in an acute psychiatric unit have characteristics that put them at risk for falls that set them apart from those with purely medical or surgical problems. The commonly used fall risk assessment scales are not sensitive and specific enough to adequately assess the fall risk of patients in the acute psychiatric unit. It has been a common observation by clinicians at Lincoln Hospital inpatient psychiatric unit that many of the falls in the unit are preceded by changes in vital signs, specifically, a drop in blood pressure. Our proposed scale incorporates items from both the Morse and the Hendrich Fall Risk Assessment instruments but also includes items commonly seen in psychiatric inpatients. These include neuroleptic use, neuroleptic-naïve patient or not, administration of PRN parenteral medications within 24 hours, any change in vital signs (decreasing trend in blood pressure or increasing trend in heart rate), and any change in blood pressure medications. A new screening tool for use specifically in the psychiatric inpatient unit may potentially reduce the risk of falls and thereby reduce injuries. Further tests are needed to examine this tool's reliability and validity.

No. 61

Wernicke Encephalopathy, Non-Alcoholic Type in an Elderly Female: A Case Report

Poster Presenter: Ayesha Sattar, M.D., M.B.B.S.

Co-Authors: Pranathi Mruthyunjaya, M.D., Sanjay Advani, Shantharam Darbe

SUMMARY:

Background: Wernicke encephalopathy is typically a complication of continued alcohol abuse, frequently leading to Korsakoff syndrome. It is often underdiagnosed in the general population. Known primarily for symptoms such as confusion, ophthalmoplegia and gait ataxia, this illness can lead to death if untreated. However, it can also occur rarely in non-alcoholic patients, often through malnutrition, autoimmune conditions, bariatric surgery, and other conditions. Hence, there is a need for high clinical intuition in timely diagnosis and

treatment of such cases. **Objective:** Raise awareness about the non-alcoholic type of Wernicke encephalopathy. **Methods:** A case report of a patient with non-alcoholic type of Wernicke syndrome will be presented. **Discussion:** A 66-year-old African-American female with a past history of gastroparesis initially presented with generalized weakness with a pre-syncopal episode, anorexic symptoms and epigastric pain. The symptoms worsened with eating over four days, which was treated symptomatically. Over the next few months, she declined further with multiple hospital visits and admissions. During her most recent visit, she presented with anger and behavioral disinhibition. No evidence of depression, psychosis or anxiety was found. The patient, as well as the family, denied any history of alcohol use. Psychological tests revealed that she was alert, awake and oriented to person only. She failed the clock drawing test, indicating reduced cognitive-motor-perceptual functioning. Her raw score for the list-acquisition subtest from memory assessment scales was 8 out of 72 (two standard deviations below the mean), indicating severe verbal recall deficits. Further tests revealed a very low serum thiamine level. MRI showed enhancement in the Mallory bodies, suggesting a possibility of Wernicke's encephalopathy. She was then treated with thiamine supplement, and her symptoms improved. **Conclusion:** Thus, having ruled out other neurological, cognitive or psychiatric illness, we concluded that she had Wernicke's encephalopathy, non-alcohol type. In this poster, we discuss the challenges of differentiating between the etiologies of Wernicke's encephalopathy.

No. 62

Treating Depression Comorbid With Pedophilic Disorder: A Report of Two Cases

Poster Presenter: Phillip Gunnell

Co-Authors: Ingrid Wilseck, Samuel Wedes

SUMMARY:

Background: Per the *DSM-5*, people with pedophilic disorder have sexual interests toward prepubescent children that they have acted upon or that cause marked distress or interpersonal difficulty. This implies not all people with pedophilic disorder have had sexual acts with minors. However, society often views them one and the same. Social taboo may

delay or prevent one from seeking treatment, which may further lead to misunderstanding as the urges and fantasies potentiate criminal behavior. Comorbid depression has often been reported with pedophilic disorder; however, most research has focused on those who have acted on their sexual urges. This is a report of two adult males with pedophilic disorder whose pedophilic fantasies and urges resulted in severe depressive symptomatology but who never engaged in criminal behavior, per their report. Focusing on the sexual urges was a prominent component of treatment. **Case:** We report two males in their early 20s with severe depression with intense suicidal and homicidal ideations, largely mediated by guilt, shame and mistrust related to their pedophilic disorder. Significant to these cases is the delay in treatment as a consequence of fear of disapproval and rejection. By providing a nonjudgmental atmosphere and targeting therapy to sexual fantasies and urges, successful treatment of severe depression in an acute care setting was possible. Both patients experienced a significant improvement in their depressive symptoms with a combination of pharmacological therapy and intensive psychotherapy on a one-to-one and group basis. **Discussion:** These cases illustrate the therapeutic potential in treating depression comorbid with pedophilic disorder in the acute care setting. Society's stigmatization and automatic association of pedophilia with criminal behavior can be a barrier for seeking treatment. While sensitivity to the topic is obvious, those who are sexually attracted to children are not the same as those who act on those thoughts. We hypothesize society's misunderstanding may be an impediment to those needing treatment and may lead to criminal acts, further perpetuating the misconception of the disorder. Depression with comorbid pedophilic disorder is an underresearched area, but a common phenomenon. As part of a comprehensive treatment strategy, psychotherapy and pharmacotherapy can successfully reduce the urges, fantasies and behavior, even in an acute care setting.

No. 63

A Rash Decision to Diagnose Varicella-Zoster Encephalitis?

Poster Presenter: Michael H. Langley-DeGroot, M.D.

SUMMARY:

A 20-year-old Caucasian man with no significant past medical history presented with several days of altered mental status and disorganization. Two weeks earlier, he was diagnosed with cutaneous herpes zoster (HZ) after experiencing left hip pain and a rash on his left leg. He was prescribed oral acyclovir at that time, but stopped taking the medication after two days because it led to insomnia. Subsequent to his presentation, the patient was admitted to the medicine service and started on empiric intravenous acyclovir for possible herpes simplex virus (HSV) encephalitis. On the evening of hospital day one (HD1), he became paranoid and agitated and attempted to leave the ward. Intramuscular Haldol was administered. On HD2, his altered mental status was observed to be improving. Cerebrospinal fluid (CSF) analysis revealed a lymphocytic pleocytosis, though additional CSF studies, including culture, HSV PCR, enterovirus PCR, and VDRL, were all negative. By HD3, the patient's altered mental status had resolved, and intravenous acyclovir was discontinued. He was discharged with a suspected diagnosis of varicella-zoster virus (VZV) encephalitis. Seventeen days following discharge, the patient again presented with altered mental status and disorganization. CSF studies at this time were normal. The patient was admitted to the psychiatry service for suspected first-episode schizophrenia. VZV encephalitis is a rare complication of HZ, especially in young, immunocompetent adults. Many patients with acute cutaneous HZ and no neurologic symptoms have CSF abnormalities. Stressful life events are thought to be risk factors associated with the onset of both cutaneous HZ and first-episode schizophrenia. In this poster, we discuss the complexities of distinguishing between the two disorders when they are temporally associated.

No. 64

Catatonia as a Conversion Reaction: A Case in Exploration

Poster Presenter: Silpa Somepalli

SUMMARY:

There have been isolated reports of catatonia as a presentation of conversion reaction, though it is

difficult to definitively correlate the two given the complex nature of both processes. This poster will explore the case of patient X. X., a 30-year-old female with a history of unspecified depressive disorder with psychotic features (rule out unspecified bipolar disorder) and alcohol use disorder in remission, who presented with sudden and severe catatonia in the context of a likely environmental trigger, lending itself to the possibility of being a conversion reaction. X. X. presented with two back-to-back admissions. During the first admission (for worsening depression culminating in suicidal ideation with plan), it was noted that X. X. had several presentations consistent with conversion reaction, such as contextually worsening tremor and pseudoseizure. It was hypothesized that one of the triggers was the presence of her father, who had been linked to childhood as well as more recent adulthood trauma. This was in part due to staff witnessing worsening of conversion symptoms during family visits on the unit. Upon stabilization, she was discharged home to her parents, and two days later, she presented to the hospital in an acute catatonic state requiring readmission. The sudden onset, severity and timing of her catatonia raised suspicion that an environmental factor at home (such as the presence of her father) may have triggered the episode. Given the fact that she had presented with likely conversion reactions during prior admission, it was hypothesized that her catatonic state may indeed be a conversion reaction itself. During this hospitalization, it was also noted that she had amnesic recall of visits by parents (though may have been related to ongoing ECT treatments rather than trauma or dissociation). A literature search yielded only a few case reports of similar presentations. Some evidence supports catatonia related to trauma or PTSD. Patient X. X. was treated with oral Ativan and ECT for her catatonia, which improved significantly during her hospitalization. A family meeting was held to address underlying trauma by her father, given that she had never directly addressed the issue with him and would be returning to live with her parents upon discharge. X. X. was educated about the potential connection between her symptomatology and underlying distress related to past traumatic experience, and she expressed understanding. It was encouraged she continue to process the past trauma

and current trigger in ongoing psychotherapy. This poster will present the case by organizing symptoms and their corresponding environmental triggers as well as linking X. X.'s catatonia and conversion.

No. 65

Atypical Psychosis Presenting as Lucid Dreams With Command Auditory Hallucinations and Perceived Somatic "Punishment" If Disobeyed

Poster Presenter: Karla P. Lozano, M.D., M.B.A.

Co-Author: Roberto Castaños, M.D.

SUMMARY:

This case was seen in an outpatient psychiatric teaching clinic of a university. The patient was a 32-year-old Asian male with no prior psychiatric history except tobacco use disorder. He was a high-functioning, successful graphic artist working for a major corporation. He slowly developed nightly lucid dreams with command auditory hallucinations within weeks of moving into a new domicile, which intensified significantly in the months to follow. In his dreams, he received "instructions" that prompted him to wake up in the middle of the night and search the Internet for specific information. If he did not immediately obey these commands, he would suffer what he believed to be a "punishment," in the form of a severe headache. However, if he did obey, his headache was only mild. Finally, the patient noted experiencing auditory hallucinations on two separate occasions, while awake, soon after smoking cigarettes. The first episode was only five words. There was a second episode at home, shortly before bed, when the patient was smoking heavily; this one consisted of a narrative of time and space travel lasting 30 minutes. No other associated schizophrenia symptoms were identified. Imaging was negative, and lab tests were pending at the time of the initial report. Given the temporal relationship among his recent move, his smoking and the onset of auditory hallucinations, we concluded that chronic, subclinical carbon monoxide poisoning likely caused this atypical psychosis. The patient was instructed to use carbon monoxide detectors and stop smoking. Upon cessation of smoking, his symptoms rapidly resolved.

No. 66

A Culture-Bound Syndrome—Neurasthenia: The

Importance of Cultural Competence in Psychiatry

Poster Presenter: Xian Zhang

Co-Author: Farooq Mohyuddin, M.D., M.B.B.S.

SUMMARY:

Background: Globalization has made cultural competence extremely important. The American Psychiatric Association recommends that all psychiatrists assess cultural identity and explanatory models of their patients, which is consistent with the concept of cultural competence. Cultural competence has been defined as the ability of health care professionals to communicate with and effectively provide high-quality care to patients from diverse sociocultural backgrounds. **Methods:** To illustrate the compelling importance of the above concepts, we discuss a clinical vignette and then the cultural formulation. The sources used were the *DSM-5* and PubMed searches using the term “cultural competence.” **Discussion:** The clinical vignette presents a 22-year-old Asian male who presented with an episode of severe mania with psychosis. He had similar symptoms two years ago in his country, and he had to take medical leave of absence from school. He was diagnosed with “neurasthenia” at the time, treated symptomatically for insomnia and easy fatigability in his own country. We understand this as reluctance in Asian culture to diagnose mental illness. The delay in diagnosis of bipolar disorder had led to a second severe episode, which could have been prevented had he been treated at the initial presentation two years ago. It was the cultural competence of the treating psychiatrist in the U.S. that allowed the patient and family to accept the diagnosis of mental illness and to start the treatment. We would like to point out that it is possible to have variations in attitude, knowledge, behavior, religious values, and cultural idioms of distress in people belonging to the same country. The *DSM* omitted neurasthenia as a diagnosis in 1980, but it is listed in the appendix as the culture-bound syndrome “shenjing shuairuo” and has been retained in the ICD-10. The term literally means “nerve exhaustion and weakening;” this condition is thought to persist in Asia as a culturally acceptable diagnosis that avoids the social stigma of a diagnosis of mental disorder. Neurasthenia is only one example of a culture-related explanatory model. Culture, in relation to

race and ethnicity, influences the presentation and treatment of mental disorders. Failure to understand the cultural background of patients can lead to possible misdiagnosis, nonadherence and poor use of health services. The Cultural Formulation Interview (CFI) proposed in the *DSM-5* can be used to guide the collection of information and synthesis of cultural formulation. It is composed of a 16-item questionnaire supplemented by 12 modules related to different domains of the client’s social and cultural environments. **Conclusion:** It is crucial to have awareness of culture-bound syndromes and to implement the CFI in our clinical practice so that the psychiatric community is prepared for the ever-changing world and able to provide appropriate, accessible and high-quality clinical care.

No. 67

Case Report of Neuroleptic Malignant Syndrome

Poster Presenter: Kamal Patel, MD

SUMMARY:

Background: Neuroleptic Malignant Syndrome (NMS) is a rare condition clinically characterized by muscle rigidity, hyperthermia, autonomic instability, and acute mental status change. NMS is most often caused by neuroleptic medications such as antipsychotics. Typically, first-generation antipsychotics have greater association with NMS compared to second-generation antipsychotics. This syndrome can be fatal, with mortality rates as high as 15–20% without timely recognition and appropriate treatment. **Case:** We present a case of a 54-year-old male with past medical history of moderate to severe intellectual disability, schizophrenia, posttraumatic stress disorder, Parkinson’s disease, gastroesophageal reflux disease, and seizure disorder who initially presented to the emergency department (ED) from an assisted living facility with fever and nausea/vomiting for a duration of two to three days and ultimately was thought to have sepsis with unknown source, for which he was admitted to the hospital for further workup and observation. The following day, the patient developed increased muscle rigidity, tachycardia, tremors, elevated temperature of 103°F, tachypnea, and oxygen desaturation percentage into the 70s on room air. The patient was intubated and placed on mechanical ventilation

for airway protection. Close review of the medical record from the assisted living facility indicated that the patient had received haloperidol 2.5mg injection as needed prior to presenting to the ED. On hospital day 2, he developed leukocytosis and elevated serum creatine kinase. A diagnosis of NMS was made, and the patient was treated accordingly with dantrolene and supportive care. As such, all offending agents were held. As the patient stabilized and his condition improved, he was extubated. His psychosis shortly resumed, including auditory and visual hallucinations as well as paranoia, which was initially managed with carbamazepine and lorazepam; however, psychotic symptoms and agitation worsened, and the patient was physically aggressive, uncooperative and unable to participate to any extent in his care. Delirium workup was found to be unrevealing. The decision was made to start him on low-dose quetiapine and slowly titrate to effect. This appeared to adequately control his psychosis, and he promptly returned to his baseline mentation and level of function. This case illustrates the importance of early recognition of signs and symptoms of NMS and the need to promptly initiate treatment in order to prevent complications, including death. This case also highlights that the decision to resume antipsychotics, specifically atypical antipsychotics, after adequate resolution of NMS can be done so safely, especially if started at low doses coupled with intensive monitoring of the patient.

No. 68

Late-Onset Mania After the Removal of Right Anterior Temporal Lobe Oligodendroglioma

Poster Presenter: Leah D. Stalaker

SUMMARY:

A 62-year-old male presented with recurring manic episodes and mild paranoid delusions following the removal of a right anterior temporal lobe oligodendroglioma. Although primary bipolar disorder may manifest in those above the age of 50, the mean age of onset for both type one and type two bipolar is 17–31, with only 10% of primary bipolar disease first presenting after age 50. In fact, mania secondary to organic disease has been documented in up to 43% of manic cases in the elderly. For this reason, new-onset mania in elderly

patients should lead physicians to consider further testing, including EEG and neuroimaging. The mechanism by which mania develops in the presence of a focal cortical lesion is unknown and likely multifactorial, although damage to right-sided frontotemporal limbic connections has been implicated in many case reports. Additionally, perfusion studies suggest that secondary mania can be caused by “contralateral release phenomenon” with increased activation of the left hemisphere. Brain lesions that can cause mania include traumatic injury, ischemic damage, benign or malignant tumors, and right temporal lobe resection. Dementia, CNS infections, drug use, and metabolic disturbance have also been implicated in secondary mania. The case presented in the report exemplifies the “contralateral release phenomenon” as an etiology for secondary mania, following right anterior temporal lobe resection. A 62-year-old right-handed male was admitted with new-onset confusion with mild disorientation. He had no prior history of mood disorder. During hospitalization, the patient had a seizure, and brain MRI reviewed a mass in the right temporal lobe. The patient underwent right anterior temporal lobe resection and subsequent radiation therapy to the tumor bed for an oligodendroglioma. He was treated with levetiracetam and had no recurrence of seizures. He was prescribed alprazolam for insomnia. Following surgery, the patient complained of mild short-term memory problems and Folstein Mini Mental Status Exam was 28/30. The patient had no focal neurological deficits aside from right facial numbness. Despite good neurological outcome, the patient developed significant change in his mood and behaviors. He experienced periods of elevated mood with insomnia and irritability. He reported grandiose delusions and paranoid thoughts about possible governmental conspiracies. On exam, he was cheerful with rapid and loud speech, increased sense of self-worth and circumstantial thought process. Five years after surgery, he was involuntarily admitted for manic symptoms after leaving home unexpectedly and driving “about 3,000 miles” in five different states. Levetiracetam was discontinued, and valproic acid 1,000mg every evening at bedtime was started. Quetiapine 25mg every evening and alprazolam 0.25mg every evening

were used to help improve sleep and paranoid thoughts.

No. 69

Heavy Metal Psychosis: Not the Music

Poster Presenter: Matthew M. LaCasse, D.O.

Co-Author: Michael R. Liepman, M.D.

SUMMARY:

Background: Heavy metal toxicity is uncommon, yet it should not be forgotten. There are many different heavy metal toxicities with different symptomatology, clinical courses and treatments. Heavy metal toxicities are sometimes overlooked secondary to their low incidence. We describe a case of thallium toxicity in a 41-year-old male. **Case:** A 41-year-old Caucasian male with no significant past medical history presents to the emergency department with a chief complaint of sharp, stabbing pains in his mid and lower abdomen, pain in his legs bilaterally, and painful tingling in his feet and hands. The patient was treated symptomatically with acetaminophen-hydrocodone, polyethylene glycol and diazepam as a “muscle relaxer” and released. The following day, he presented again, only to be released once more. On his third presentation with new symptoms, including numbness and weakness in his lower extremities bilaterally, he was admitted to the hospital for a thorough workup. After six days of treating his Guillain-Barre syndrome with intravenous immunoglobulin, he was discharged to inpatient rehab. Eleven days later, he was brought back to the hospital for personality changes, hallucinations and bizarre behavior. The patient’s lower extremity pain and weakness had increased, leading him to become unable to walk without assistance. In addition, he began to lose hair from his head, arms and legs. Per RN note, he recently stated “I’m being stabbed by 32 doctors with that knife over there.” His RN holds up a drinking straw, and the patient states, “Yes, that’s it,” followed by unintelligible mumbling. The patient continued to worsen, and a psychiatry consult was placed on day 5 of the current admission. The psychiatry team diagnosed delirium secondary to general medical condition with question of toxic exposure versus autoimmune encephalitis. As the hospitalization progressed, the patient’s debility and delirium worsened. His delirium was not particularly

agitated. Antipsychotics and sedatives were used infrequently secondary to risk of side effects. A very thorough work up via many modalities was initiated, including a “heavy metal toxicity” panel of arsenic, cadmium, lead, and mercury. The only positive data were elevated thyroid antibodies, electroencephalogram showing epileptiform discharges and electromyogram showing asymmetrical axonal neuropathy. The patient was trialed on steroids for proposed Hashimoto’s encephalopathy, yet showed no improvement. It was not until day 21 of hospitalization (day 41 since first presentation) that thallium levels were drawn. On day 23, serum thallium levels resulted 158ng/L (normal 0–1). The Centers for Disease Control promptly flew in Prussian blue, and continuous veno-venous hemofiltration began. **Discussion:** In much of the available literature, the triad of alopecia, abdominal complaints and neuropathy is considered “pathognomonic” for thallium toxicity. This case is not only an account of a rare disease process but also a learning opportunity on many accounts.

No. 70

Undiagnosed Frontotemporal Dementia Presenting as New-Onset Psychosis: A Case Report

Poster Presenter: Jooyeon Lee, M.D., M.H.S.

Co-Authors: Joe Hong, Norma Dunn, Ronnie Swift

SUMMARY:

Background: Frontotemporal dementia (FTD) is a disease that typically presents with impairment in memory and cognition, along with progressively worsening cortical functioning and behavioral changes. It is a relatively uncommon disease. One of the early presentations involves a change in behavior and emotional blunting and thus is often misdiagnosed as a psychiatric disorder. Hallucinations and delusions can even precede the onset of other cognitive or behavioral symptoms in patients with FTD. This diagnosis can be challenging; thus, clinicians often do extensive investigational workups before making the diagnosis. This case illustrates the importance of considering FTD in an elderly patient with new-onset paranoia and delusions. **Case:** A 69-year-old female with no history of psychiatric illness or alcohol or substance use presented to the psychiatric emergency room

for psychiatric evaluation after being arrested 96 times in the past four months for stealing. Her medical history was significant for hypertension and hypothyroidism. On initial evaluation, the patient was mildly agitated and delusional. She reported that the items she had been accused of stealing belonged to her and that the store managers stole her bag. She endorsed grandiose delusions of being employed in "a higher level of healing" and has been curing cancer by touching people with her palms. There were no focal neurologic deficits. The patient had elevated TSH (6.80 μ U/mL). She had a normal CBC, BMP, LFT, vitamin B12, and serum glucose. Urine toxicology was negative for illicit drugs. Syphilis IgG antibody was non-reactive. Echocardiogram was unremarkable. An initial diagnosis of psychosis not otherwise specified was made. She scored 14 out of 29 on the Mini-Mental State Examination with concentration, memory and objective naming being significantly impaired. She had normal speech fluency. Her head CT (computed tomography) showed atrophies of the frontal lobes and bitemporal lobes out of proportion to the rest of the brain and consistent with FTD. The patient was treated with haloperidol 5mg as needed for agitation. The patient was discharged to a nursing home, as she was unable to care for herself outside the hospital. **Conclusion:** FTD is a relatively uncommon cause of dementia. There is a wide spectrum of clinical presentations and changes in personality, behavior and language. The changes, however, may be subtle and may be mistaken for depression or psychosis. Our patient's speech fluency and delusions did not fit the classic presentation of dementia and steered the diagnosis toward a psychotic disorder. The knowledge that psychotic features may occur prior to the onset of other typical symptoms of FTD requires clinicians to further consider neurodegenerative diseases such as FTD in the differential diagnosis in elderly patients with new-onset delusions.

No. 71

The Risks of Using Herbal Supplements in Psychotropic-Induced Sexual Dysfunction: A Case Report of Extenze Use and Priapism

Poster Presenter: Jooyeon Lee, M.D., M.H.S.

Co-Authors: Joe Hong, Norma Dunn, Ronnie Swift

SUMMARY:

Background: Many psychotropic medications are known to cause sexual side effects. Extenze is marketed as a sexual enhancer herbal supplement that contains yohimbine, which is an alpha-2 adrenoceptor antagonist. In November 2013, the Food and Drug Administration (FDA) issued an alert that counterfeit Extenze also contains sildenafil as an active ingredient in an FDA-approved medication prescription for the treatment of erectile dysfunction. Priapism has been associated with the combination of yohimbine and sildenafil. Unfortunately, the side effects of this herbal supplement are usually unknown to most of our patients. **Case:** Mr. X. is a 40-year-old male diagnosed with schizoaffective disorder. He has no history of substance or alcohol use. His medical history includes diabetes mellitus and a seizure disorder. He was never diagnosed of sickle cell disorder. His medications were aripiprazole 20mg daily, olanzapine 20mg daily, valproate acid 500mg twice daily, and topiramate 100mg twice daily. Mr. X. presented to the medical emergency room with the chief complaint of a sustained erection for three days. His history revealed intake of Extenze more than the recommended dose of one tablet daily to relieve his sexual dysfunction. His liver function test, basic metabolic profile, kidney function tests and thyroid function tests were within normal limits, except his white blood cell count of 23.3k/ μ L. His urine toxicology screen was negative for illicit drugs. He was subsequently admitted to the urology service for further management. Trials of intracavernosal phenylephrine were unsuccessful, and a Winter's shunt procedure was performed, which completely resolved his priapism. The patient was discharged on antibiotic ciprofloxacin 500mg twice daily for seven days and oxycodone 5mg/acetaminophen 325mg daily as needed for pain and to continue his psychotropic medications. He was advised to go back to his primary psychiatrist and urology for follow-up care. **Discussion:** Psychotropic medications and diabetes mellitus are the risk factors that can cause erectile dysfunction in our case report. Extenze-induced priapism appears to be the side effects of yohimbine, one of the listed ingredients in Extenze. Whether our patient had taken the counterfeit product containing the sildenafil is unknown; however, if he did, sildenafil-induced priapism has

been reported in the literature. The combination of excessive use of yohimbine and sildenafil in Extenze most likely exaggerated the vasodilative effects and caused the priapism. Our case report highlights that clinicians need to educate patients on psychotropic-induced sexual dysfunction and the potential dangers of over the counter sexual enhancer supplements.

No. 72

Quetiapine-Induced Torsade de Pointes: A Case Report

Poster Presenter: Ulfat Shahzadi, M.D., M.B.B.S.

Co-Authors: Fatima Iqbal, M.D., Abhimanyu Yarramaneni, Laima Spokas, M.D., Barbara Palmer, Asghar Hossain

SUMMARY:

Background: Quetiapine is a second-generation antipsychotic that acts by antagonizing multiple neurotransmitter receptors, including dopamine D2 receptors and serotonin 5-HT_{1A} and 5-HT₂ receptors. Quetiapine is used to reduce the positive and negative symptoms of psychotic disorders such as schizophrenia, bipolar mania and acute depressive episodes in bipolar disorder. Like many second-generation antipsychotics, quetiapine has several adverse reactions, including exacerbation of suicidality, tardive dyskinesia, dystonia, hypotension, and QTc prolongation. **Objective:** Explore the adverse effects of quetiapine, specifically QTc interval prolongation, when taken at therapeutic dosages in individuals who have no risk factors or other comorbid conditions. **Case:** A 46-year-old Caucasian female with a history of depression and anxiety was compliant with medications and follow-up. The patient was taking trazodone for insomnia and switched to Seroquel due to poor response. She felt mild dizziness after starting Seroquel 50mg oral dose at bedtime. On the third day after taking Seroquel at night, she had lightheadedness and nausea, called 911 and was brought to the hospital ER, became unresponsive, was resuscitated, and was diagnosed with torsade de pointes, Seroquel induced, after ruling out other causes. **Discussion:** Torsade de pointes is a distinct form of polymorphic ventricular tachycardia that is uncommonly characterized by palpitations, syncope and dizziness, as in our case, with EKG showing a twisting of the

QRS complexes around the isoelectric axis. QTc interval prolongation, whether congenital or acquired, is often associated with torsade de pointes. The most common cause of acquired QTc prolongation is medication. There have been twelve cases of QTc interval prolongation reported after quetiapine administration. The common risk factors for induction of torsade de pointes by quetiapine are females (nine of 12 cases), co-administration of a drug known to cause QTc prolongation (eight of 12 cases), hypokalemia and hypomagnesemia (six of 12 cases), quetiapine overdose (five of 12 cases), baseline cardiac abnormalities (four of 12 cases), and co-administration of cytochrome P450 3A4-inhibiting drugs (two of 12 cases). In our case, there are no prior risk factors and/or comorbid conditions, and the patient was not on medications that cause QTc prolongation, had no electrolyte abnormalities, and was taking quetiapine appropriately at the therapeutic dose prescribed.

No. 73

Late-Life Depression: A Challenging Public Health Concern Associated With Medical Comorbidities

Poster Presenter: Ulfat Shahzadi, M.D., M.B.B.S.

Co-Authors: Saad F. Ahmed, M.D., Asghar Hossain

SUMMARY:

Background: Depression in the elderly is known as late-life depression. Late-life depression is an increasingly common problem, as longevity of elderly people has increased in recent decades thanks to advances in medicine. Many factors are associated with late-life depression, ranging from age of onset of depression to comorbid medical illnesses. There is consensus in the medical community that late-life depression is common in the elderly and a public health concern. There is also consensus that comorbidity of late-life depression with other medical illnesses is particularly common and problematic. Management of late-life depression presents the medical community with its own set of unique challenges, especially because diagnosis is delayed in the context of multiple medical problems. Complicating the situation, social and economic problems of the elderly pose a confounding factor, and physicians as well as patients themselves take late-life depression as a normal consequence of aging. The patient is an 80-

year-old Caucasian female. She was brought to the ER by local police after she experienced worsening of depression, showed agitated and aggressive behavior, and expressed suicidal ideas with plan to jump out the window at her nursing home. She reported that she had been feeling depressed for over six months following hospitalization at another local hospital in March 2015 for acute exacerbation of COPD that required continuous O₂ therapy and monitoring, which led to decline in her ability to function independently. The patient was hospitalized involuntarily in the geriatric unit. Her mother also suffered from late-life depression and was treated with imipramine. She agreed only to take imipramine initially, which was augmented by mirtazapine. She gradually showed improvements as evidenced by improved mood, increased participation in groups/activities and better medication compliance. **Discussion:** Late-life depression is fast becoming a serious public health issue as more and more elderly people are living longer lives that are constrained by social, financial and health issues. Medical conditions such as chronic disease can complicate the scenario. It is hypothesized and supported by many studies that cerebrovascular risk factors play an important role in development of late-life depression. Patients with late-life depression have more neuroradiological abnormalities compared to other elderly patients with early onset depression.

No. 74

Polypharmacy-Induced Psychosis and Pseudodementia in a Formerly High-Functioning Patient With Parkinson's Disease

Poster Presenter: Daniel Pietras, M.D.

Co-Author: Tessy Korah

SUMMARY:

Polypharmacy represents a common and pressing issue for geriatric patients. On average, about twenty medications are prescribed to patients over the age of 75, increasing the risk of significant interactions and adverse effects that in turn may lead to mortality. In this poster, we present the case of a highly functioning 78-year-old male on more than 15 medications and with apparently advancing dementia who eventually became psychotic and began threatening family members. He initially

presented to a medical facility for acute encephalopathy and urinary tract infection in the context of tremors of unknown origin, for which he had been prescribed pramipexole for over three years and amantadine for eight months. Laboratory studies and imaging of the head, chest and abdomen demonstrated no contributory findings. Admission medications also included an SSRI (fluoxetine) and a benzodiazepine (clonazepam). He was transferred to a receiving psychiatric facility on an involuntary basis and continued to demonstrate impaired cognition (MOCA 24) and agitation. With discontinuation of the above medications and initiation of risperidone and bupropion, the patient gradually became calmer, and cognition improved to near-normal levels (MOCA 26). This case demonstrates the need for caution in prescribing dopaminergic and anticholinergic medications to geriatric patients, since in states of acute illness, certain combinations of medications may induce subacute states of psychosis and pseudodementia that may both be reversible with discontinuation, even if the patient previously had appeared to do well on the medications.

No. 75

Shifting Paradigm: From Cure Toward Prevention of Alzheimer's Disease

Poster Presenter: Santosh Ghimire

SUMMARY:

Alzheimer's disease (AD) is one of the costliest and most prevalent diseases. As the world population is aging and the baby boomers are coming of age for AD, the cost of AD will take up a significant portion of the total health cost in the future. There has been no medication to cure AD. Any measures to date to cure the disease have been a failure. Medication currently approved by the FDA for any stages of AD has very little, if any, effect on the disease symptoms and has almost no effect on slowing or stopping the disease process. Though some of the rehabilitative and/or patient care programs have shown some benefits in later stages, it is not the final solution to this degenerative disease. In the past, a lot of focus was in finding the cure for AD. The drugs and therapeutic approaches were toward either eliminating amyloid or intervening when the patient is in the later stage of AD. In the last few years, there

were three major failures in terms of medication for the treatment of Alzheimer's disease. The futility of these trials has now turned the attention of the research and drug companies toward preventive strategies for AD. There is a silver lining to the failures: for once and for good we might be finally coming to realize where the problem really lies.

No. 76

Hydroxyurea-Induced Late-Onset Psychosis: A Case Report

Poster Presenter: Mahitha Kolli

Co-Authors: Adefolake Akinsanya, M.D., Rajesh R. Tampi, M.D., M.S.

SUMMARY:

Background: Hydroxyurea is a chemotherapeutic agent that is the first-line agent for the treatment of thrombocytosis. It is also used in the treatment of various types of cancer, HIV infection and sickle cell anemia. Hydroxyurea acts by inhibiting DNA synthesis primarily by blocking the ribonucleotide reductase and thereby controlling the rate of further proliferation. There is limited data on the psychiatric or neurotoxic adverse effects of hydroxyurea, although the term "hallucinations" has been listed under the side effects profile of the medication in several non-peer-reviewed journals or drug websites. **Case:** We present the case of a 74-year-old Caucasian female with no prior psychiatric history who was admitted for altered mental status, including new-onset paranoia and visual hallucinations for two months. Further review of her history indicated these symptoms occurred after the recent addition of hydroxyurea to her medication regimen. Extensive laboratory workup was negative for other medical causes for her psychotic symptoms. The Naranjo Adverse Drug Reaction Probability Scale indicated a score of 5 in her case, which indicates that psychosis was a probable adverse effect of the hydroxyurea use. A literature review assessing the correlation between hydroxyurea and psychosis was completed. PubMed, Medline, EMBASE, Google Scholar, and PsychInfo were searched using terms "hydroxyurea" and "psychosis;" "hydroxyurea" and "hallucinations;" "hydroxyurea" and "mechanism of action;" and "hydroxyurea" and "side effects." **Results:** There are limited publications linking hydroxyurea with new-

onset psychotic symptoms, although there are supportive publications that have reported psychosis as a side effect of hydroxyurea. Barry et al. reports hydroxyurea can present with neurological side effects such as headache, drowsiness, disorientation, convulsions, and hallucinations. This was clinically reported to the Medicines Control Agency in the UK during the period of 1967 to 1998, when they noticed 11 neurological manifestations among 162 reactions to medication. In addition, hydroxyurea was also found to have some adverse effect on cognitive functioning. Hydroxyurea is well known to cross the blood-brain barrier easily and can be proposed to be a culprit for other neurotoxic medications to cross the blood-brain barrier easily. **Conclusion:** New-onset psychosis appears to be an uncommon but important adverse effect of hydroxyurea use, especially in an older adult. Given the limited research and the associated morbidity and mortality related to psychosis overall, there is need for further research and clarification regarding this important adverse effects of this medication. This will help prevent additional cases of psychosis due to hydroxyurea, thereby improving the quality of care for the patients.

No. 77

WITHDRAWN

No. 78

Case of Tactile Hallucinations and Somatic Delusions in a Patient With Alzheimer's Dementia

Poster Presenter: Tayyaba Ali

Co-Authors: Sanjay Advani, Clayton Morris, Darbe Shantaram

SUMMARY:

Neuropsychiatric symptoms are nearly universal in Alzheimer's dementia. Affective, psychotic and sleep symptoms relapse and remit throughout the course of the disease. Hallucinations are also seen as a part of the disease, though they are a more common feature of Lewy body dementia and Parkinson's disease. Complex visual hallucinations predominate; auditory or tactile hallucinations are rarely seen. This is a case report of a patient who presented with worsening tactile hallucinations and somatic delusions. An elderly female with history of Alzheimer's dementia was referred from the local

regional hospital, brought in by her granddaughter for the patient's worsening hallucinations. The patient complained of pain in her left eye after pulling what she thought were small pads or snaps—described as invisible small squiggles—out of her eye and which she believed to also be on her nails and lips. She also had visual hallucinations of bugs crawling in her bed. The patient's left eye was swollen and red as a result, leading to the possibility of eventual loss. Her prior history indicated hearing impairment, hypothyroidism (on medications), allergic rhinitis, and hypertension. Mental status exam revealed that she had sleeping difficulties, and it was apparent that both her concentration and attention were decreased. Her immediate and recent memory were impaired. Thus, we concluded that she had major neurocognitive disorder with psychotic symptoms, and treatment with antipsychotic resulted in marked improvement of these symptoms. This case highlights a novel hallucination type in an elderly patient with Alzheimer's dementia.

No. 79

Lithium Use for Treatment-Resistant Bipolar Disorder in the Geriatric Patient With Multiple Comorbidities: A Case Study Approach

Poster Presenter: Crystal Reyelts, M.D.

Co-Author: Thomas Magnuson, M.D.

SUMMARY:

Mr. C. is a 71-year-old male with a past psychiatric history of bipolar I disorder. The patient has a past medical history significant for cryptogenic cirrhosis and chronic kidney disease. Complications from the patient's cirrhosis include ascites and hepatic encephalopathy. His refractory ascites is managed by weekly paracentesis. The patient takes lactulose for his history of hepatic encephalopathy. His renal disease is secondary to hepatorenal syndrome, and his baseline creatinine level is 2.2. The patient has a history of treatment-resistant bipolar disorder, which is currently controlled with lithium 300mg twice a day. He presents to the geriatric psychiatry outpatient clinic for follow-up appointment. In light of this elderly patient's multiple medical comorbidities, he will need routine serum lithium levels completed. Recommended serum lithium levels in elderly patients are lower compared to

younger patients. The patient will also require appropriate dose adjustments to lithium as needed, as elderly patients often require lower dosages of lithium compared to younger patients. Geriatric patients may also require that lithium levels be kept low to avoid side effects. The neurotoxic side effects of lithium, including cognitive impairment, will need to be monitored closely in this patient due to his history of hepatic encephalopathy. In this poster, we will discuss the guidelines and challenges of using lithium in treatment-resistant bipolar disorder for the geriatric patient with multiple medical comorbidities.

No. 80

Twenty-Four-Hour Activity Patterns as Biomarkers for Depression and Anxiety in Older Men

Poster Presenter: Arthur T. Carter, M.D.

Co-Authors: Andrew R. Hoffman, M.D., Jamie M.

Zeitzer, Ph.D.

SUMMARY:

Background: Currently, there are a limited number of objective diagnostic tools to assist primary care providers and mental health professionals in adequately supporting their clinical diagnoses of depression and anxiety. Consequently, most diagnoses are heavily dependent on the subjective symptoms as reported by patients and the objective clinical findings as found by providers on mental status exam. With the advancements of many technologies in today's society, which serve a variety of purposes from improving the facility of online socialization to heart rate monitoring, it would be highly useful for health care providers to have an objective tool, such as a biophysical activity monitor, that could provide evidence to help support their clinical suspicion, to monitor an individualized treatment plan and to assist in referrals when clinically indicated. **Methods:** We examined the 24-hour activity pattern in older, community-dwelling men (N=2,972) using wrist actigraphy (Octagonal SleepWatch-O, Ambulatory Monitoring, Ardsley NY) as collected in the Osteoporotic Fractures in Men (MrOS) sleep sub-study. Actigraphy data were collected for four to seven days in each participant, and each participant also completed a Geriatric Depression Scale (GDS) and Geriatric Anxiety Scale (GAS). An average day of actigraphy data was

generated for each participant, and these data were fit with a nine-Fourier-based function. These 2,972 functions were subjected to functional principal component analysis (fPCA) to determine the underlying equations that explained the greatest amount of variance. We examined the first four derived equations, as these explained about 85% of the variance. How well each individual's 24-hour activity pattern matched these equations was represented by an eigenvector. Using multiple regression analysis, we modeled the relationship between the derived eigenvectors and continuous GDS and GAS scores, using education, sleep disruption, age, socioeconomic status, education, and race as co-factors. **Results:** After adjustment for co-factors, 24-hour activity patterns that can be described as low activity (high fPCA1, $p < 0.0001$), waking and going to sleep later (low fPCA2, $p < 0.01$), and waking earlier and going to sleep later with lower daytime activity (high fPCA3, $p < 0.001$) were all significantly associated with depressive symptoms as determined by the GDS. After adjustment for co-factors, notably the presence of sleep disruptions, there were no 24-hour activity patterns that were significantly associated with anxiety symptoms as determined by the GAS. **Conclusion:** Twenty-four-hour activity patterns were associated with depressive, but not anxiety, symptoms in older community-dwelling men. Given the increasing ubiquity of both wearable and cell phone-based activity trackers, the ability to derive clinically meaningful information from such data could be an important tool for clinicians in their screening, diagnosing or monitoring of psychiatric conditions.

No. 81

Underdiagnosis of Problematic Substance Use in the Elderly Population

Poster Presenter: Elizabeth Leung

Co-Author: Lidia Klepacz, M.D.

SUMMARY:

Mr. C. is a 69-year-old male veteran with history of five prior psychiatric admissions, generalized anxiety disorder, major depressive disorder, opioid use disorder, sedative/hypnotic use disorder, remote history of cocaine and alcohol use disorder, personality disorder, medical history of coronary artery disease, a recent coronary artery bypass graft,

COPD, and cervical spinal stenosis who initially presented to Westchester Medical Center for complain of chest pain, was admitted to cardiology for workup and was transferred to the inpatient psychiatric unit after attempting suicide by cutting his wrist with a blade. During the hospital course, patient was extremely preoccupied with bodily pain symptoms. Mr. C.'s symptoms were not able to be clinically justified, nor was he able to elaborate reasonably. Instead, he had provided conflicting history regarding to his pain symptoms and became agitated when clinicians tried to explore his symptoms further. He perseverated on feeling unjust and angry when his multiple high-dose pain medications were tapered during a prior hospitalization at another inpatient facility and threatened to end his life if adequate treatment for pain is not available to him. The patient requested to be transferred to the medical unit for complaints of chest pain, where he received medical workup and treatment including pain medications. Though it remains unclear whether secondary gain was involved in his requests to be sent to the medical ER, substance use has clearly been a substantial issue for Mr. C. Despite having a history of polysubstance use, he has no history of admission to detox, rehab or outpatient treatment for his problematic substance use. Substance-related disorders in the elderly remain overlooked and undertreated. Substance use in the elderly includes, but is not limited to, alcohol, illicit drugs, narcotics, hypnotics, pain medications, polypharmacy, and medication misuse. Available literatures indicated that up to 16% of elderly individuals have alcohol use disorder; the overall prevalence for substance use disorders in the elderly was 20% in outpatient settings. Prevalence is higher in those with comorbid psychiatric and medical conditions. Substance problems are highly associated with mood disorders, marital discord, poor psychosocial outcomes, and comorbid health conditions. Use of substances in geriatric patients often is not adequately detected by clinicians due to their transference, assumptions or inadequate awareness. As they were developed and validated in younger samples, the currently available diagnostic criteria are likely to underestimate the prevalence of substance use among the elderly, and unique treatment resources targeting this population are warranted. In the poster, we will discuss, based on

review of literature of the prevalence, epidemiology, screening, assessment, and diagnosis, the available treatment and resources, and the importance of emphasis in medical education on substance use as an under-addressed problem for elderly population.

No. 82

An Atypical Dementia Presentation

Poster Presenter: Ebony Dix

SUMMARY:

This is a case of a 67-year-old single, retired male with a history of major depressive disorder with psychotic features who presented for voluntary admission to the inpatient psychiatric hospital. The chief complaint was worsening depression and anxiety leading to a decline in his level of functioning. The patient had been newly diagnosed with depression following the death of his spouse two years prior. He had experienced a 10-pound weight loss and an increased frequency of panic attacks accompanied by fluctuating bouts of hypophonia and dysphagia over the course of a few months. He was being treated by his outpatient provider with citalopram for depression and anxiety, ziprasidone and risperidone for auditory hallucinations, and benztropine for extrapyramidal side effects. He was also taking lorazepam for anxiety and panic attacks and suvorexant for insomnia. When initially admitted to the hospital, all medications were continued except for suvorexant, risperidone and citalopram. Paroxetine was initiated, and he was placed on a modified lorazepam taper given the high doses he had been taking at home. He walked and talked without any difficulty upon arrival to the unit. On hospital day 2, the patient was noted to be walking with a slow, shuffling gait and speaking in a barely audible whisper. On the following day, he was observed to be whispering, hyperventilating and disoriented to the year. Interestingly enough, his speech was normal later that day. Over the course of several days, these behaviors seemed to fluctuate, and a complete medical workup ruled out possible causes of delirium. He was placed on clonazepam, and the paroxetine and ziprasidone doses were increased. A few days later, the patient began refusing medications and complaining of dysphagia. He had symptoms concerning for Parkinson's disease (PD) such as bradykinesia, hypomimia, a shuffling

gait, and cogwheel rigidity. Dysphagia was evaluated with a modified barium swallow study and found to be consistent with oropharyngeal dysphagia, which one might see with Parkinsonism. The antipsychotic was subsequently tapered and discontinued. Paroxetine was also discontinued and replaced with vortioxetine for depression and anxiety. Clonazepam was continued to address panic attacks. MRI of the brain was unremarkable. The patient scored 20/30 on the Montreal Cognitive Assessment (MoCA), and neuropsychological testing revealed deficits consistent with a Parkinsonian dementia and possible components of Alzheimer's disease. At that time, he was started on a trial of carbidopa-levodopa, and after a few days, there was improvement in his ability to communicate and his gait. The patient was given a diagnosis of major neurocognitive disorder due to probable dementia with Lewy bodies. Several weeks later at his outpatient appointment, he was placed on transdermal rivastigmine, oral donepezil and, later, oral memantine, which further improved his cognition.

No. 83

A Case of Leukodystrophy Presented With Acute Agitation

Poster Presenter: Muhammad W. Khan

Co-Authors: Rassam Khan, Chirag Patel, Faiz Cheema, M.D., Asghar Hossain

SUMMARY:

Background: Leukodystrophy is a group of symptoms that involves progressive destruction of previously acquired myelin. It encompasses a heterogeneous group of disorders that involve CNS white matter. It is due to mutations in genes that encode protein components of the myelin membrane or enzymes implicated in the turnover of myelin. Typical symptoms in everyone from infants to adults include difficulty initiating movement, difficulty learning new tasks, loss of motor developmental milestones, speech disturbance (difficulty initiating words), behavioral changes (agitation), and decreased cognitive functioning. **Case:** This is a 61-year-old Caucasian male who presented with aggressive and agitated behavior. The patient was verbally and physically abusive toward the staff at his residence. On examination, he

appeared confused and was unable to communicate because of difficulty initiating words. He also had trouble initiating motor movements like holding a cup or a pen; he was mute, apathetic and irritable. The patient was admitted and started on quetiapine 25mg twice daily by mouth as per family. His wife then noted that the patient was diagnosed five years ago with adult-onset leukodystrophy with early-onset dementia. For the last five years, the patient has been staying home and completely dependent on his wife and health aide for his activities of daily living (urinary and fecal incontinence; unable to dress, feed or shower himself). **Discussion:** In patients presenting with psychiatric symptoms associated with behavioral problems, cognitive dysfunctions, motor abnormalities, or gait abnormalities, it is important to rule out organic brain pathology such as leukodystrophy.

Neurological findings, including urinary incontinence, cerebellar dysfunction, speech disturbances, and nystagmus, are reported in adult-onset leukodystrophy. Some psychiatric symptoms seen are personality changes, disinhibition, emotional lability, and psychosis. Psychosis is present in 53% of the published case reports of early adult-onset leukodystrophy, a much higher prevalence than that seen with other primary neurological disorders. The presence of cognitive decline is a characteristic that helps to differentiate adult-onset ALD from primary psychiatric disorders. However, it is important to recognize that there are late-onset cases in which disease presentation maybe atypical, clinical course often insidious and diagnosis significantly delayed.

Conclusion: Our concern in this case is to educate ER psychiatrists on how to recognize the rare diagnosis of leukodystrophy in acute psychiatric settings. Diagnostic methods can include detailed history, blood and urine tests, MRI scans, nerve conduction tests, and genetic tests. MRI can be used not only to diagnose but also to predict disease progression among patients. Psychiatrists should obtain an MRI in acute psychiatric settings to clarify the diagnosis.

No. 84

An Exceptional Case of Borderline Personality Disorder in an Elderly Female and Its Challenging Management

Poster Presenter: Priya Kumar Rana, M.D.

Co-Author: Bruce Gimbel, M.D.

SUMMARY:

A 69-year-old Caucasian female with past history significant of depression, anxiety and multiple medical comorbidities was referred by the inpatient facility. The discharge plan recommendations were to taper her medications and continue treatment with the lowest dose needed. She reported decline from her baseline mood due to tapering in the estrogen patch dose, which she had been on for more than 20 years. She also reported having cognitive difficulties, anxiety, nightmares, feelings of helplessness, hopelessness, and insomnia. During her inpatient stay, the psychotropic medications were tapered with the thoughts of their effects on cognition and overall health. She was initially on paroxetine 40mg, clonazepam 4mg, doxepin 200mg, and nortriptyline 10mg. At the time of discharge, she was on paroxetine 30mg, clonazepam 2mg and doxepin 100mg. The patient was evaluated at the first visit, and the treatment plan included continuing medications as well as initiating supportive therapy. She did well for two weeks after her discharge but then started to regress. She required constant support, including twice a week visits for supportive psychotherapy along with medication management. She was somatically preoccupied along with multiple symptoms of depression. During therapy sessions, she was focused on her physical symptoms and occupied with wanting to be on more medications. She was focused on parental neglect, verbal abuse and feelings of not being loved. Her relationship with her children has been strained, and she has been immensely dependent on her husband. She felt no relief from her symptoms and became suicidal at times. She started to display help-seeking/help-rejecting behavior. She demanded and dominated her treatment, and when her demands were not met, she threaten to "end it all." She also attempted suicide by overdosing on her prescription medications. She was admitted to the inpatient unit, following which, she reported not being treated well by the inpatient psychiatrist. She was thought to be fabricating her symptoms to seek attention from the treatment team. She went to partial program twice, and it was at her second partial hospitalization that the possibilities of personality disorder were explored. It was discussed with her treating team

that, given her childhood trauma history and current level of functioning, she might be an exceptional case of borderline personality disorder. Due to the chronicity and severity of depression and anxiety, the personality disorder could have been masked. This could also be a possible reason for her symptoms of not responding to medications, as the anxiety and depression in the presence of personality disorder tend to respond better by treating the maladaptive behaviors and improving cognitive distortions. Her treatment plan was further revised, and emphasis was placed on providing supportive therapy to improve self-image along with continuing the medications.

No. 85

Progressive Supranuclear Palsy and Neuropsychiatric Manifestations: A Case Report

Poster Presenter: Suhey G. Franco Cadet, M.D.

Co-Authors: Abhimanyu Yarramaneni, Asghar Hossain

SUMMARY:

Background: Progressive supranuclear palsy (PSP) is a clinical syndrome comprising supranuclear palsy, postural instability and mild dementia.

Neuropathologically, PSP is defined by the accumulation of neurofibrillary tangles. The classic presentation of PSP-RS is the constellation of Parkinsonism, supranuclear gaze palsy and postural instability with falls early in the course. While PSP is classically considered a disorder of primarily motor and ocular dyscontrol, there are prominent cognitive, neuropsychiatric and sleep-related manifestations of the disease. Because the fronto-subcortical neural networks are invariably involved, psychomotor slowing, some degree of forgetfulness, impaired decision making, and apathy are common.

Pseudobulbar affect, overt obsessive/compulsive features, and disinhibited behavior can also occur. Insomnia and hypersomnia can also develop.

Fortunately, some of these cognitive, neuropsychiatric and sleep manifestations can respond to therapies. **Objective:** Examine a case of progressive supranuclear palsy, its neuropsychiatric manifestations and their management. **Case:** We present the case of a 66-year-old Caucasian male admitted to our hospital for aggressive behavior. On further evaluation, the patient was found to have

been suffering from dementia of Alzheimer's type and was found to be irritable, labile and difficult to redirect, with disorganized behavior. On a neurological consult, the patient was considered to have progressive supranuclear palsy due to his unsteady gait and inability to care for self.

Discussion: PSP typically presents with a gradual onset and progressive course of symmetric levodopa-unresponsive Parkinsonism characterized by postural instability with falls, supranuclear vertical gaze palsy, dysarthria, dysphagia, and cognitive and behavioral disturbances. The concept of "subcortical dementia" has been applied to those with PSP, in which there is slowing of cognitive processing, but "cortical" signs such as significant amnesia and aphasia tend to be mild at worst. Letter fluency (i.e., word generation starting with a letter of the alphabet over a specific time period) and cognitive flexibility tend to be particularly impaired. Etiology remains elusive, but a variable combination of genetic, environmental, oxidative stress, and inflammatory factors may all contribute. The management of the cognitive, motor and gait aspects of PSP is challenging. Treatment is directed toward target symptoms such as specific neuropsychiatric features (e.g., anxiety, depression, pseudobulbar affect) and sleep disorders (e.g., sleep apnea, restless legs syndrome, etc.). Support, education and nonpharmacological therapies remain the primary treatment options for PSP.

No. 86

Late-Life Presentation of Choreiform Movements in a Patient With Memory Impairment

Poster Presenter: Ryan Rajaram

Co-Author: Kasia G. Rothenberg, M.D.

SUMMARY:

Background: Chorea, a hyperkinetic movement disorder, is characterized by involuntary movements in the trunk, face or limbs that has a dance-like appearance. There are many causes of adult-onset chorea, most commonly genetic etiology seen in the Huntington's disease. Chorea seems to be a relatively common post-stroke movement disorder, particularly after an event disturbing the basal ganglia circuit. **Case:** We report a case of a 78-year-old woman who initially presented to clinic with subjective memory complaints. The patient

endorsed a two-year history of memory impairment that had been progressively worsening, having difficulties remembering names and past events, and misplacing items. She also reported that, starting a year earlier, she began to notice asymmetric involuntary movements, described as an inability to sit still and unsteady gait with multiple falls. **Results:** On physical examination, the patient appeared with evident asymmetric choreiform movements in her trunk and limbs. She also exhibited wide-based gait. The remainder of the neurological and physical exam was unremarkable. Screening cognitive testing suggested mild cognitive impairment. MRI indicated moderate small vessel ischemia in white matter regions, a remote basal ganglia infarct, and with moderate cortical volume loss. Neuropsychological testing indicated significant frontal-subcortical deficits, deficits observed in multiple domains, consistent with chronic cerebrovascular disease. Bloodwork was mostly within normal limits; cell blood count was negative for acanthocytes. Genetic testing was also negative for Huntington's disease.

Discussion: It remains unclear if the choreiform movements and the cognitive decline can be blamed exclusively on chronic microvascular changes and the remote lesion to the basal ganglion. Chorea typically appears immediately after a stroke, where a majority of patients saw complete resolution of symptoms after one month. Mechanisms underlying the pathogenesis of cerebrovascular chorea have not been fully characterized; disruptions in the cross-talk between the inhibitory and excitatory circuits resulting from vascular insult are proposed to be the underlying cause. The GABA-ergic and dopaminergic systems play key roles in post-stroke chorea.

Conclusion: We present a case of a patient with cognitive impairment for the last two years along with choreiform movements beginning one year earlier. Brain imaging indicated a remote infarct in basal ganglia, although further workup is warranted to determine if there is a more serious cause of this movement disorder and global cognitive decline.

No. 87

Trump-Induced Psychosis: A Case Report on the Development of Late-Onset Psychosis Within the Context of a Heated Sociopolitical Environment

Poster Presenter: Ahmad Umair Janjua

Co-Authors: Aamani Chava, M.D., Sameerah Akhtar,

M.D., Asghar Hossain

SUMMARY:

A late onset of schizophrenia is considered rare and can often be confused with a multitude of other differential diagnoses that should be first ruled out. We present a case of 74-year-old Caucasian male with no prior psychiatric history who, approximately three months after he ended a 10-year relationship with his significant other, began to experience non-command type auditory hallucinations of nonspecific, multiple, unfamiliar voices threatening to kill him, steal his belongings and steal his "IBM stocks." The patient also reported persecutory-type delusions that people were watching him and stated "Donald Trump sent his goons to get me out of my home because he wants the building." He believed "there is a fight between two branches of the mafia and I just got in the middle." One month later, the patient reported hearing voices outside his apartment and believed that a smoke bomb was about to be detonated. He subsequently climbed out of his first-floor apartment window and fell and fractured his left femur. The patient was admitted and placed on olanzapine at the surgical facility, where he was treated but was reportedly noncompliant and began exhibiting further psychotic symptoms after discharge. Approximately two weeks later, the patient had similar auditory hallucinations of voices threatening to enter his apartment; he called his niece expressing his fear, and she called authorities. Screeners found the patient in his home barricaded behind six chairs stating "they will hurt me if they find me." He was brought to the ED for further evaluation and reported symptoms of excessive worry, irritability and restlessness, as well as decreased sleep, appetite and energy. The patient manages all activities of daily living and instrumental activities of daily living. Admission brain CT exhibited moderate enlarged lateral and third ventricles. The patient was admitted to an inpatient unit and started on risperidone 0.5mg in the morning and 2mg at night. He initially tried to hide in his room; however, over the course of a few days, his delusions slowly improved, and the patient was less paranoid and more visible on the unit. In this poster, we review the differential diagnosis involved for late-onset psychosis and delve into how political stressors can be a trigger for psychotic themes.

No. 88**Catatonia in a Patient With No Previous Psychiatric History**

Poster Presenter: Sajeeb Adhikary, M.D.

SUMMARY:

The patient is a 44-year-old married, employed white male with recent history of depression who presented from home after not being responsive to verbal stimuli. He was acting strangely at home for the past few months, and that morning, he was pacing around and speaking nonsensically to himself. He fell asleep shortly after and could not be woken up by his wife, so paramedics were called. He had stable vitals and spontaneous breathing. In the ED, he was given 2mg of lorazepam for possible seizure and shortly after became responsive during physical examination. He was admitted to the medical floor for further evaluation. All his labs came back negative in terms of electrolyte imbalance or infection. Radiologic studies came back negative as well for any pulmonary or abdominal processes. The following morning, the patient had acute mental status change, and rapid response was called due to again not being responsive to verbal or painful stimuli. He opened his eyes upon sternal rub but did not communicate or grimace. EEG was ordered as well as MRI, along with neurology consult. EEG did not show any acute seizures or background slowing. MRI did not show any acute infarct or mass effect. The neurologist did not find any neurological causes for his behavior or change and believed he was malingering, so psychiatry was finally consulted. The patient had a recent position change at Ford nine months prior, and his daughter was diagnosed with OCD. Due to this stress, his PCP was concerned about depression and started him on venlafaxine, zolpidem, amitriptyline, and buspirone; however, the patient worsened. He started becoming forgetful, was pacing around the house and sleeping very little. He made some statements to his wife about cheating on her, though there was no evidence to support this, and he did not recall this when he was more coherent. At home, the patient started taking his wife's alprazolam. We discussed with the primary team to hold any antipsychotics and transfer him to the mental health unit once stable and other medical causes were ruled out. He

agreed to voluntary psychiatric hospitalization for further evaluation of depression and to rule out bipolar disorder with catatonia. On the unit, he received lorazepam four times a day, and venlafaxine was restarted and further titrated. Quetiapine was added at bedtime to help sleep and augment antidepressant therapy. The patient improved over the course of a week and was discharged home with a plan to attend a partial hospitalization program. Catatonia can present in a myriad of ways and can easily be mistaken for other disorders. It has many causes including metabolic, systemic, toxic, neurologic, and psychiatric factors. It is important to do a full medical workup to rule out all medical causes, though it is also important to keep a keen eye out for such a rare syndrome. Being that the patient often appears unresponsive with acute mental status change, seizure disorder and toxic agents should not be overlooked.

No. 89**Measurement-Based Treatment for Residual Symptoms Using Depression Residual Symptom Scale: Korean Validation of Depression Residual Symptom Scale**

Poster Presenter: Sol A. Park

Co-Authors: Young-Hoon Ko, Sang-Won Jeon

SUMMARY:

Background: Residual depressive symptoms are related to more severe and chronic course and a higher risk of relapse and functional impairment. The objectives of this study are to validate and investigate psychometric properties of the Korean version of the Depression Residual Symptom Scale. **Methods:** 203 outpatients with a major depressive episode or a lifetime major depressive episode based on *DSM-IV* criteria were enrolled and assessed by the Korean Depression Residual Symptom Scale (KDRSS), Hamilton Depression Rating Scale-24 and Montgomery-Åsberg Depression Rating Scale to examine cross-validity. We explored validity and reliability of the KDRSS as follows: internal consistency reliability, concurrent validity, temporal stability, factorial validity, and discriminative validity. **Results:** Internal consistency (Cronbach's alpha coefficient 0.961), concurrent validity (Montgomery-Åsberg Depression Rating Scale: $r=0.731$, $p<0.01$; Hamilton Depression Rating Scale-24: $r=0.663$,

$p < 0.01$) and temporal stability ($r = 0.726$, $p < 0.01$) of the KDRSS were all excellent. The KDRSS showed a good discriminative validity by using Montgomery-Åsberg Depression Rating Scale. The KDRSS consists of one-factor structure accounting for 63.8% of the total variance. However, item 14 showed negative corrected item-total correlation (-0.249) and increased Cronbach's alpha coefficient (0.967) after its deletion. Lack of energy was the most prevalent residual symptom after full remission of depression; some residual symptoms such as feelings of vulnerability, memory impairment, lassitude, loss of pleasure, and confidence showed a significant improvement in the full-remission group. However, most residual symptoms in the KDRSS, other than sadness and anhedonia, persisted in mild severity after four weeks of treatment. **Discussion:** The KDRSS is a useful instrument sensitive enough to measure residual depressive symptom. Since some residual symptoms are persistent even in full remitters, treatment in these patients should focus on specific residual symptoms such as lack of energy, psychomotor retardation and anxiety.

No. 90

Safety and Tolerability of Antidepressant Cotreatment in Acute Major Depressive Disorder: A Systematic Review and Exploratory Meta-Analysis

Poster Presenter: Dinesh Sangroula, M.D.

Co-Authors: Britta Galling, Amat Calsina Ferrer, Christoph U. Correll, M.D.

SUMMARY:

Background: Although pharmacological interventions are effective for major depressive disorder (MDD), response rates remain suboptimal, with 25–50% of patients having only an insufficient response to the initial antidepressant (AD) treatment. One management option for MDD patients that is recommended in treatment guidelines and frequently employed in clinical practice is cotreatment with a second antidepressant. However, despite the relatively common use of AD+AD cotreatment in MDD, evidence for the efficacy advantages of this strategy is slim, and concerns about an increased adverse effect (AE) burden have been raised. To aid a comprehensive risk-benefit analysis of AD+AD cotreatment compared to AD monotherapy through

assessing its short- and long-term tolerability in patients with MDD, we conducted a systematic review and meta-analysis of the frequency and severity of AEs associated with AD+AD cotreatment.

Methods: A systematic PubMed/MEDLINE/PsycINFO/Embase literature search was conducted from database inception until June 1, 2015, without language restrictions for randomized trials in 20 or more adults with MDD reporting the frequency or severity of AEs in patients randomized to either AD+AD cotreatment or AD monotherapy. Random effects meta-analysis of coprimary outcomes (intolerability related discontinuation and proportion of patients with at least one AE) and secondary outcomes (incidence and severity of any specific AEs) were analyzed. **Results:** Meta-analyzing 23 studies ($N = 2435$, duration = 6.6 weeks), AD+AD cotreatment and AD monotherapy were similar regarding intolerability related discontinuation (risk ratio [RR] = 1.38, 95% confidence interval [CI] [0.89, 1.10], $p = 0.80$) and frequency of at least one AE (RR = 1.19, 95% CI [0.95, 1.49], $p = 0.14$). Nevertheless, AD+AD cotreatment was associated with significantly greater burden regarding four out of 25 AEs (tremor: RR = 1.55, 95% CI [1.01, 2.38], $p = 0.044$; sweating: RR = 1.95, 95% CI [1.13, 3.38], $p = 0.017$; at least seven percent weight gain: RR = 3.15, 95% CI [1.34, 7.41], $p = 0.009$; and weight gain: standardized mean difference (SMD) = 1.03, 95% CI [0.27, 1.79], $p = 0.008$), but not more central nervous system-, gastrointestinal-, sexual-, or alertness-related AEs. However, 11 of 25 AEs (44.0%) were reported in only one or two studies. Adding noradrenergic and specific serotonergic antidepressants (NaSSA) or tricyclic antidepressants (TCA) to selective serotonin reuptake inhibitors (SSRIs) was especially associated with more AEs. **Conclusion:** Frequency and severity of global and specific AEs are insufficiently and incompletely assessed or reported in the available randomized controlled studies. The potential for increased AEs with AD+AD cotreatment needs to be considered vis-a-vis unclear efficacy benefits of this strategy. In particular, NaSSAs and TCAs should be added to SSRIs only with caution. Clearly, more data on side effect burden of AD+AD cotreatment are needed, and such data need to be complemented by definitive information about the efficacy of this frequently employed clinical strategy.

No. 91

Inflammatory Markers Contributing to Depression

Poster Presenter: Ruma Mian, M.D.

SUMMARY:

Background: Though it is commonly understood that depression is a mood disorder caused by changes in brain circuitry, it is not known the extent to which various genetic and environmental variables contribute to its expression in patients.

Inflammation is the immune system's natural response to fight infection or disease, which the body often uses to protect itself in situations of "flight or fight." However, too much inflammation, as found in inflammatory conditions, can lead to depression by creating oxidative and nitrosative stress on neurons. Robust data have been published regarding the role of the inflammatory response in depression through biomarkers such as cytokines, IL-6, IL-8, C-reactive proteins, and tumor necrosis factors. These markers have been shown to enter the brain and alter pathophysiological domains that are involved in causing depression, including neurotransmitter metabolism, neuroendocrine function and neural plasticity. Current therapies for depression often fail to alleviate patient symptoms, leading providers to frequently explore modifications to treatment regimens. Further study of the effects of the immune inflammatory response is still needed to refine an understanding of its therapeutic potential as a target in the context of the psychopathology of depression in patients with inflammatory disease. **Objective:** Conduct an extensive literature review of studies examining the role of inflammatory markers in depression. Further research may lead to discoveries of immune system dysregulation in patients with depression based on specific risk factors. **Conclusion:** Increased activity of inflammatory markers such as cytokines, IL-6 and tumor necrosis factor α were found in patients with depression through extensive data. A study also showed that only patients with specific levels of inflammatory markers were able to benefit from immune-based drugs. Further study, however, is still needed to better understand the role of the immune system in the disease. Treatment modalities geared toward controlling specific inflammatory processes may generate new discoveries contributing to novel

therapies for patients suffering from depression or other psychiatric illnesses.

No. 92

Xerostomia Causing Dental Extractions on a Patient Treated With Sertraline

Poster Presenter: Natasha Clark, M.D.

Co-Authors: Avjola Hoxha, M.D., Mahdi Razafsha, M.D.

SUMMARY:

Saliva plays an important role in maintaining healthy function of the oral cavity through lubrication, antimicrobial actions, buffering, and debridement of the oral cavity. Xerostomia is considered a subjective feeling of oral dryness due to hypofunctioning of the salivary glands. Xerostomia is often unrecognized and untreated, but it can significantly affect oral health and patient's quality of life. Xerostomia can result in major dental problems including cavities, periodontal disease and inflammatory conditions. Antidepressants are a common cause of drug-induced xerostomia. Tricyclic antidepressants (TCA) are notorious for causing xerostomia by inhibiting the cholinergic signals in the salivary gland. Most selective serotonin reuptake inhibitors (SSRIs) do not have major anticholinergic activities, yet can potentially cause significant dry mouth through other mechanisms. In this poster, we present a case of a 56-year-old female with a history of treatment-resistant major depressive disorder who was prescribed sertraline (total of 200mg daily). During three years of treatment with sertraline, the patient developed significant dry mouth. She tried several over-the-counter remedies for dry mouth, including artificial saliva, which did not help. She could not tolerate a trial of pilocarpine due to heart palpitations. The patient's dry mouth continued to be a significant issue causing many major dental cavities and requiring extraction of several teeth. The patient never had any history of xerostomia prior to starting sertraline, and despite changes in other medications, she continued to struggle with xerostomia felt to be related to sertraline.

No. 93

Depression in the Setting of Chronic Physical Abuse and Domestic Violence

Poster Presenter: Marie F. Rodriguez, M.D.

Co-Authors: Carolina Retamero, M.D., Benjamin Nicholas

SUMMARY:

Background: Domestic violence is more prevalent in our society than one assumes. In psychiatry, we encounter patients who have a significant history of abuse and domestic violence, which more often than not contributes to their symptoms when they present to the hospital. Posttraumatic stress disorder is often associated with abuse, but other significant manifestations of these acts include major depression and psychosis. **Case:** We describe the case of a 56-year-old female who was brought in under an involuntary mental health commitment by the ED following repair of a stab wound. The patient admitted to suicidal ideation along with homicidal ideation toward her partner on and off for 14 years while being treated for the wound. She stated she was allegedly stabbed by her boyfriend and had been endorsing increasing suicidal and homicidal ideations since the incident. The patient stated that her boyfriend had been chronically abusing her since their reconciliation four months prior and was beating her daily. She also admitted to a history of recurrent suicide attempts, PTSD and depression. When asked about specific plans for the suicidal ideation and homicidal ideation, the patient admitted to plan and intent to overdose on pills and murder her boyfriend via hacksaw. When questioned in regards to criteria for major depressive disorder, the patient admitted to decreased sleep, anhedonia, guilt, decreased energy, psychomotor retardation, depressed mood, and suicidal ideation. In addition, the patient admitted to psychosis, with auditory hallucinations asking her "why didn't you kill yourself?" **Discussion:** Our patient, after several years of enduring physical and sexual abuse, was at a risk for harm to herself and harm to others as a result of her abuse. The effects of the long-term abuse had severely damaged her judgment, rational decision making and insight. Her depression had culminated in not only wanted to end her abuser's life for retaliation, but also her own as a form of guilt for accepting the abuse for so long. **Conclusion:** Physical abuse, sexual abuse and domestic violence can have long-lasting effects on the mental health of the persons under abuse. Physicians should routinely screen for domestic

abuse, physical abuse and sexual abuse when screening for depression because they can often go hand in hand when assessing the mental health of a patient.

No. 94

Improvement in Anxiety as a Predictor for Depression Response in Patients Undergoing ECT

Poster Presenter: Sara VanBronkhorst, M.D.

Co-Authors: Darci Evans-Tracey, D.O., William Sanders, Ali A. Saleem, M.D., Evonne Edwards, Eric D. Achtyes, M.D., M.S., Louis Nykamp

SUMMARY:

Objective: Determine the response rates for depression with electroconvulsive therapy (ECT) and examine the relationship between improvement in anxiety and improvement in depression in patients with a primary diagnosis of a depressive disorder. **Methods:** This retrospective chart review identified 35 patients with depressive disorders treated with an acute series of ECT at Pine Rest ECT Clinic from March 2014 to March 2015. An analysis of ECT response rates was conducted based on data from the Hamilton Rating Scale for Depression-17 (HAMD-17), Patient Health Questionnaire-9 (PHQ-9), and Generalized Anxiety Disorder 7-Item (GAD-7). Chi-squared goodness-of-fit tests were utilized to compare response rates from this sample to previously published rates. Logistic regression analyses and Pearson correlation coefficients were utilized to determine predictors of HAMD-17 and PHQ-9 response and correlations between changes in scores on the standardized measures. **Results:** Of the 35 subjects, 22 (62.9%) were female and 13 (37.1%) were male. The mean age of the patients was 52.9 years (SD=12.9). The mean number of treatments received was 9.3 (SD=3.0). Twenty-four (68.6%) patients started their treatment on an inpatient psychiatric unit, whereas 11 (31.4%) patients were outpatient. A majority, 22 (62.9%), started with bilateral electrode placement, and 13 (37.1%) started with right unilateral electrode placement. The overall depression response rates based on the HAMD-17 and PHQ-9 were 57.1% and 54.3%, respectively, which did not differ significantly from previous results for patients with treatment-resistant depression ($p>0.364$). GAD-7 response rates were 54.29%, which did not differ significantly

from expected rates of 55% for treatment-resistant depression ($\chi^2 [1, N=35]=0.007, p=0.932$). Logistic regression analyses found that GAD-7 change scores predicted both PHQ-9 ($p=0.007$) and HAMD-17 ($p=0.028$) responses. GAD-7 response rates and PHQ-9 response rates were significantly related ($\chi^2 [1, N=35]=14.998, p<0.001$). Of patients who exhibited a response on the PHQ-9, 84.2% also exhibited a response on the GAD-7. This relationship may be partially accounted for by known correlations between self-reported anxiety and depression. However, correlations between initial GAD-7 and PHQ-9 scores ($r=0.299, p=0.081$) were not statistically significant and were of a lesser magnitude than those between GAD-7 change scores and PHQ-9 scores ($r=0.744, p<0.001$), perhaps suggesting a relationship between improvements in treatment of anxiety and depression. **Conclusion:** Change in anxiety symptoms correlated with, and may predict, response in depressive symptoms in patients receiving ECT.

No. 95

Binswanger Disease Presenting as Severe Depression

Poster Presenter: Deepa Anand, M.D.

Co-Authors: Caesa Nagpal, M.D., Antonio L. Teixeira

SUMMARY:

Background: Binswanger disease (BD) is a form of vascular dementia resulting from neurovascular unit disruption secondary to hypertensive hyalinosis of cerebral small vessels, with extensive white matter lesions and subcortical ischemia. Patients with BD classically present with focal neurological deficits, memory loss and gait disorders. In a few cases, depressive disorders may be the presenting symptom. We report a case of a 54-year-old female presenting with depression and acute suicidal ideations diagnosed with BD. **Case:** Ms. V., a 54-year-old Hispanic female with a past history of bipolar disorder, presented to the emergency department with acute suicidal ideations and depression and was then transferred to the acute psychiatric unit for further management. The current episode of depression was severe and different compared to her prior history of mild to moderate depressive episodes. She reported extreme guilt for not taking proper care of her daughter during her childhood.

Her appetite was normal, but she had trouble sleeping. She reported a past history of manic episodes, but denied any current symptoms of mania. The patient suffered from urinary incontinence and constant forgetfulness for the last two years. Past medical history was unremarkable except for controlled hypertension. Clinical examination revealed positive Babinski sign, positive glabellar tap sign, hyperreflexia, and shuffling gait. MOCA score was 17 out of 30. She was admitted with the diagnosis of bipolar disorder, depressive type. Due to her neurological symptoms, a hypothesis diagnosis of normal pressure hydrocephalus was made. Laboratory results and urine analysis were within normal limits. Brain MRI was ordered, which revealed multiple T2 hyperintensities (Fazekas grade 3) in periventricular and deep white matter, white matter atrophy, chronic microvascular ischemic changes, and remote lacunar infarcts involving bilateral corona radiata. Clinical history, physical findings and imaging findings were consistent with the diagnosis of Binswanger disease. The patient was treated with lisinopril 20mg by mouth daily, hydrochlorothiazide 25mg by mouth daily, quetiapine 100mg by mouth at bedtime, oxybutynin 2.5mg twice daily, and antiplatelet therapy with aspirin 81mg daily for stroke prevention. **Discussion:** Although patients with Binswanger disease classically present with focal neurological deficits, memory loss and gait disorders, it is important to realize that, in certain cases, depression may be the most debilitating presenting symptom, which may lead them to seek treatment. Psychiatrists need to recognize such atypical presentations. Treatment would require a multidisciplinary approach, including optimal control of the hypertension along with antidepressant therapy. **Conclusion:** Psychiatrists need to recognize atypical presentations of depression and require a multidisciplinary approach for diagnosis and treatment.

No. 96

Subthreshold Depression (Sub D) and Its Association With Cardiovascular Risk: A Systemic Review

Poster Presenter: Muhammad Navaid Iqbal, M.D.

Co-Authors: Pooja Mehta, Asghar Hossain

SUMMARY:

Cardiovascular disease (CVD) is a widespread condition associated with significant morbidity, mortality and cost, so much so that it is the leading cause of death in the world. With increasing prevalence, it has been found that an earlier diagnosis can reduce the rate of hospitalization. One of the factors associated with CVD is depression—the two have a relationship that is considered to be bidirectional. Rather than a sequelae of CVD, depression is considered an independent risk factor in the pathophysiological progression of CVD. Those suffering from cardiovascular disease as well as major depressive disorder have greater morbidity and mortality. Sub D is a form of affective disorder that shares similar characteristics to major depressive disorders. We should consider sub D a variant of depressive disorder, and health care providers need to be taught to identify such patients in order to treat them appropriately both pharmacologically and nonpharmacologically. Our literature review identified four prospective and cross-sectional studies citing prevalence data for sub D in patients with CVD. The findings indicate that depressive symptoms may develop following admission for myocardial infarction and may persist upon discharge. The goal of this literature review is to consider the question of association of sub D with CVD risk. Models that currently categorize mental disorders underestimate sub D by not taking into account its impact on the individual. Although sub D has a smaller impact on society compared to major depression, its association with cardiovascular diseases is just as significant.

No. 97**WITHDRAWN****No. 98****Retinitis Pigmentosa and Depression: A Casual Relation or Does a Correlation Exist?**

Poster Presenter: Juan S. Pimentel, M.D.

Co-Authors: Chirag Patel, Anni Al-Najjar, M.D., Maria E. Saiz, M.D., Asghar Hossain

SUMMARY:

Retinitis pigmentosa (RP) is a group of rare genetic retinal diseases that induce photoreceptor (rods and cones) degeneration, resulting in advanced visual

loss. The purpose of this case report is to assess the psychological impact and the potential relationship between depression and visual impairment in patients with RP. A 19-year-old Asian-American male with no past psychiatric history was admitted involuntarily due to worsening depression and suicidal ideation. He was diagnosed with RP a few months ago due to worsening vision, and since then, he has been experiencing worsening depressive episodes. Mental status examination showed poor judgement, minimal insight, and anxious and depressed mood. He was subsequently started on bupropion 150mg, and his condition improved. Laboratory examination was within normal limits. One study included 34 patients with RP and 35 age- and sex-matched controls. All participants underwent a thorough ophthalmic examination, including best-corrected visual acuity (BCVA), slit-lamp biomicroscopy, and dilated funduscopy, and they completed the Zung Depression Inventory questionnaire and the Patient Health Questionnaire–9 (PHQ-9). There was a statistically significant difference in PHQ-9 and Zung scores between patients with RP and controls. Depression in people with RP is frequent. The prevalence has been estimated at 25.7% (while in the general population, it amounts to 10%). Nemshick et al. showed that the period of greatest crisis or stress occurs during or immediately following diagnosis, and López-Justicia et al. recommended evaluating the depression variable just after the diagnosis of the disease and again over time. The conclusion and learning objective from this is that it is very important to screen all patients with RP for depression and treat them subsequently. Also, further research is warranted to know if depression does exist with RP or if RP can lead to depression.

No. 99**State of Minnesota v. Jerry Expose Jr.: Is Duty to Warn Compatible With Privilege?**

Poster Presenter: Lyuba Megits

Co-Author: Chinmoy Gulrajani

SUMMARY:

The purpose of physician-patient privilege is to encourage patients' full disclosure of information, which enables medical providers to extend the best medical care possible; the principal underlying

privilege is that a patient's fear of an unwarranted, embarrassing and detrimental disclosure in court of information given to his doctor would deter the patient from freely disclosing his symptoms to the detriment of his health. Under the doctrine of privilege, a patient has the privilege to refuse to disclose, and to prevent another from disclosing, any confidential communication between the clinician and the patient. However, if a patient makes threats against a clearly identified potential victim, mental health clinicians have a duty to warn that individual or to contact the law enforcement agency closest to the potential victim. Once the clinician communicates the threat, his or her duty to warn has been discharged. The question that remains, then, is can the content of the disclosure be used against the patient in a court of law, given that it is privileged communication? In other words, is there a "threats exception" to privilege? This question was recently taken up in Minnesota by the Supreme Court of Minnesota in *State v. Jerry Expose Jr.* (872 N.W. 2d 252, 2015) and is the subject of discussion in this poster that offers a succinct distinction between the right to privacy of the patient versus the duties and limits that guide disclosures made by the clinician.

No. 100

Abuse Histories and Rates of Treatment Completion in a Population of Male Juvenile Sex Offenders

Poster Presenter: John Casey

SUMMARY:

Sexual offenses are often considered to be more severe than other types of offenses, with additional policies and laws that protect victims and further punish offenders. While a substantial amount of literature regarding the victims of these offenses exists, there has been a recent focus on examining the perpetrators of abuse and identifying risk factors that could allow for early intervention. Childhood trauma is a serious and prevalent issue that increases a person's risk for later mental health disorders, including antisocial personality disorder, which is a risk factor for both sexual and non-sexual offending. Some studies have examined a link between exposure to trauma and later perpetration of violence and criminal behavior, both as juveniles and into adulthood. A recent study found that adult

male sex offenders have a significantly higher rate of adverse childhood experiences than the general population, but to date there is little evidence on whether juvenile sex offenders have similar histories. Our study's objective was to determine whether a population of juvenile sex offenders would have increased rates of personal abuse victimization and exposure to domestic violence and examine completion rates for a treatment program for juvenile sexual offending. This retrospective chart review investigated the hypotheses that an increased incidence of trauma history existed in this juvenile sex offender population and also that among those who participated in treatment, patients with trauma histories would be less likely to complete the program. In order to test these hypotheses, we performed logistical regression analyses on demographic data, psychosocial histories, psychological and cognitive testing, and speech and language evaluations from charts of 243 male juvenile patients who participated in an inpatient sex offender treatment program at the Arkansas State Hospital.

No. 101

Juvenile Sex Offenders: A Study With Emphasis on Treatment Completion, Personality Factors and Substance Use

Poster Presenter: Martin R. Watts, M.D., Ph.D.

SUMMARY:

Juveniles account for nearly one-fifth of all arrests for rape, and over one-third of sexual offenders who offend against minors are juveniles. However, in spite of the magnitude of the problem of juvenile sexual offending, factors that may either amplify or attenuate the risk of offending are not yet fully elucidated. Juvenile sex offenders may have a higher rate of psychopathology compared to both nonsexual offenders and the general population, although the specific types of psychopathology most correlated with juvenile sex offending are inconsistent. While data correlating personality pathology and juvenile sex offense vary, evidence suggests that juvenile sexual and nonsexual offenders have similar degrees of antisocial pathology, and nonsexual offenders may even exhibit more pathological personality traits; however, minors engaging in more antisocial

behaviors likely have higher sexual and nonsexual re-offense rates. This suggests that personality pathology indicators may be helpful for risk assessment. Juvenile sex offenders also seem less likely than nonsexual offending peers to use drugs and alcohol, but it is unclear whether juvenile sex offenders are more or less likely than the general population to use substances. While evidence suggests that specialized treatment is effective for improving function and reducing recidivism of both sexual and non-sexual offenses, little systematic research has been performed investigating factors associated with treatment completion versus dropout. This study examines the relationship between personality pathology, substance use history and juvenile sexual offending and the impact of these factors on treatment completion rates. A retrospective chart review of 242 male juvenile inpatients in a sex offender treatment program explores the hypotheses that juvenile sex offenders have higher incidences of personality pathologies and substance use disorders, which correlates with reduced program completion rates.

No. 102

A Puff of Madness: Bouffee Delirante in an Elderly Male

Poster Presenter: John Knox

Co-Authors: Harkirat Kaur, M.S., Geetika Verma, M.D., Sanjay Advani

SUMMARY:

Background: Culture-bound syndrome is a term used to describe the uniqueness of some syndromes in specific cultures. Bouffee delirante has been considered an acute transient psychotic disorder according to the ICD-10. It is characterized by acute-onset psychosis, and presentation tends to be mixed, ranging from symptoms of confusion, anxiety, mood symptoms, delusions, and hallucinations. These symptoms vary from day to day and hour to hour. Bouffee delirante generally occurs in those without any prior psychiatric history, though they may have had prior episodes. Sufferers remit relatively quickly, and though they may have relapses, there are significant intervals. **Objective:** Highlight a rare case of a patient with bouffee delirante and increase awareness of the challenges differentiating a specific cultural-bound syndrome

from other more psychotic disorders. **Methods:** We present a case report of a patient with bouffee delirante. **Results:** The patient was diagnosed with bouffee delirante where schizophrenia, mania and other psychotic illnesses have been ruled out and physiological causes are unknown. **Discussion:** The current case is of a 63-year-old African-American male admitted with mutism, psychosis, paranoia, and paranoid persecutory thoughts. He had no psychiatric history, and his wife stated that he had become unable to distinguish reality from recurrent delusional experiences. He was fearful that everyone was out to steal “special powers” he received from God, leaving him unable to sleep for more than 30 minutes per day. His paranoia, fear and restlessness would extend toward everyone. He developed mutism, and, after a week without remission, his wife called the police and brought him to the hospital for evaluation. Upon admission and after getting medically cleared, he began to cry and bark upon a request from admissions for a photograph. He was not suicidal or homicidal. After being prescribed anti-anxiety, antipsychotic and sleeping medications, his sleep improved. Often, it seemed as if he was responding to internal stimuli, as he would speak gibberish and not acknowledge that others were talking to him. Haldol and Depakote were prescribed for further stabilization, and he slowly became more reality-based. Schizophrenia was ruled out because of its quick onset, his advanced age and the brevity of his episode. The patient was discharged after conclusion of delusions. **Conclusion:** We conclude that management of patients with a diagnosis of psychosis and mania displaying the symptoms of bouffee delirante does not differ from patients with mania.

No. 103

Treatment Over Objection: Suffolk County Case Series and Epidemiology

Poster Presenter: Nicholas J. Genova, M.D.

Co-Authors: Lama Bazzi, M.D., Constantine Ioannou, M.D.

SUMMARY:

Before 1986, New York State’s involuntarily committed psychiatric patients were assumed to lack the capacity to participate in mental health treatment decisions and were medicated over their

objection without due process. The Court of Appeals of New York, in *Rivers v. Katz*, held that committed patients were entitled to a court hearing prior to involuntary medication. In *Rivers* hearings, a judge assesses patients' capacity to make medical decisions and decides if a treatment plan is narrowly tailored and appropriate. This process safeguards patient liberties while weighing the patients' autonomy against the potential benefits of treatment. Unfortunately, New York's treatment over objection (TOO) process is inefficient and costly and has the potential for negative outcomes. Our retrospective Suffolk County case series details deidentified cases of psychotic psychiatric patients who were involuntarily hospitalized and subsequently discharged without pursuing TOO. Due to medication nonadherence and psychiatric decompensation, they were involuntarily readmitted to the psychiatric unit of Stony Brook University Hospital (SBUH). These second hospitalizations involved lengthy treatment impasses while TOO was obtained. With the help of the Mental Hygiene Legal Services of Suffolk County, we obtained deidentified data detailing which hospitals pursued TOO in Suffolk County. We aimed to identify potential barriers to TOO implementation and the possible effect such barriers have on patient outcomes. Hospitals in Suffolk County differed greatly in their pursuit of TOO. Although private and not-for-profit hospitals in the community have a larger number of psychiatric beds, they pursue TOO significantly less than state hospitals do. In 2014, 20% of all TOO applications were filed by Pilgrim Psychiatric Center (PPC), a state hospital, and SBUH filed 18%. Although the other eight hospitals have a larger total number of psychiatric beds than the former two facilities combined, all eight filed only 62% of 2014 petitions. In 2015, PPC filed 20% of all petitions and SBUH filed 23%, leaving the remaining 57% to be filed by the other eight facilities. We hypothesize that the financial burden TOO places on private and not-for-profit facilities, both because of legal fees and insurance reimbursement issues, is too great to bear. This leads to pressure on treatment teams to arrange for discharge to the community rather than to pursue TOO. Prior research has revealed that *Rivers* hearings are unlikely to be adjudicated in patients' favor and that judges are unlikely to modify the treatment plan proposed by the hospital. More

research is needed into the effectiveness and reliability of TOO procedures, such that they do not serve to rubber stamp hospital treatment plans seeking to medicate patients against their will, but also safeguard patients' right to refuse treatment.

No. 104

Suicide in Prisoners in Solitary Confinement

Poster Presenter: Kelly E. Uwoghiren, M.D.

Co-Authors: Jessica S. Bayner, M.D., Madia Majeed, Asghar Hossain

SUMMARY:

Background: Solitary confinement plays a major role in suicide deaths within the prison population. It is important to understand the triggers and negative effects causing increased mortality rates among prisoners placed in solitary confinement and work on improving the quality of care given to managing such acute situations more efficiently. **Objective:** Assess the effects of being in solitary confinement on prisoners and their risk of suicidal behaviors.

Discussion: Solitary confinement is a form of punishment in which an inmate is placed in a single cell with isolation from other human contact except for the prison staff. Solitary confinement is used after an inmate gains an infraction during his prison sentence, which in most cases has no correlation with their prison sentence, depending on its severity. It is a way that prison staff invoke control and order to make sure the rules and regulations are being enforced. Two major reasons for placing prisoners in confinement are for disciplinary purposes and suicidal behaviors. It is studied that most prisoners placed in confinement suffer from some degree of mental illness and, as a precaution, are placed in isolation for their own well-being. Negative effects of confining suicidal prisoners are being observed with an increased risk of self-harm and suicide attempts. It is reported by the National Center of Institutions and Alternatives that about two out of three suicide deaths within the prison system occur in isolation. Almost 70% of prisoners who are found dead are present in "single rooms." Prisoners positive for suicidal ideations prefer to be in isolation to successfully complete their plans to end life with no interference from external factors. Though prisons are minimally monitored in solitary confinement, it may not be enough to impede a

suicide attempt. Some prisoners also use suicidal thoughts as a way of being placed in solitary confinement for their own safety. The focus is on the proper assessment and management of prisoners.

Conclusion: A strong link between solitary confinement and high suicide rates is being reported. Further research is needed to assess the factors contributing to the increased risk of suicide in confined prisoners and diminish the notion of self-harm in such confined settings.

No. 105

Correlating Childhood Abuse and Aggressive Behavior in Prisoners

Poster Presenter: Jessica S. Bayner, M.D.

Co-Authors: Kelly E. Uwoghiren, M.D., Madia Majeed, Asghar Hossain

SUMMARY:

Objective: Assess the association between childhood traumas as a cause of aggression using a sample population of prisoners. **Methods:** The study incorporates information gathered from prisoners located in Union County, NJ, as well as a literature review of the given topic. Surveys were randomly administered among an inmate population in order to gauge the extent to which participants were exposed to childhood trauma and their proclivities for aggression. Literature search was completed using PubMed and Google Scholar. **Discussion:** There has been an association between traumatic childhood experiences and aggressive behavioral patterns, especially noted in those who are incarcerated. Those who suffer physical, sexual and emotional abuse may develop maladaptive coping skills and negative patterns of behavior. It has been reported that one out of six inmates experienced trauma before the age of 18. The nature of the abuse, as well as the time period during which it occurred, were shown to reflect predicted psychopathological symptoms. Furthermore, a study conducted by Widom showed that there was a high degree of revictimization occurring with a positive history of child abuse. This study demonstrates the impact of childhood trauma in a prison population and its linkage with aggressive behavior.

No. 106

The Role of Religion in the Prison System

Poster Presenter: Jessica S. Bayner, M.D.

Lead Author: Kelly E. Uwoghiren, M.D.

Co-Authors: Kelly E. Uwoghiren, M.D., Madia Majeed, Asghar Hossain

SUMMARY:

Background: Religion had been known to play a key role in the prison system. It may be useful for providing a sense of community, which can also be a means to gain allies in a foreign and harsh environment. Consequently, it can be perceived as a way to develop protection within the institutional setting. Of course, it also provides opportunities to develop spiritually and offers solace for those who seek to transform their lives through repentance. Overall, religion can be considered a protective factor that allows inmates to cope with incarceration. **Objective:** Assess the role of religion in the lives of a given prison population and study the nature of conversion among inmates.

Discussion: The prison population is increasing yearly, along with the duration of incarceration for prisoners. Inmates who serve extended sentences find different ways to adapt to living in their institutional settings. Religion is highly practiced within prisons, which provides a setting that allows people to explore belief systems that they may not have been exposed to in the past. Specifically, there is a high rate of conversion to the Jewish, Christian and Muslim faiths. It is believed that inmates convert for several reasons. These include hoping to display “good behavior” in order to lessen one’s sentence for a given charge, feeling a sense of belonging and support from a religious group, and spiritual transformation as part of the road to redemption. Some prisoners use religion as a coping strategy to better manage the shame associated with being incarcerated. Others use religion as a way to assuage guilt associated with crimes committed. Religious practices within the prison system can be of great value, allowing prisoners to reinvent themselves with guidance, encouragement and motivation. Although the role of religion within the prison population is a vaguely researched and published topic, it demands more attention as it serves to educate the public about a prevalent issue.

No. 107

A Case of Takotsubo Cardiomyopathy Associated

With Colloid Cyst

Poster Presenter: James Clark Sherer

Co-Authors: Kalliopi Nissirios, Douglas J. Opler, M.D.

SUMMARY:

Background: The connection between psychiatric and neurological disorders and Takotsubo cardiomyopathy (TCM) has been well established. This is only the second case of colloid cyst-associated TCM reported. TCM involves left ventricular dysfunction preceded by emotional or physical triggers. It is marked by chest pain, dyspnea and elevated troponins without coronary artery blockage. Although widely known as having an emotional trigger, intracranial pathologies, including subarachnoid hemorrhage and hydrocephalus, are also associated with TCM. **Case:** A 37-year-old woman with migraines and anemia presented to the ED with headaches, dizziness, nausea, shortness of breath, polyuria, polydipsia, and erratic behaviors, including urinating on the floor. CT revealed an intracranial cyst obstructing the foramen of Monro and hydrocephalus. An external ventricular drain was placed. Hypotension, tachycardia and a left axis deviation on ECG then developed. Left ventricular ballooning and a reduced EF of 20% were seen on echocardiogram. While these are often hallmarks of myocardial infarction, cardiac catheterization showed no blockage or ischemia. TCM was diagnosed. Psychiatry was consulted to address the presumed psychological stressor, but no acute psychological stressors were elicited, although six months of financial and familial issues were revealed. She described daily panic attacks during this time. Supportive psychotherapy was advised. **Discussion:** While chronic psychological stress may have contributed to development of TCM, the cyst alone may have been sufficient. Colloid cysts may obstruct outflow of cerebrospinal fluid, leading to enlargement of the lateral ventricles and symptoms of increased intracranial pressure. The cyst acts as a ball valve at the foramen of Monro, leading to hydrocephalus. Acutely elevated intracranial pressure then leads to an increase in cerebral perfusion, hypertension and increased sympathorenal hyperactivity. This causes stimulation of cardiac reflex centers and release of catecholamines, ultimately resulting in development of TCM. **Conclusion:** Although widely known as

“broken heart syndrome,” TCM can have both emotional and neurological etiologies. Behavioral symptoms of hydrocephalus may be mistaken for psychiatric disorders. More research is needed in regards to the connection between TCM and neurological versus psychiatric causes.

No. 108

Neuropsychiatric Manifestations of Subacute Encephalopathy With Seizures in Alcoholics (SESA): A Report of Two Cases and a Literature Review

Poster Presenter: Deepika Sundararaj, M.D.

Co-Authors: Feier Liu, Rebecca Olufade, Walter J. Kilpatrick III

SUMMARY:

Background: Subacute encephalopathy with seizures in alcoholics (SESA) was first described by Niedermeyer, et al. in 1981 as a rare disease characterized by typical clinical and EEG characteristics in the setting of chronic alcoholism. The syndrome includes transient neurologic deficits, seizures and periodic lateralized epileptiform discharges (PLEDs). In the literature, there is a lack of description of the neuropsychiatric sequelae of this syndrome, for which we now introduce with two case reports. **Case:** Our first patient is a 54-year-old male who presented to the ED for status epilepticus and was intubated for airway protection. EEG showed right-sided PLEDs that were consistent with a diagnosis of SESA. After stabilization and extubation, he continued to have seizure activity outside of the withdrawal period. He was started on a regimen of Keppra and Vimpat. The patient also began to develop paranoid delusions and visual hallucinations that were originally seen after seizure activity; however, his psychotic symptoms continued for over a week after the last recorded seizure. He eventually began to exhibit impulsive behavior and increased agitation. He was treated with gabapentin and olanzapine and subsequently stabilized. Our second patient is a 54-year-old female who was admitted for recurrent seizures. She experienced worsening mood, concentration and memory since her last seizure six months ago. During this admission, she was briefly delirious and continued to experience worsening anxiety. Her VEEG over the course of four days persistently showed PLEDs, and her MRI showed hyperintensities in the left

hemisphere, both of which are consistent with SESA. We started her on gabapentin for its anxiolytic, antiepileptic and mood stabilizing effects. She has recovered well from this episode and has been symptom free for a month. **Discussion:** SESA is a unique and rare case for which discussions until now have pertained to its neurological characteristics. These two case reports demonstrate the presence of psychiatric sequelae. Case one presented with psychotic symptoms that were associated with right-sided PLEDs. Case two presented with depressive symptoms that were exacerbated by left-sided PLEDs. Both patients benefited from treatment with gabapentin due to its antiepileptic and anxiolytic properties. Psychiatrists need to recognize the neuropsychiatric symptoms associated with SESA in order to provide appropriate treatment.

No. 109

New-Onset Psychiatric Manifestations of Neurocysticercosis: Case Reports

Poster Presenter: Joe Hong

Co-Authors: Jooyeon Lee, M.D., M.H.S., Norma Dunn, Ronnie Swift

SUMMARY:

Background: Psychiatric manifestations of neurocysticercosis (NCC) have been reported in literatures. NCC is the most common human central nervous system (CNS) infection induced by the larval stage of the pork tapeworm *Taenia solium*, endemic to the developing countries of Asia, Africa, Latin America, and Central Europe. NCC is often characterized by nonspecific presentations in accordance with its location and parasite burden. Psychiatric symptoms have been reported, including depression, anxiety, mania, and psychosis. We report two cases of new-onset neuropsychiatric presentations in patients with neuroimaging evidence of brain parenchymal calcifications suggestive of cysticercosis infectious sequelae. **Case:** 1) A 35-year-old Mexican woman with no psychiatric or substance use history presented to the psychiatric emergency room with worsening depression and psychosis over five years. The patient reported seeing “dead people” and hearing voices telling her to harm herself and was unable to recall simple details such as who was caring for her children or her employment history. She exhibited no focal

neurologic deficits. Her routine laboratory tests, CBC, BMP, urinalysis, TSH, HbA1C, and LFTs were within normal limits. Her urine toxicology was negative for substances of abuse, and her EKG showed no acute changes. Her head CT (computed tomography) demonstrated a round 1mm calcification over the right frontoparietal lobe consistent with cysticercosis or granulomatous disease sequelae. 2) A 36-year-old male with no prior psychiatric disease or substance use presented to the clinic with an eight-month history of episodic dizziness characterized by vertigo, unsteady gait and two episodes of transient hand tremors and about a five-month history of intermittent feelings of impending doom. He also reported thoughts of hurting himself but no plan. He exhibited no focal neurologic deficits. His routine laboratories, including a TSH and HIV test, were normal. His EKG and 2-D echocardiogram were normal. A head CT scan demonstrated a punctate calcification in the right anteromedial thalamus attributed to prior granulomatous disease or cysticercosis. **Conclusion:** Both patients described above were from areas of Latin America where NCC is endemic. Neither patient had a prior psychiatric diagnosis. The above right frontoparietal lobe calcification (case 1) and CNS thalamic calcification (case 2) were most likely caused by NCC infection. Serologic testing was not performed, but a literature search suggested that negative serologies do not exclude the diagnosis in patients with suggestive neuroimaging findings and compatible clinical presentations. Our case reports highlight that neurocysticercosis must be considered as a differential diagnosis in patients from endemic regions with new onset of psychiatric symptoms.

No. 110

Keppra-Induced Psychosis: A Case Report and Review of Literature

Poster Presenter: Ankit Jain

SUMMARY:

Background: Levetiracetam (Keppra) is a second-generation antiepileptic drug. Levetiracetam is currently used in the treatment of partial, tonic-clonic and myoclonic seizures. Up to 13% of adult patients and 37% of pediatric patients have experienced mild neuropsychiatric symptoms. About one percent experienced serious symptoms

including hallucinations, suicidal ideations or other forms of psychosis after starting Keppra. **Methods:** We report a case of Keppra-induced psychosis. Previous cases were reviewed using PubMed and Medline. Search terms “Keppra” and “psychosis” were used. **CASE:** The patient is a 75-year-old woman who presented to our facility with a fall resulting in head trauma. She had a medical history of hypertension, diabetes mellitus, hyperlipidemia, sick sinus syndrome/pacemaker, gout, colon carcinoma, and hyperparathyroidism. CT-brain revealed an acute subdural hematoma measuring up to 9mm along the left parieto-temporal and occipital regions. The patient was initially admitted and managed on the surgical floor, where she was followed by neurosurgery, who recommended conservative management and starting therapy with prophylactic Keppra 500mg every 12 hours. After six days, she was transferred to the rehabilitation unit. On her tenth day of stay in the rehabilitation unit, she had a witnessed nonconvulsive seizure. EEG was obtained, which supported the diagnosis of focal epilepsy arising from the left hemisphere. The patient was immediately transferred to medicine floor. At this time, dose of Keppra was increased to 1g every 12 hours. On the following day, the patient was noted to stare into space, was religiously preoccupied and displayed crying spells with inappropriate affect. She exhibited poor concentration, was easily agitated and only intermittently answered questions. Her family at bedside confirmed no history of cognitive impairment or prior psychiatric illness. A diagnosis of suspected Keppra-induced psychosis was made. Keppra was discontinued, with the addition of Dilantin to the therapeutic levels. The patient showed consistent and gradual improvement with the return to her baseline mental status in next 12 days. **Discussion:** As per review of literature, early intervention is necessary. Patients with comorbid psychiatric diagnosis should be carefully monitored, especially when the dosage is changed. Neurological assessments should be done more frequently. Psychiatric symptoms can cause considerable distress to the patient and family members. In some situations, these symptoms can be severe enough for an inpatient psychiatric assessment and treatment. Recommendations include

discontinuation of Keppra and starting another antiepileptic.

No. 111

Periodic Catatonia After Thyroid Cancer

Poster Presenter: Darinka Aragon, M.D.

Co-Authors: Robert G. Bota, M.D., Michelle Heare

SUMMARY:

Thyroid conditions, including autoimmune and hypo- and hyperthyroidism, can cause a myriad of psychiatric conditions, including catatonia. Several decades ago, a number of papers reported the concept of periodic catatonia, which is defined as a subtype of catatonia in which a person exhibits intermittent hyperkinetic and/or akinetic episodes that appear suddenly and fail to remit completely. We present the case of a 52-year-old female who had three major deteriorative episodes, without a return to baseline between episodes, after thyroid cancer treatment, leading the patient to become bedbound. The first decrease in functioning happened after the diagnosis of thyroid cancer, resulting in the patient dropping out of graduate school in her early 30s. The second deterioration happened ten years later in her early 40s, when she presented with psychotic symptoms and symptoms of anorexia. The last period of deterioration occurred at age 51, one year before her hospitalization, after which the patient worsened to the point where she became bedbound and dependent on a PEG tube for feeding. During the initial interview, the patient exhibited mutism, negativism and stupor. The patient received an extensive medical workup to determine if there was an organic cause for her catatonia involving multiple medical subspecialties including neurology, gynecology, endocrinology, and rheumatology, with no significant acute findings. The patient was started on lorazepam titrated up to a dose of 27mg a day with partial response. Dextroamphetamine was added with significant positive response that resulted in the patient being able to communicate. Finally, memantine was added to help with residual symptoms, leading to a Montreal Cognitive Assessment score increase from 14/30 to 30/30. She was able to undergo physical therapy, and her PEG tube was able to be removed. She was discharged with dextroamphetamine 20mg every morning and

20mg at 3:00 p.m., lorazepam 2mg twice daily, memantine 20mg daily, mirtazapine 45mg every night at bedtime, and ramelteon 8mg every night at bedtime. In this poster, we discuss the concept of periodic catatonia in the setting of thyroid cancer and its treatment. We also discuss the importance of evaluating and treating patients who have thyroid conditions and develop new psychiatric symptoms.

No. 112

Screening for Pseudobulbar Affect in an Outpatient Mental Health Clinic

Poster Presenter: Kishen R. Bera

SUMMARY:

Background: Pseudobulbar affect (PBA) is a neurological condition affecting the brain and characterized by frequent, uncontrollable laughing/crying episodes unrelated to mood/social context and often disruptive and embarrassing, leading to social isolation and impaired quality of life. Symptoms of mood disorders often overlap with those of PBA and hence are often misdiagnosed as clinical depression. Our main objective was to determine if the Center for Neurologic Study Liability Scale (CNS-LS) could be a valuable primary tool for clinicians to use in outpatient mental health clinics to screen for PBA. **Methods:** A total of 223 patients whose ages ranged from 18 to 80 were administered the CNS-LS in an outpatient mental health clinic. A score of 13 or higher correlates with a higher likelihood that PBA may exist. **Results:** The average score on the CNS-LS for the 223 patients was 12.72. 44.39% of the patients had a score greater than or equal to 13. The three primary diagnoses found in the clinic were major depression, bipolar disorder and schizophrenia, which showed scores of 13.42, 15.21 and 12.88, respectively, on the CNS-LS. The percentage of people with scores above or equal to 13 were 47.19, 54.76 and 40.63%, respectively. **Conclusion:** To our knowledge our study is the first screening for PBA utilizing the CNS-LS in a general outpatient psychiatric clinic. The high prevalence of positive screening in this study population suggests that with new pharmacological treatments now available for treating PBA, regular assessments may result in improved outcomes for patients in an outpatient mental health setting.

No. 113

Neuropsychological Effects of Moyamoya Disease: A Case Report and Review of Literature

Poster Presenter: Walter Luchsinger

SUMMARY:

Background: Moyamoya disease is an uncommon cerebrovascular disease associated with an increased risk of hemorrhagic strokes. Most of the literature of Moyamoya disease has originated in Japan and focused primarily on pediatric cases. Diagnosis usually occurs in the first or the third and fourth decades of life. Only a few cases have been published in adults, and neuropsychological research on its cognitive effects has been limited in scope and generalizability. This case report is intended to amplify current evidence of cognitive impairment and neuropsychological function secondary to Moyamoya disease in adults. Furthermore, this case report is one of the few illustrations demonstrating memory impairment and severe depression secondary to Moyamoya disease in an adult diagnosed outside of the usual bimodal age range for the disorder. **Case:** We report a case of a 54-year-old Caucasian female with history of three strokes secondary to Moyamoya disease diagnosed in her fifth decade of life and with no psychiatric history prior to the strokes. The patient presented to the psychiatric emergency unit after a suicide attempt by overdose. The patient had loss of vision in her right eye, memory problems and personality changes, but no physical impairment. She was admitted to the inpatient psychiatric unit, and a neuropsychological test battery was performed to assess her cognition and personality changes. **Results:** Neuropsychological tests showed an overall IQ score of 66, reflecting a generalized vascular dementia rather than any focal patterns associated with specific CVA. Wechsler memory index scores ranged from a low of 53 (auditory memory) to a high of 76 (visual memory), and overall memory was quite impaired. Wechsler Memory Scale–IV results were consistent with WAIS IV scores. The patient demonstrated substantial difficulties with verbal word fluency, perceptual motor speed, understanding cause and effect, inferential thinking, and executive function. The patient's personality assessment demonstrated a psychological profile

associated with significant depression and somatic focus. **Discussion:** The neuropsychological test scores in this case were generally lower than most other reported adult cases. Previous studies in adults indicate that impairment in intellect, speed of information processing, executive functioning, and visual spatial ability can occur. Nevertheless, the most consistent findings have been an intact memory and personality functioning. The findings in this case report suggest that Moyamoya disease in adults can significantly affect memory as well as emotional/personality function. Executive function may also be markedly impaired, and the results of this case suggest more severe impairment than for most other recorded case studies.

No. 114

Neurocognitive Functioning in Mood Disorders

Poster Presenter: Sowmya C. Puvvada, M.D.

SUMMARY:

Depression has been linked with detriments to neurocognitive functioning across the lifespan. Consequently, both major depression and bipolar disorder run the risk of cognitive difficulties, and research has found as much. However, fewer studies have evaluated if there are inherent differences between these two presentations to such an extent that objectively measured differences may be found in their neurocognitive profiles. The objective of our study is to analyze and compare the outcomes of various subsets of neuropsychological testing specific to the diagnoses bipolar disorder and major depressive disorder to determine if a consistent discrepancy may be found between the two presentations. This information can be used in clinical practice to improve our understanding of the functional prognosis of these individuals while potentially highlighting factors that may suggest earlier diagnosis in the case of bipolar disorder in particular.

No. 115

A Neurological Storm of Psychosis: Case Presentations and Review of Psychotic Symptoms Secondary to Temporal Lobe Epilepsy

Poster Presenter: Bhinna Pearl Park, M.D.

Co-Authors: Mark Kvarta, Ph.D., Michael S. Peroski, D.O.

SUMMARY:

Temporal lobe epilepsy (TLE) is a focal, partial seizure disorder that often presents with psychiatric symptoms. Symptoms of TLE can include déjà vu; jamais vu; hallucinations in any sensory modality, but most commonly olfactory or gustatory; simple partial or complex partial seizures with or without secondary generalization; and amnesia. However, in addition to having these peri-ictal symptoms, some cases of TLE can present with frank psychosis, depression or altered cognition. It is essential to recognize patients in which TLE may be present to ensure that the appropriate targets are being treated. As some antipsychotics lower the seizure threshold, patients with TLE would be at particular risk for worsening symptoms with antipsychotic treatment without augmentation with antiepileptic drugs. The most common TLE foci are located in the mesial temporal lobe and lateral temporal lobe, with dominant presenting symptoms determined by the location of this seizure focus. This poster will present two cases of TLE. The first case is a patient who presented to an inpatient psychiatric unit with psychotic symptoms found to be secondary to TLE in the context of noncompliance with phenytoin and lamotrigine. He was subsequently stabilized on a combination of haloperidol, valproic acid and phenytoin. The second case is a patient who was seen on a consultation psychiatry service for psychosis and was subsequently found to have TLE, the management of which was delayed by a lack of recognition of this as a primary seizure disorder with secondary psychiatric symptoms. After two abnormal EEGs confirming the presence of a temporal lobe focus, the patient was subsequently diagnosed with schizoaffective disorder. He was noncompliant with psychiatric medications, but curiously compliant with his seizure medications. It is notable that his psychotic symptoms re-emerged when he later became noncompliant with his seizure medications. Through these cases, the symptoms, pathophysiology, diagnosis, evaluation, and management of a psychotic patient with possible TLE will be discussed. Special focus will be placed on the current state of the literature regarding TLE and the following treatment modalities: medications, vagal nerve stimulation and surgical intervention.

No. 116**Using Statistical Methodology to Construct a Valid Shorter Version of the Scale for Complex Partial Seizures Symptoms Instrument for Panic Disorder**

Poster Presenter: Jianwei Jiao, M.D., Ph.D.

Co-Author: Nash N. Boutros, M.D.

SUMMARY:

Epilepsy spectrum disorder (ESD) is characterized by multiple partial seizure-like symptoms without motor manifestations and typically without stereotyped spells. ESD patients often present with a range of behavioral phenotypes such as persistent dysphoria, emotional lability and irritability. Panic disorder (PD) is one of the most common anxiety disorders, and the complex partial seizures symptoms in PD patients are well documented. According to our previous observation, a portion of PD patients with ESD may not respond to standard treatment of SSRIs/SNRIs. Available literature suggest that some treatment-refractory PD patients may respond to antiepileptic drugs (AEDs). We hypothesized that milder degrees of increased neural excitability may be capable of causing observed phenotypic changes in ESD patients, including cognitive and behavioral dysfunction. Because PD patient with ESD are not well recognized or characterized by accepted diagnostic categories in either neurological or psychiatric nosology, inadequate treatment is uncommon in clinical practice. Because of this difficulty, Roberts and colleagues developed a structured clinical interview for complex partial seizure-like symptoms (SCIPS), which is a standardized symptoms interview with 35 items describing cognitive, affective and psychosensory symptoms associated with partial seizure disorder. The SCIPS is relatively too time-consuming to perform in clinical settings. In this study, we aim to construct and validate a shorter version of the original 35-item SCIPS suitable for use in the clinic. We used principal component analysis (PCA) to reduce the dimensionality and determine important components of variables in the original 35 items of the SCIPS, which are expected to be highly correlated with each other. A six-item version—PD-SCIPS6—was further constructed from the original 35 items of SCIPS.

No. 117**Clinical Correlates of Increased Temporal Lobe Seizure-Like Symptoms in Patients With Panic Disorder (PD)**

Poster Presenter: Piyushkumar Jani, M.D.

Co-Authors: Jianwei Jiao, M.D., Ph.D., Ming B. Chi, M.D., Kemal Sagduyu, M.D., Nash N. Boutros, M.D.

SUMMARY:

Episodic symptoms (ES), including panic attacks and dissociative episodes, are common in psychiatric populations. This set of symptoms may represent behavior resulting from increased focal cortical or subcortical irritability. These same mechanisms are thought to underlie epilepsy. Both dissociative symptoms and panic attacks are examples of episodic psychiatric symptoms that are commonly less responsive standard treatment. Panic disorder (PD) patients exhibit symptoms that are remarkably similar to symptoms induced by temporo-limbic epileptic activity. Current theories of the neurobiology of PD point to abnormally sensitive or hyper-excitability fear networks. In this preliminary study, we sought to ascertain if higher scores on the Structured Clinical Interview for Complex Partial Seizure-Like Symptoms (SCIPS) will correlate with decreased responsiveness to standard anti-anxiety treatment with SSRIs or SNRIs.

No. 118**“Doctor, He Won’t Stay in His Room! He Needs Something Else!” Unrecognized Akathisia in a Patient With Profound Intellectual Disability**

Poster Presenter: Kruthika Sampathgiri, M.D.

Co-Author: Carolina Retamero, M.D.

SUMMARY:

Case: We present the case of a 26-year-old male with past psychiatric history of intellectual disability (ID); multiple previous inpatient hospitalizations for behavioral symptoms consisting of aggression, property destruction and agitation; and history of multiple failed trials of antipsychotic medications and mood stabilizers who was admitted to the inpatient psychiatric unit because of agitation and aggression to self and others. Propranolol was added to his medication regimen under the diagnostic suspicion of akathisia with moderate improvement

of symptoms. **Methods:** Retrospective chart review and PubMed search using keywords “akathisia” and “intellectual disability” were conducted. **Discussion:** Individuals with moderate and profound ID frequently have behavioral problems that can manifest in the form of aggression toward others or property, self-injurious behavior, severe stereotyped behavior, hyperactivity, and severe temper tantrums. It has been reported that 20–45% of people with ID are on psychotropic medications and, of them, 14–30% are receiving these medications for behavioral problems associated with their ID diagnosis. The Matson Evaluation of Drug Side Effects (MEDS) and the Akathisia Ratings Movement Scale (ARMS) appear to be useful to diagnose when administered together in these patients and, as our case highlights, should be administered frequently to attempt to differentiate patients’ behavioral symptoms secondary to ID from drug-induced akathisia. **Conclusion:** It is essential to identify and monitor for akathisia in patients with severe ID, as clinicians tend to use antipsychotics to treat their behavioral symptoms.

No. 119

A Rare Case of Managing Agitation, Anxiety and Depression in a Patient With Alternating Hemiplegia of Childhood

Poster Presenter: Rohit P. Shah, M.D.

SUMMARY:

Alternating hemiplegia of childhood (AHC) is a rare neurodevelopmental disorder that occurs in one in a million individuals and features episodic hemiplegia and other paroxysmal and non-paroxysmal symptoms leading to progressive neurological impairment that can be accompanied with psychiatric manifestations. The majority of AHC patients have a mutation in the ATP1A3 gene; this is responsible for the Na/K ATPase, which regulates ion transport. We present a 20-year-old male with AHC with confirmed genetic testing for the ATP1A3 gene mutation. His past medical history was significant for horizontal nystagmus at two months old, which was subsequently followed by episodes of hemiparesis in his upper extremities. The episodes would range from minutes to days and would involve both upper extremities at times. At seven months old, his condition progressed to involve the bilateral lower

extremities. There were times where it involved all four extremities. His mother had noted that weather changes, excess physical exertion and infections were some of the triggers for the hemiplegic episodes; however, many episodes occurred with no identifiable cause. The patient was started on a calcium channel blocker, flunarizine, which decreased the frequency, duration and intensity of the episodes. At age seven, he began having seizures, and he was started on topiramate and Lamictal. There were significant developmental delays in his speech, cognition and motor abilities. He would have periods of agitation that involved yelling, hitting, biting, and scratching that was managed by behavioral interventions until he reached the age of 13. Underlying anxiety seemed to be the cause for his increased agitation, and the patient was started on citalopram, which did not alleviate the symptoms. Citalopram was discontinued, and he was started on fluoxetine, which improved the anxiety, but the agitation persisted. At last, risperidone was initiated, and it helped decrease his physical and verbal outbursts. In this poster, we highlight the development of a patient with AHC and discuss the difficulties of managing comorbid psychiatric conditions.

No. 120

This Is Not My Son! A Case of Capgras Delusion

Poster Presenter: Pooja Shah, M.D.

Co-Authors: Smit Shah, M.D., Stacy J. Dumas, M.D., Ramon Solhkhah

SUMMARY:

The patient is a 72-year-old Caucasian male with a history of schizoaffective disorder, manic depression, PTSD, alcohol dependence, and nicotine dependence residing at a geriatric psychiatric facility for the past two years. He has been noncompliant with medications, which resulted in attaining court-assisted guardianship to his brother and son. Medical comorbidities include benign hypertension, hearing loss, nuclear cataracts, hypertensive retinopathy and suboptimal lithium levels. Current medications include haloperidol decanoate 50mg intramuscularly every 28 days for psychosis, Haldol 5mg three times daily by mouth for psychosis, lithium 150mg by mouth every morning for mood stabilization, and benztropine 1mg twice daily by

mouth for EPS. The patient had an extensive legal history and blamed the “beam of light over his head” for his arrests, DUIs, warrants, and prior homicidal behavior when he threatened to kill his neighbor with a hammer. Family consists of his brother, two sons, one daughter, and grandkids. He is fond of photography and shared various Polaroid pictures of his children, expressing a desire to be with his family but feels unable to do so since his family is unaware of his whereabouts. At monthly family meetings with his son and brother, he failed to identify them and accused them of being imposters who took his money. He exhibited anger toward the imposters but was affectionate toward his “real” family. His family states that he fails to identify them despite of their frequent futile attempts to establish a connection with him. He has been disorganized and distraught whenever he attends his hearing at the criminal court, claiming that the judge was an imposter and began presenting his own defenses. Clozaril therapy is being considered. Capgras syndrome (CS) is a fixed delusional disorder wherein the affected individual believes that a family member or a relative is not who he or she claims to be and has been replaced by an imposter or double. Various neuronal, psychiatric and psychological theories have been postulated to discuss its underlying pathology with occurrence noted in a background of mental and organic illnesses like schizophrenia and dementia. Bauer proposed its occurrence secondary to the dorsal visual recognition route damage. Our case shows its occurrence in the presence of schizophrenia, trauma, personality disorder, and psychodynamic family dysfunction. The patient has been a schizophrenic responding suboptimally to various antipsychotics, namely Haloperidol and lithium in different preparations, and being considered for a clozapine regimen. New-onset CS has been noted in a few cases of treatment-resistant schizophrenia. It is important to differentiate it from Cotard syndrome, wherein the person has delusions of loss of body organs, and Fregoli syndrome, wherein the person believes that different people are a single person and metamorphosize.

No. 121

Drug-Induced Parkinsonism and Concurrent Hypothyroidism in an Elderly Patient With Chronic Lithium Use

Poster Presenter: Soyoun Lee, M.D.

Co-Authors: Joanna C. Lim, M.D., Venkatesh D. Handratta, M.D.

SUMMARY:

Lithium was the first mood-stabilizing drug utilized for the treatment of bipolar disorder and is still considered one of the most effective and widely used medications prescribed for bipolar disorder. Despite its therapeutic efficacy, lithium use is often limited and needs to be replaced with other alternative agents because of its high side effect profile and the risk of toxicity because of its narrow therapeutic range, which requires careful serum level monitoring. It is also known that lithium can cause drug-induced Parkinsonism. Additionally, hypothyroidism is another common adverse effect of lithium. Ms. J. L. No is a 76-year-old white female with a past psychiatric history significant for bipolar disorder. She has been on lithium and adjunct psychotropic medications for more than 10 years. Lithium level was regularly monitored and was in the target therapeutic range, and the patient tolerated lithium therapy well without significant adverse effects. The patient presented to our outpatient clinic with complaints of frequent falls over the past five to six years, a month history of Parkinsonism-like movements and dizziness upon standing from a sitting position. Neurological examination was significant for fine tremor of bilateral upper extremities both at rest and with action, slight rigidity in all four extremities, and mild slowing on movement. Laboratory workup showed normal lithium level of 0.9mmol/L, elevated TSH of 76.5UIU/ml, low free T3 1.38pg/ml, and low T4 0.55ng/ml. Given the findings, the suspicion for lithium-induced hypothyroidism and lithium-induced Parkinsonism was raised. Lithium was gradually discontinued under supervision, following which, the patient’s abnormal movements had improved with the exception of residual terminal tremor on finger-to-nose test during a one-month follow-up visit. Also, DAT scan was negative, which ruled out Parkinson’s disease. She was diagnosed with lithium-induced Parkinsonism as her problems with balance, bradyphrenia, autonomic instability, and gait disturbance showed dramatic significant improvement within four months of the discontinuation of lithium. This case suggests

physicians who take care of elderly patients should give close attention to those side effects on clinical neurological and mental examination while continuing dose adjustment and regular monitoring of serum lithium concentrations. Additionally, other medical conditions and medication related to lithium toxicity and movement disorders (i.e., thyroid function) and tricyclics need to be discussed and included in assessment and decision making in such cases.

No. 122

Quetiapine in the Management of Post-Stroke Delirium: A Case Report

Poster Presenter: Anindita Chakraborty, M.D.

Co-Author: Musa Yilanli, M.D.

SUMMARY:

Delirium is an acute neuropsychiatric disorder characterized by altered mental status and fluctuating levels of consciousness. Research suggests that there is a higher incidence of delirium in stroke patients, and post-stroke delirium is associated with higher mortality, increased length of hospital stay and institutionalization. Few studies address its treatment. We present a case report of a 59-year-old gentleman with post-stroke delirium who was successfully treated with quetiapine. Mr. W. is a 59-year-old African-American man with a past medical history of hypertension, diabetes and coronary artery disease who presented with right-sided weakness and a facial droop. A brain MRI revealed an acute infarct in the left internal capsule, and the patient was admitted for a stroke workup. By the second day, Mr. W. demonstrated increasing irritability and low frustration tolerance, which escalated to where he tried to get out of bed without assistance, pulled out his intravenous lines and attempted to punch a nurse. He was loud, profane and illogical. Mental status was notable for psychomotor agitation, ill sustained attention and orientation only to name. A diagnosis of post-stroke delirium was made, and the patient received up to 12mg of haloperidol, but showed limited improvement. The treatment team then switched to quetiapine 25mg twice a day, and Mr. W.'s agitation completely resolved after one week of hospitalization. Mr. W. had stopped his quetiapine when he was discharged and did not have any

episodes of agitation since then. Due to its efficacy and lesser sedative/hypotensive effects, the American Psychiatric Association recommends haloperidol as first line in the management of acute delirium. However, studies comparing antipsychotics have not shown any one to be more efficacious than others. Our case report demonstrated the efficacy of quetiapine in the treatment of post-stroke delirium. This lines up with a case series by Sasaki et al. where low-dose quetiapine (25–50mg daily) was successfully used to treat 12 patients with delirium. Similarly, Torres et al. treated two patients with delirium with low-dose quetiapine without adverse effects. One study found that haloperidol and low-dose quetiapine were equally effective and safe in managing delirium symptoms in a hospital setting, whereas our case study showed that quetiapine may be associated with improved outcomes compared to haloperidol. In conclusion, our case study highlights the use of quetiapine in post-stroke delirium and emphasizes the need for more comparative studies examining the efficacy of antipsychotics in the management of post-stroke delirium.

No. 123

Severe Mental Illness in a Patient With Asymptomatic White Matter Lesions on Brain MRI: A Case Report

Poster Presenter: Henry Chavez

Co-Authors: Carlos E. Molina, M.D., Gabriela Feier, M.D.

SUMMARY:

Background: Previously of interest in demyelinating diseases such as multiple sclerosis, myelin is now viewed as a contributor to a wide range of psychiatric disorders, including depression and schizophrenia. Novel research is focused on the radiologically isolated syndrome (RIS) that was first used by Okuda and colleagues in 2008 to describe subjects with MRI anomalies suggestive of demyelinating disease but with no neurological symptomatology. **Methods:** We present a patient with a history of severe treatment-resistant depression, borderline personality disorder and chronic suicidal ideation. She completed multiple trials of medications, ketamine infusions and electroconvulsive therapy. The patient has a family history of multiple sclerosis but she does not have

any neurological diseases. An MRI of the brain incidentally detected nonspecific white matter changes in the frontal and parietal lobes. A neurological consult did not find any clinical symptoms, and no further recommendations were made. **Results:** Our literature search suggests that noninvasive brain imaging reveals an association between structural differences in white matter tracts and a wide range of neurological and psychiatric illnesses. Studies indicate that damage to the dorsolateral prefrontal cortex and the orbitofrontal cortex can result in impairment in planning, disinhibition, impulsivity, lability, and personality changes. **Discussion:** The patient has a history of depression since her late twenties, which had been relatively well controlled. Lately, her condition worsened, and the previously mentioned interventions proved ineffective. We hypothesize that these neurological findings might be responsible for this patient's severe and debilitating mental illness. According to research, 34% of patients with RIS were identified as having clinical symptoms of multiple sclerosis within five years. This can lead us to believe that psychiatric symptoms could be a prodromal manifestation in these patients. At this point, more research is needed to discover if early treatment of such lesions can be favorable to avoid progression into multiple sclerosis and prevent worsening of psychiatric symptoms. **Conclusion:** A comprehensive neurological screening in all patients, especially those with a family history of multiple sclerosis, should be a priority for patients with mental illness. Adequate neurological referral and close follow-up in patients who are identified with radiologically isolated syndrome is important.

No. 124

Behavioral Issues in Epilepsy: Landau-Kleffner Syndrome (LKS) and Conduct Disorder

Poster Presenter: Irina Chikvashvili, D.O.

SUMMARY:

A 17-year-old male with previous psychiatric history of conduct disorder was admitted to an adolescent inpatient unit for violent outbursts, physical aggression toward father, self-mutilation, and homicidal threats. This patient had a long, remitting course of low impulse control, suicidal and homicidal behaviors, intellectual disability, and depression. He

had been in multiple residential treatment facilities, but was discharged most recently for attacking his case worker. While on the inpatient unit, he was involved in several psychiatric codes for violence against male peers and inappropriate behavior toward female authority figures. The patient was placed on Geodon, which had minimal effect. Applications to residential treatment facilities were denied due to the patient's age and past history of violence. Complicating matters further, the patient's impending 18th birthday rendered him ineligible to remain on an adolescent unit. Using the integrated biopsychosocial approach, there may be several contributing factors to the patient's diagnosis of conduct disorder. One of the main contributors may be Landau Kleffner syndrome (LKS). LKS (or syndrome of acquired epileptic aphasia) is an age-related epilepsy syndrome characterized by loss of language in a previously normal child. Although all LKS patients have an abnormal EEG compatible with the diagnosis of epilepsy, only 70% have clinical seizures. Over 50% present between three and eight years old with agnosia and hence are misdiagnosed with deafness (resulting in late diagnosis of LKS). Hearing is normal, but behavioral problems (irritability, poor attention span, outbursts) are very common. If seizures occur, they are mostly complex-partial, generalized tonic-clonic and atonic/drop seizures. The final clinical manifestation of LKS is a behavioral disturbance and is severe. Theories for these behavioral disturbances include 1) primary functional disinhibition at a limbic or diencephalic level or 2) frustration-induced effect due to loss of comprehension. Due to unprovoked outbursts of rage and aggression, the child may be misdiagnosed with autism or appear psychotic. This aspect also often results in a diagnosis of primary conduct disorder. Treatment guidelines require further research. Valproic acid is the current anticonvulsant of choice, which is sometimes used in combination with clobazam to control their seizures. If symptoms persist, a trial of steroids should be considered. If when medical management fails, some centers propose a subpial transection procedure. Appropriate speech and language therapy is imperative for affected patients. Although prevalence is uncommon, there is a need for an increased awareness of LKS, especially among psychiatrists and neurologists. Complicated cases,

such as the one described above, highlight the difficulties of maladaptive coping skills and lack of resources within the community to help transition children into adulthood.

No. 125

A Unique Case of Levetiracetam-Induced Suicide Attempt

Poster Presenter: Michael Esang

Co-Authors: Guitelle St. Victor, M.D., Rahul Kodali

SUMMARY:

Levetiracetam is an antiepileptic drug (AED) that has been associated with neuropsychiatric effects such as irritability, aggression and depression. The FDA reports an incidence rate of 0.43% for suicidal behavior or ideation among patients on AEDs, including levetiracetam. In this poster, we report a unique case of attempted suicide via hanging as a result of the behavioral adverse effects of levetiracetam. Mr. A., a 20-year-old Hispanic male with a history of substance-induced mood disorder, seizure disorder and polysubstance use disorder (alcohol, benzodiazepines and cannabis), presented to the psychiatric consultation service after a suicide attempt by hanging. The patient was admitted to the trauma service, from whence he gradually recuperated. He was co-managed by medicine for aspiration pneumonia and was subsequently transferred to the inpatient psychiatric service for stabilization. He had been on levetiracetam for about two years and had been depressed during this time. His dysphoric state was repeatedly attributed to his continued heavy substance use by his family members and care providers. He continued to experience episodes of depressed mood, self-cutting behavior and verbal aggression toward his family members, but did not seek care. He eventually discontinued the medication on his own. Shortly thereafter, he had an episode of seizure activity, followed four days later by an attempt to hang himself. His case highlights the need for increased vigilance by care providers for neuropsychiatric sequelae in fragile epileptic patients prescribed levetiracetam.

No. 126

Multiple Sclerosis and Comorbid Bipolar Disorder: A Case Report and Review of the Literature

Poster Presenter: Julia Ruby

Co-Authors: William Frizzell, Joseph Chien, D.O., Sabeeka Hasan

SUMMARY:

In this poster, we present a case of a woman diagnosed with bipolar disorder (BD) and multiple sclerosis (MS) who was admitted to an acute inpatient psychiatric unit for mania. Ms. S., a 55-year-old woman with a past psychiatric history of bipolar I disorder and a past neurologic history of multiple sclerosis, presented to the inpatient psychiatric care unit with a new episode of mania, specifically decreased need for sleep over the past three days, grandiosity, excessive and pressured speech, distractibility, increased goal-directed activity, and impulsivity. Prior to admission, the patient was evaluated in the emergency room by the neurology consultation service, who opined that the patient's episode of mania was not related to the diagnosis and management of her multiple sclerosis. Ms. S. was voluntarily admitted to the inpatient psychiatric care unit and started on risperidone monotherapy for treatment of acute mania. The patient's condition improved over the course of ten days, and her manic episode resolved. She was discharged on risperidone for maintenance treatment of BD. Prior to this admission, Ms. S. had not been managed for maintenance treatment of BD in the past year, despite having been diagnosed with this condition in her 30s and experiencing multiple episodes of mania over the past 15 years. We reasoned that her episode of acute mania was a consequence of the lack of management of her mood disorder. However, her diagnosis of multiple sclerosis at the age of 49 also prompted the treatment team to consider the broader relationship between her primary psychiatric and neurological conditions. The prevalence of psychiatric disorders is well known to be higher in multiple sclerosis than in the general population, and the prevalence of BD, specifically, is about double in patients with MS versus the general population. The discussion of this case will review the recent literature on BD and MS comorbidity and explore what is currently known regarding the relationship between bipolar disorder and multiple sclerosis, specifically in terms of the prevalence of the former diagnosis in the latter and what is known regarding their temporal association.

We also discuss the challenges of diagnosing and managing BD in MS and how the pharmacological treatment of MS may impact BD and vice versa (i.e., corticosteroids affecting mania or antipsychotics exacerbating problems with movement) and conclude with suggestions for management of patients with these comorbid conditions.

No. 127

Late-Life Neuropsychiatric Decompensation in a Case of Undiagnosed 22q11.2 Deletion Syndrome

Poster Presenter: Katherine E. Taylor, M.D.

Co-Author: Alison Hermann, M.D.

SUMMARY:

We present the case of Ms. M., a 53-year-old divorced, employed Caucasian woman with a past psychiatric history of a single major depressive episode, unspecified anxiety disorder and one lifetime psychiatric hospitalization who was admitted to an inpatient psychiatric unit due to active suicidal ideation, low mood and severe ruminative anxiety in the context of several months of functional decline. The patient was noted to have cognitive deficits with borderline intellectual functioning upon neuropsychiatric testing (WAIS-IV FSIQ=78), a medical history of cleft palate repaired in childhood, repaired ventricular septal defect, and multiple unusual infections suggestive of immunodeficiency, which together led to suspicion and diagnosis of 22q11.2 deletion syndrome (22q11.2DS). Over a one-year period, the patient's symptoms were largely refractory to pharmacological management and cognitive and behavioral therapies in multiple inpatient, partial hospital and day treatment settings, eventually leading to the patient's move from independent living to full-time supported care. Given the high levels of psychiatric morbidity and phenotypic heterogeneity in 22q11.2DS, this case highlights the importance of the psychiatrist in recognition of this common and often undiagnosed syndrome. Further, although psychiatric manifestations of this syndrome have been extensively studied in childhood and adolescence, little is known about the trajectory of psychiatric morbidity through the lifespan. The patient's steep neuropsychiatric decline in middle age suggests the need for further research to improve characterization of these patients.

No. 128

Korsakoff's Psychosis Recognized Two and a Half Years After Cholecystectomy

Poster Presenter: Veera Venkata Satyanarayana Kommisetti

Co-Author: Jeffrey A. Ali

SUMMARY:

Korsakoff's psychosis is a neuropsychiatric syndrome first reported in 1887 by Sergei Korsakoff, a Russian neuropsychiatrist, and is most frequently associated with chronic alcohol use. The syndrome usually presents clinically with anterograde and retrograde amnesia, personality changes, and psychosis. It is considered a chronic event and often follows an acute syndrome that is classically considered to consist of ataxia, ophthalmoplegia, nystagmus, and a global confusional state known as Wernicke's encephalopathy. Not every case of Korsakoff's psychosis is preceded by Wernicke's encephalopathy, but almost all are associated with nutritional deficiency, particularly thiamine deficiency. It has also been reported in patients with hyperemesis, post-gastrointestinal surgeries, thyrotoxicosis, AIDS, chronic dialysis, and certain gene abnormalities (e.g., SLC19A2). Wernicke's encephalopathy, if not treated promptly, may progress into Korsakoff psychosis in 85% of patients who are so diagnosed. We report the case of a 36-year-old African-American female referred by a neurologist for a psychiatric evaluation of delusions and short-term memory loss. She presented to our clinic with her mother, who had obtained power of attorney and was also accompanied by her younger sister. On initial contact, she denied past psychiatric history, and there was a denial from all three family members of alcohol use. She had a cholecystectomy about 32 months prior to psychiatric presentation, and her post-op was complicated by nausea, vomiting, ringing in her ears, confusion, and visual abnormalities. She subsequently had three emergency room visits and, on one visit before being seen in our clinic, had been "given three doses of intravenous thiamine 500mg for visual problems with some relief." She had also been admitted to the internal medicine service at a local hospital and diagnosed with meningitis. She had a nonproductive medical workup and was discharged for outpatient

care with neurology. She returned to work and independent living, but over the course of the next 24 months, her mental functioning deteriorated. She reportedly became increasingly confused, with short-term memory changes and various delusions. The patient was examined on two occasions, and a thorough review of all medical records, including emergency room visits, laboratory investigations and neuroimaging studies, was conducted. A literature search was pursued, and a diagnosis of Korsakoff's psychosis associated with possible decreased thiamine levels following cholecystectomy has been made.

No. 129

Temporal Lobe Epilepsy Presenting as Fugue

Poster Presenter: Patricia Ann S. Calimlim

SUMMARY:

Mr. S. is a 37-year-old white male with history of PTSD; severe depression; REM behavior disorder, ADHD combined type; and migraine headaches who was presented to the ED by his mother-in-law due to unusual behavior and disorientation. At the time of evaluation, the patient was oriented to person, place and time; however, he was an unreliable historian as he could not recall recent events, including his recent bizarre behavior observed by his family and his compliance with prescribed medications. His thought content was inappropriate at times, with non-sequiturs to questions. Most of the history was collateral from his family at bedside and via phone. Mr. S. had been exhibiting unusual behavior for the past three days, characterized by going out at odd hours in the night, disorientation to day/night and incoherent thought content. Per chart review, the patient last saw a provider a month prior to presentation, at which point zolpidem for insomnia was discontinued due to concerns of complex behaviors during sleep, including dissociative episodes characterized by "night driving" without recollection; however, the patient continued to take medication. His last dose was the previous night. The patient is currently taking aripiprazole, amitriptyline, bupropion, benztropine, dextroamphetamine, and trazodone. Today, the patient locked himself out of the house and apparently abandoned his vehicle at an unknown location. A similar episode occurred last week, when the patient reportedly drove to a

location over one hour from home with no intended purpose and may have been pulled over by police, but he was unsure. He was eventually admitted to the inpatient unit, and a thorough neurological workup was started, including a brain MRI, EEG and sleep study. In this case report, Mr. S. is a patient with severe PTSD characterized by sleep deprivation, frequent flashbacks and nightmares, with associated memory difficulties. He was additionally taking many seizure-inducing or seizure threshold-lowering medications, further perpetuating the risk for seizures in an already susceptible individual. His presenting complaint of altered mental status with confusion, retrograde amnesia, aimless wandering with fugue, and left temporal lobe epileptiform activity on EEG leads us to consider a diagnosis of new-onset complex partial seizures, more specifically, a phenomenon called poriomania.

No. 130

Frontotemporal Dementia Diagnosis in a Setting of Delayed Manifestation of Neurobehavioral Disturbances in a Veteran With Acute Onset of Catatonia

*Poster Presenter: Joseph C. Ikekwere, M.D., M.P.H.
Co-Authors: Traci Carroll, M.D., Ph.D., Jill McCarley, M.D., Kamran Hayel-Moghadam, M.D., John P. Hendrick, M.D.*

SUMMARY:

Patients with organic brain syndrome, including major neurocognitive disorder, front-temporal type, may manifest initially as a psychiatric disorder, such as personality and emotional disturbances, anxiety, and depression, and later with social withdrawal, negativism, hypersomnolence, speech and language disturbance, and cognitive dysfunction. A 65-year-old divorced Caucasian female veteran with a past psychiatric history of borderline personality disorder (BPD), posttraumatic stress disorder (PTSD) and major depressive disorder (MDD) with psychosis and a recent history of severe suicide attempts presents to the psychiatric consult service with complaints of depressive symptoms with hypersomnia, 20% weight loss since the last year, word-finding troubles, and auditory and visual hallucinations for the last two months. Her family, who lives 1.5 hours away from her, reported deterioration in mood and a decline in personal hygiene. She denies abuse of any illicit

substances. She was admitted to the locked psychiatric unit. The psychiatric team considered the differential diagnosis of MDD with psychosis, and head computerized tomography (CT) scan revealed mild cerebral atrophy with an anterior parietal and frontal lobe predominance. The patient was regularly monitored, and her condition gradually worsened. She demonstrated inhibition, apraxia, apathy, flat affect, and refusal to open eyes, eat, drink, or take medications. She also displayed progressive aphasia with poverty of speech involving monotonous word repetition like "go away." Later, she showed signs of muscle weakness as well as occasional poor movement coordination, with suspicion of catatonia. She was given a trial of benzodiazepines with partial response, then scheduled for brain positron emission tomography (PET) scan, then transferred to the medicine floor, where she had some electroconvulsive therapy sessions with mild improvement. These stepwise events gave room to uncertainty whether her symptoms were acute catatonia from unspecified psychotic disorder or severe BPD. The veteran's limited response to the highlighted trials led to the concern of suboptimal management of her organic brain syndrome as a result of a previous psychiatric diagnosis of BPD, MDD and PTSD, compared to a patient with a prior neuropsychiatric history. PET scan later identified hypometabolism within the frontal and temporal regions in consistency with frontotemporal dementia. Patients with psychiatric manifestations often have delayed organic brain syndrome diagnosis. In this case report, we discuss the challenges and importance of differentiating primary organic etiology from neurobehavioral symptoms during the treatment of catatonia in a patient with previous psychiatric mood and anxiety disorders. This highlights the importance of evaluating each patient as a whole while paying close attention to onset of new symptoms, even in a patient admitted multiple times for the same psychiatric disturbance.

No. 131

Neuropsychiatric Manifestations of Medical Illness: A Case of Multiple Sclerosis Presenting With Acute Psychosis

Poster Presenter: Amie Chen

Co-Authors: Lalleh Adhami, Elena Ortiz-Portillo, M.D.

SUMMARY:

Ms. D. is a 46-year-old homeless Caucasian female with an unknown medical and psychiatric history who was brought in by police to the medical ER for assistance with placement. On evaluation, she was found to be oddly related, had significant difficulty with ambulation, was incontinent of bladder and bowel, and had poor insight into her medical issues, stating that her difficulty with ambulation was due to a curse. She was initially able to engage in discussion with the ER physician, but quickly became agitated, appeared to be responding to internal stimuli, and refused medical workup. Psychiatry was consulted to evaluate for grave disability, and the patient was admitted to the general medicine service. While on the floor, Ms. D. received IV antibiotics for cellulitis, but was in general uncooperative, disengaged in her care, and remained unable to voice a viable plan of care. The psychiatry consultation-liaison team evaluated her, and she was given the working diagnosis of schizophrenia with recommendation to initiate trial of risperidone and transfer to inpatient psychiatry once medically stable. She was transferred to inpatient psychiatry, at which time the primary team began to suspect a medical cause for Ms. D.'s symptoms rather than primary psychiatric illness. Neuropsychological testing demonstrated significant cognitive impairment, and brain MRI showed lesions consistent with multiple sclerosis, which was later confirmed on lab findings. She was transferred back to the general medicine service for further management with a final diagnosis of neurocognitive disorder due to general medical condition (multiple sclerosis). In this poster, we aim to raise awareness of medical conditions such as multiple sclerosis that may present with neuropsychiatric symptoms. Additionally, we demonstrate the importance of identifying aspects of the clinical history and physical exam that may suggest an etiology other than a psychiatric disorder.

No. 132

Neuropsychiatric Manifestation in a Patient With Central and Extrapontine Myelinolysis: A Case Report

Poster Presenter: Rishab Gupta

Co-Author: Vaibhav Patil

SUMMARY:

Central pontine/extrapontine myelinolysis (CPEM) presenting with neuropsychiatric manifestation is a challenging clinical syndrome. Clinician should maintain vigilance for psychiatric symptoms while correcting hyponatremia. A 72-year-old male admitted for aortic valve repair and coronary artery bypass graft underwent rapid correction of hyponatremia. Within two days, he developed manic symptoms followed by catatonia. MRI changes were suggestive of CPEM. Symptomatic management was done. Severe psychiatric symptoms such as psychotic features, mood symptoms, catatonic symptoms, etc. developing in the background of rapid correction of serum sodium should be investigated thoroughly and should not be assumed to be a part of a primary mental disorder. Such rare psychiatric presentations of CPEM may also play an important role in our understanding of the etiopathogenesis of psychiatric symptoms and, perhaps, mental disorders.

No. 133**Addressing Psychiatric Symptoms Related to Antiepileptic Drug Use in Patients With Psychiatric Illness and Seizure Disorder**

Poster Presenter: Zeynep Ozinci, M.D.

Co-Authors: Bimla Rai, Sultan Y. Goksen

SUMMARY:

Background: The U.S. Food and Drug Administration issued a general warning about all antiepileptic drugs (AEDs) causing psychiatric side effects and increasing the risk of suicidal thoughts and behavior. All patients who are taking or starting on an AED should be monitored for mood and behavioral changes as well as suicidal and homicidal thoughts, especially at higher doses and during the initial titration period. It may be challenging to recognize and address the new-onset psychiatric symptoms related to AED use in the patients with psychiatric illness. **Objective:** Learn about and explore the data on psychiatric side effects of AEDs; provide strategies and increase awareness in addressing behavioral effects of AED use in psychiatric patients; demonstrate the importance of screening, monitoring, treating, and preventing psychiatric side effects of AEDs; guide safe and positive practice; and improve psychological well-being by educating

professionals, caregivers and patients. **Methods:** A literature search using PubMed was done, and 11 studies were reviewed. **Results:** AEDs are used for the treatment of mood disorders, anxiety disorders, agitation, and aggression. However, AEDs themselves can cause some psychiatric symptoms. Besides, patients with seizure disorder have a higher incidence of psychiatric illness than the general population, and this comorbidity makes the treatment more complicated. Those patients need combination therapy, which also increases the risk of side effects and the possibility of drug-drug interactions. Thus, physicians play an important role to determine the safety and tolerability profile of AEDs by recognizing and addressing serious adverse drug reactions. In a psychiatric patient who recently started an AED, any unusual changes in mood or behavior observed while taking the medication or after discontinuing the medication should be monitored closely. Behavioral disorders, agitation, aggression, restlessness, and psychosis are commonly reported as AED-related psychiatric side effects. Although the low incidence of such behavioral and psychiatric complaints was shown in placebo-controlled and prospective long-term extension trials, early recognition of neuropsychiatric symptoms, slow titration of the medication and close monitoring are essential to improve quality of life, provide the best care for the patient and prevent side effects. **Conclusion:** The treatment of physical medical conditions is sometimes prioritized over mental health by clinicians. Psychiatric side effects of AEDs are often overlooked, but are a significant consideration. Extensive research studies on potential psychiatric side effects of AEDs are creating awareness and perspective for society and health professionals. Unusual changes in mood or behavior in patients should be monitored closely. Psychoeducation, screening, monitoring, early diagnosis, and intervention are essential to reduce side effects and improve psychological well-being.

No. 134**WITHDRAWN****No. 135****A Neuropsychiatric Presentation of Multiple Sclerosis**

Poster Presenter: Joshua Ryan Smith, M.D.

Co-Author: Diana M. Robinson, M.D.

SUMMARY:

T. H. is a 30-year-old man with a past history of bipolar disorder, polysubstance use (opiates and marijuana) and borderline personality disorder. He presented to the ED on a police custody order with irritability, visual hallucinations, hypersexuality, and persecutory delusions. This episode differed due to new acute-onset hypersexual behavior, persecutory delusions, and increased mood instability and irritability. After refusing lithium, he was started on Tegretol. Although his paranoia and mood liability resolved, he continued to endorse visual hallucinations of blood on the walls. He was diagnosed with optic neuritis and new-onset multiple sclerosis. The patient was transferred to neurology and treated with five sessions of plasma exchange. Multiple sclerosis is the most common chronic neurologic condition affecting young adults. Along with its significant prevalence, multiple sclerosis can be present with a myriad of psychiatric conditions. A study of multiple sclerosis patients reported 95% prevalence of psychiatric symptomology in those previously diagnosed with multiple sclerosis. Additionally, psychiatric symptoms were likely to occur between exacerbations of the disease. As the patient in this case report has a history of bipolar disorder, it is important to discuss that patients with multiple sclerosis are twice as likely to develop bipolar disorder. However, unlike this patient, most cases of mania develop later in the course of multiple sclerosis. Also, there have been documented case reports of multiple sclerosis presenting first with exclusively neuropsychiatric symptomology. Specifically, symptoms of mania have been documented, including persecutory/grandiose delusions, pressured speech, auditory hallucinations, and a labile affect. With this aforementioned information in mind, this case is particularly interesting given the patient's stabilization after treatment for multiple sclerosis. Specifically, the patient has not required inpatient psychiatric hospitalization and, as of his most recent neurology appointment on August 16, 2016, has not demonstrated or reported an exacerbation of psychiatric symptomology. In this vein, it should also

be noted that, in the aforementioned case reports, patients who presented with primarily neuropsychiatric symptoms in the context of multiple sclerosis required long-term placement on locked units. This was due to the severity of their symptoms despite appropriate treatment. In conclusion, this patient with a longstanding psychiatric history significantly improved after the diagnosis and treatment of MS. Therefore, this case report is a valuable lesson in the consideration of neuropsychiatric etiologies in patients with manic features and neurologic deficits. It is also a unique presentation given the patient's long-term stability when compared to case reports of similar clinical presentations.

No. 136

Neurobehavioral Disorder Associated With Prenatal Alcohol Exposure (ND-PAE): Case Series Report From a University-Based Psychiatric Clinic

Poster Presenter: Ashley D. Collins, D.O.

Co-Authors: Kalpana Miriyala, M.D., Janice Hostetter

SUMMARY:

There is a wealth of knowledge related to fetal alcohol syndrome and its characteristic physical and neurological symptoms. The physical characteristics of fetal alcohol syndrome are so distinct that a diagnosis can be made even without history of maternal alcohol use. It is less widely known that maternal alcohol consumption can result in neurobehavioral symptoms in addition to ADHD. Social skill deficits, cognitive deficits, impulsivity, and poor judgement are part of the spectrum. Fetal alcohol spectrum disorders (FASD) are more difficult to identify, as patients may lack growth retardation and facial features typically seen in fetal alcohol syndrome. Further, a confirmed history of prenatal alcohol exposure is often difficult to obtain. Mothers may minimize alcohol use, while other caregivers may not know the extent of maternal alcohol use. Patients with prenatal alcohol exposure were selected from a university-based psychiatric clinic for this case series. The Diagnostic Guide for FASD, published by Washington University (FASDPN) was used to generate a four-digit diagnostic code for each patient and correlate the findings with the proposed ND-PAE diagnostic criteria. The series presents patients who do not have facial features

characteristic of fetal alcohol syndrome but do have significant impairment from neurobehavioral symptoms. Children with disorders in this spectrum need ongoing support, often into adulthood, and, at times, multiple medications to help control their behaviors. They often have learning disabilities, which if identified early, may respond to appropriate academic interventions. Other services such as speech therapy, physical therapy or long-term foster care may be warranted in some cases. Typically, these children need specialized behavioral interventions and more complicated medication regimens than for ADHD alone. For this reason, it is critical for physicians to consider this diagnosis while formulating a case, as this will ensure children can receive the ancillary services they need. Recognition of this condition in the *DSM-5* would raise awareness among health care professionals across all disciplines.

No. 137

A Case Report of Chorea Gravidarum Precipitated by Depression and Anxiety

Poster Presenter: Imran S. Qureshi, M.D.

Co-Authors: Annie Al-Najjar, M.D., Asghar Hossain

SUMMARY:

Background: Chorea gravidarum is an uncommon syndrome that describes chorea during pregnancy. Chorea is a movement disorder characterized by irregular, impulsive, short-lived, jerky movements. On many occasions, we manage chorea symptomatically with antipsychotics with variable response and often overlook precipitating factors coexistent with it. Our case report emphasizes the need of identifying the precipitants exacerbating chorea and alleviating them in the context of failure to suppress chorea gravidarum symptomatically with antipsychotics and related pharmacotherapy.

Objective: Report a case of chorea gravidarum precipitated by major depression and anxiety, which was initially managed by antipsychotic with poor response. After identifying precipitators of depression and anxiety, treating them with antidepressants resulted in successful amelioration of irregular movements of chorea. **Case:** A27-year-old Caucasian female with history of depressive disorder and two inpatient hospitalizations was admitted via the ER for psychiatric evaluation with

depressed mood secondary to worsening irregular movements that resulted in difficulty to take care of her child, subsequently leading to substantial depressive mood with significant anxiety. She reported that she had been experiencing chorea gravidarum for the last two years, which exacerbates in stress and depressed mood. The patient was admitted with a working diagnosis of major depression and started on venlafaxine. She responded well to venlafaxine, and later, her dose was optimized while being inpatient. With improvement in symptoms of depression and anxiety, intensity of chorea diminished significantly, and the patient was discharged on venlafaxine with recommendation to follow-up in outpatient clinic.

Discussion: Review of available literature has indicated that chorea gravidarum is an uncommon syndrome of chorea during pregnancy exacerbated by various precipitators. In our patient, the chorea is recurring by depression and anxiety and is responsive to treatment with venlafaxine. The key treatment is to ameliorate underlying stressors rather than empirically managing it with antipsychotics. Further studies are required to study the psychiatric presentation or disorders associated with chorea gravidarum. **Conclusion:** We have discovered that different predisposing factors may contribute to worsening chorea, as our case. In our study, the patient had responded to an antidepressant (venlafaxine), thus alleviating precipitators, and this will warrant further studies.

No. 138

Agenesis of the Corpus Callosum in an Otherwise Normal Healthy Female Diagnosed With Impulse Control Disorder: A Case Report With Literature Review

Poster Presenter: Sridhar Kadiyala, Ph.D., M.B.B.S.

SUMMARY:

The corpus callosum is the major and the largest myelinated fiber tract, containing more than 200 million axons connecting both cerebral hemispheres, and is responsible for integration of various modalities of information between hemispheres. Agenesis of the corpus callosum is a congenital defect and affects the growing fetus in the first trimester and can occur in isolation or coexistent with other genetic abnormalities, leading to

development of various neurodevelopmental disorders. Agenesis of the corpus callosum along with other abnormalities leads to various developmental issues including seizures, intellectual disability with learning problems requiring special education, and developmental and gross motor delays. Several neuropsychiatric syndromes have been identified in patients with agenesis of corpus callosum, ranging from small monogenic changes to significant chromosomal changes. In this poster, we present a case of agenesis of corpus callosum in a 26-year-old female that was unnoticeable for 22 years, other than a learning disability requiring special education throughout her academic career. Magnetic resonance imaging (MRI) of the brain was obtained as the patient subsequently developed weakness and left-sided tremor around the age of 22, which revealed complete agenesis of the corpus callosum with dysplastic left cerebellar hemisphere. The patient was referred to psychiatry for obsessive compulsive traits by her neurologist and was subsequently diagnosed with impulse control disorder with poor insight into her behavior as well as consequences, with somewhat improved behavior with medication. Our case report is first to report a patient with agenesis of the corpus callosum with impulse control disorder in an otherwise normal adult. Earlier research showed that corpus callosum size appears to be play an important role in the emergence of psychiatric illnesses like schizophrenia; however, controversy exists as patients with agenesis do not present with schizophrenia consistently. Therefore, we hypothesize the emergence of these symptoms in our patient is possibly secondary to the sequela of the decreased integration of sensory information between the cerebral hemispheres. Understanding how the brain functions in these patients with agenesis of the corpus callosum will provide valuable insights into how sensory information is processed and the potential compensatory mechanisms involved. Utility of functional MRI (fMRI) or positron emission tomography (PET) will be of crucial value in elucidating the mechanisms of physiological brain functioning and developing better therapeutics.

No. 139

Catatonia-Delirium: Role of N-Methyl-D-Aspartic Acid Antagonist

Poster Presenter: Kamalika Roy, M.D.

Co-Author: Stephen J. Warnick Jr., M.D.

SUMMARY:

Background: Indistinct boundary between catatonia and delirium suggests a possible subtype referred to as “catatonic delirium.” Due to overlapping symptoms, catatonia can be underdiagnosed within the umbrella of delirium, creating a diagnostic dilemma and challenges in successful and timely treatment. We describe a case of lorazepam refractory catatonia, initially managed as hypoactive delirium, successfully treated with N-methyl-D-aspartic acid (NMDA) antagonist memantine. **Case:** A 47-year-old female with history of depression was admitted to the medical floor with mental status changes over a period of one week. The medical team diagnosed her with hypoactive delirium due to urinary tract infection and treated with intravenous antibiotic and low-dose haloperidol as needed for agitation. Her mental status remained unchanged after four days, with a repeat urine examination without evidence of infection. Psychiatry was consulted for management of altered mental status and possible underlying psychiatric disease. Collateral source confirmed that she became withdrawn, stopped talking and eating for seven days. She was found in a bathtub, mute and confused for unknown duration of time. She stopped taking citalopram two weeks ago. On examination, she had stupor, negativism and poor eye contact, staring into space, mitgehen, verbigeration, automatic obedience, and waxy flexibility, with a fluctuating course. Diagnosis of catatonia was established. Her Bush-Francis Rating Scale (BFS) score was 35. Haloperidol was discontinued. After a trial of a maximum tolerable dose of lorazepam 12mg intravenous daily for three days, the BFS score remained at 30, with persistent drowsiness, hypotension and minimal improvement in oral intake. On day four, we started memantine and increased the dose to 10mg twice daily, considering a lack of accessibility to electroconvulsive therapy (ECT). The next day, she was more awake, alert and started eating spontaneously. There was significant improvement, with a BFS score of 17 on day six. She was subsequently discharged after one week on sertraline and memantine, with a BFS score of 3. **Discussion:** Lorazepam-unresponsive catatonia is

proposed to be associated with NMDA hyperactivity in striato-cortical and cortico-cortical pathways resulting in gamma-aminobutyric-acid-A (GABA) and dopaminergic hypoactivity. Memantine inhibits NMDA receptors to reduced glutamate excitotoxicity and improved GABA-A and dopamine environment in previously deficient areas. The relatively gradual improvement of symptoms is assumed to be due to secondary involvement of NMDA receptors in catatonia. However, there is no systematic study comparing the efficacy of NMDA antagonists with that of standard treatment with lorazepam and ECT.

No. 140

Mental Health and HIPAA in Today's World of Social Media and Smartphones

Poster Presenter: Amber Mansoor, M.D.

Co-Author: Aizaz Hundal, M.D.

SUMMARY:

Background: HIPAA holds a significant importance in the field of mental health pertaining to the very sensitive nature of the pathology and patient population it deals with. Patients suffering from mental illness are often stigmatized in society, which makes confidentiality even more crucial in the field of psychiatry. It has become increasingly difficult to maintain patient confidentiality in today's modern world of smartphones and social media, as this has created a number of new ethical and clinical challenges for practitioners who use social media to interact on the Internet or who provide online mental health services. Things like communicating with colleagues via text messages about patient care, making posts on social media about a certain interesting case out of excitement, or blogging about an unusual finding in a unique patient to raise awareness among public or colleagues can sometimes reveal protected patient health information. Such accidental and unintentional HIPAA breaches can often lead to unfortunate and serious consequences. The purpose of this quality improvement(QI) project is to raise awareness among resident physicians about HIPAA laws, to educate them about safe use of smartphones and social media while communicating with coworkers for education or continuity of care purposes, and thus to prevent any accidental privacy violations.

Methods: A scenario-based questionnaire was

developed to test the knowledge of resident physicians about HIPAA and the use of social media and smartphones. A PowerPoint presentation focused on HIPAA guidelines, their violations and legal consequences was given to educate residents. The purpose of this lecture was to enhance their knowledge not only about privacy and confidentiality but also about maintaining it while using modern technology for communication and socialization. A post-lecture survey was also conducted to assess for improvement in resident knowledge. **Results:** Pre-survey average score was 74.3% among 41 respondents. After the lecture, 29 respondents scored 91.03% in the questionnaire-based survey, which verified a significant improvement in knowledge by approximately 17%. **Conclusion:** This QI project signifies the importance of regularly educating residents about HIPAA to prevent unfortunate mishaps. This can be achieved by implementing a HIPAA-focused curriculum every year in the resident education program in addition to the standard HIPAA training. This curriculum must be modified and updated according to the most current medical practice to train well-learned, enlightened and confident physicians.

No. 141

Reducing Readmission Rates in Inpatient Settings

Poster Presenter: Carol Lim

Co-Authors: Evaristo O. Akerele, M.D., M.P.H.,

Tolulope Olupona, M.D., Olawale O. Ojo

SUMMARY:

Background: Readmissions to inpatient units remain a major challenge for cost-effective health care. Recently, New York State, through the Delivery System Reform Incentive Payment Program, commenced a \$6.42 billion effort to significantly reduce avoidable hospital use by 25% in five years. In this study, we demonstrate one modality of reducing unnecessary readmissions to psychiatric inpatient units. **Objective:** Our goal was to more effectively assist acutely ill psychiatric patients to achieve successful transition from inpatient to aftercare services, thereby reducing relapses and readmission rates. We critically assessed the impact of incorporating hospital-based bridging interventions into the promotion of adherence to outpatient care.

Methods: Individualized case management with

community outreach was implemented for acute inpatient psychiatric patients. Every patient was provided with pre-discharge contact, linked with an outpatient service provider, received regularly scheduled telephone calls after discharge, and had access to the service of a patient navigator who assisted and reinforced the adherence with treatments for 30 days after discharge. The number of patients who successfully followed up with the aftercare provider within seven days of discharge and the number of patients who continued to follow up 8–30 days after discharge were monitored for nine months to assess the effectiveness of our intervention. Also, the readmission rate within 30 days was calculated and was compared to the readmission rate before the implementation of the intervention program. The Mann-Whitney U test was used to compare differences in readmission rate before and after the intervention. **Results:** A total of 1,236 patients in acute inpatient psychiatric units participated in our intervention program. The participants were monitored up to 30 days following discharge for aftercare attendance. On average, 32% of patients who received the intervention successfully followed up with the aftercare provider within seven days of discharge. About nine percent of patients who received the bridging intervention continued to follow up with aftercare provider 8–30 days after discharge. The readmission rate before implementation of the intervention was 9.21%. Following implementation of the intervention, the average readmission rate for the subsequent four months fell to 5.77% ($p=0.016$). **Conclusion:** Personalized case management and aggressive outreach to the patients before and after discharge reduced the rate of readmission by 37% ($p=0.016$). The data suggest that these modalities could significantly improve readmission rates and therefore result in more cost-effective care.

No. 142

Establishing Prolactin Monitoring Guidelines for Risperidone Use

Poster Presenter: Ian Peters, D.O., M.P.H.

Co-Authors: Sergey Mirakov, M.D., Quratulain Agha, M.D., Seetha Chandrasekhara, M.D., William Dubin

SUMMARY:

Background: Elevated prolactin levels have been

implicated in bone density loss and the growth of some cancers. Risperidone is the second-generation antipsychotic most likely to increase prolactin levels, but there are currently no established guidelines for monitoring prolactin levels. **Objective:** Create a questionnaire to assess the sexual and reproductive side effects of risperidone and establish a protocol for prolactin monitoring. **Methods:** We developed a three-point questionnaire that assesses sexual and reproductive health. We also asked about any change in breast fullness to include galactorrhea. We administered our questionnaire and evaluated prolactin levels on all patients in our outpatient psychiatry department who were on risperidone. **Results:** There were a total of 13 patients prescribed risperidone. Of these patients, three (24%) reported at least one side effect on our questionnaire. The average prolactin level in males was 36.5ng/mL (normal is under 18ng/mL) versus females of 39.5ng/mL (normal is under 29ng/mL). There was a disproportionate number of males with elevated prolactin levels—five (83%) versus two females (29%). Doses of risperidone prescribed ranged from 1mg to 2mg per day. **Conclusion:** Our preliminary study suggests that even with modest dosing, risperidone may greatly elevate prolactin levels. Males could be more at risk. Routine screening questions and yearly prolactin levels may assist the patient and clinician in making an informed decision of whether to stay on risperidone.

No. 143

Substantial Decline in Seclusion Episodes in an Academic Medical Center's Acute Psychiatric Hospital Through Implementation of Trauma-Informed Care

Poster Presenter: Luke Misquitta

SUMMARY:

Background: Despite patient safety goals, efforts to sustain a therapeutic milieu and pressure from regulatory bodies, the use of seclusion and restraint for patients in acute psychiatric hospitals remains of concern. These interventions incur substantial risk, but may be necessary to maintain safety on an acute unit during behavioral health emergencies.

Methods: The leadership at an academic medical center of a 73-bed psychiatric hospital for adolescents and adults envisioned a substantial

effort to train staff, including security personnel, on trauma-informed care. Among goals of this massive undertaking were to determine if these interventions led to any changes in number of episodes of seclusion for patients receiving care in the hospital. Additional measures included episodes of physical assault and total aggression. **Results:** The number of episodes and hours of seclusion among patients in an acute psychiatric hospital was substantially lower over time (by 68%) since trauma-informed care was implemented thoroughly throughout the psychiatric hospital over the last 3.5 years. The number of physical assaults was reduced by 80%, and the number of total incidents of aggression was reduced by 72%. **Conclusion:** Patients in need of acute psychiatric hospitalization are also those demonstrating severe behaviors, putting them at risk for seclusion. Through implementation of trauma-informed care and additional staff educational efforts, significantly positive gains in reducing seclusion and aggression have occurred, thereby contributing to a more safe and therapeutic environment for recovery.

No. 144
Smoking Cessation Awareness in an Outpatient Psychiatric Clinic: A Resident-Run PI Project

Poster Presenter: Amina Hanif, M.D.
Co-Authors: Panagiota Korenis, M.D., Rahulkumar Patel, M.D., M.B.B.S., M.P.H., Ketki Shah, M.D.

SUMMARY:

Smoking is the leading cause of preventable morbidity and mortality worldwide, responsible for more than five million deaths annually. Approximately half of regular smokers will die prematurely of nicotine-related diseases, losing an average 10 years of life compared with those who have never smoked. Smoking is an important concern for psychiatrists and their patients, as those with mental illness have a higher rate of smoking than the general population and smoke twice as many cigarettes as smokers without mental illness. While it has been shown that smoking cessation significantly improves life expectancy, decreases morbidity and reduces health care costs, it is unclear from the literature how often psychiatrists prescribe interventions to promote smoking cessation. Evidence suggests that clinicians can employ

effective prevention strategies to help their patients stop smoking. Current guidelines for smoking cessation interventions incorporate behavioral change models and pharmacotherapeutic tools. This resident-driven quality improvement project assesses the basic knowledge clinicians in outpatient psychiatric settings possess about the health risk factors associated with smoking and smoking cessation interventions and how often they utilize these tools with their patients. This baseline data are collected by anonymously surveying clinicians in our outpatient psychiatry clinic. Further, educational initiatives and recommendations to improve clinician awareness about smoking cessation intervention will be discussed.

No. 145
Why Do So Few Medical Students Become Psychiatrists?

Poster Presenter: William Levitt, M.D.

SUMMARY:

Very few students enter the field of psychiatry relative to other specialties. However, obtaining a psychiatric residency has become increasingly competitive. As part of a psychiatric residency with over 2,000 applicants, we aim to investigate the reason why residents choose this field over others. Residency applicants who are interviewed will be given a survey determining the major factors as to why this career path was chosen. The same survey will be given to third-year medical students doing their core rotation at this hospital who have chosen another field. Additionally, a literature review will explore reported reasons as to why psychiatry is or is not chosen.

No. 146
Implementation of a Validated Suicide Risk Assessment Tool in Behavioral Health and Acute Care Settings for Suicide Assessment and Treatment

Poster Presenter: Victor M. Gonzalez Jr., M.D.

SUMMARY:

A large health care system in central Texas faced the challenge of revamping their suicide risk assessment tool, which was not validated. This tool had led to inappropriate allocation of resources, underidentification of high-risk patients as

evidenced by an ongoing serious safety events and a lack of standardized clinical pathways. The purpose of this project was to highlight efforts toward the implementation of an evidence-based tool, based on the Columbia Suicide Severity Rating Scale (C-SSRS), for use in behavioral health and acute care settings for improved suicide assessment and treatment. Initial efforts were aimed at forming a clinical sub-team to review available tools for adoption. Additionally, an analytics sub-team was formed to evaluate key performance indicators for the project, as well as mapping out the workflow and process structure of a behavioral health hospital where the initial pilot site for adoption of the new tool was carried out. This project identified both the facilitators and barriers to tool implementation, described training and deployment plans, discussed approaches to testing the validated tools in behavioral health settings, and demonstrated how processes and outcomes for this initiative were monitored. The results from this initial pilot study will be used to further optimize future rollouts of this validated suicide risk assessment tool in other health care sites within the health care system.

No. 147

Reducing No-Shows and Walk-Ins in a Busy County Outpatient Psychiatric Clinic: A Quality Improvement Project

Poster Presenter: Talene Keshishian, M.D.

Co-Author: Chris Chen, M.D.

SUMMARY:

Background: Failure to attend scheduled appointments results in decreased service efficiency, patient dissatisfaction and poor clinical outcomes while subsequently disrupting clinics with unscheduled walk-in visits. **Objective:** Reduce walk-in and no-show rates in an outpatient psychiatric clinic. **Methods:** Four cycles of Plan/Do/Study/Act (PDSA) quality improvement guidelines were completed. In cycle 1, questionnaires were used to assess reason for walk-ins. In cycle 2, patients were randomly assigned by resident provider to receive a telephone call reminder of their upcoming appointment. In cycle 3, contact information was updated and patients were asked if they would consent to text messaging reminders. In cycle 4, patients with more than three no-shows or walk-ins

over the course of the past year were identified for assignment to a walk-in clinic. **Results:** Cycle 1: Questionnaires were given to residents for 151 walk-in patients over a span of 10 weeks; 81 (53%) were returned. The most frequently cited reason for walk-in appointments was running out of medications due to forgetting an appointment. Cycle 2: Residents whose patients were assigned to receive telephone call reminders and were directly contacted had a lower no-show rate than residents whose patients who did not receive reminders (9.73% vs. 25.13%, $p=0.048$). They also had a lower percentage of walk-ins (41% vs. 59%, $p=0.003$). Cycle 3: Over five days, 26 random patients were asked for their contact information; 19 required telephone updates and 11 agreed to receive text message reminders in the future. Cycle 4: Patients with high no-show and walk-in rates were identified for a walk-in clinic, and Friday mornings were identified as the most frequent time patients presented for walk-ins.

Conclusion: Patients walk in to an outpatient psychiatry clinic most frequently due to running out of medications because of no-showing to a previous appointment after forgetting that appointment. Providing direct contact reminders decreased no-show rates and walk-in numbers. Keeping contact information updated in charts can help improve direct contact, and designing a walk-in clinic may help further decrease no-shows and unpredictable walk-ins.

No. 148

Medical Decision Making of Unrepresented Patients

Poster Presenter: Mahmoud Aborabeh, M.D.

Co-Authors: Saba Syed, M.D., Monika Chaudhry, M.D.

SUMMARY:

Background: Patients who are decisionally incapacitated and have no advance directives for their health care and have no health care surrogates are often called as "unrepresented." For emergent medical treatments, most physicians are comfortable proceeding with two-physician consent. For non-emergent interventions in the hospital setting, in most states, the medical decision making for the unrepresented patient is referred to the local judicial system. It was our experience that the court would usually take at least 30 days for approval. This

led to delay in treatment, longer hospital stay, elevated burden on the court system, higher risk for hospital-acquired infections, and overall increased need for more emergent procedures with subsequent necessity for higher level of care in the ICU. In order to strike an appropriate balance between decision makers who are responsive and can make timely decisions and decision makers who are independent from the treating clinicians, we developed an ethical policy, adopting California Health and Safety code 1418.8, which permits skilled nursing facilities (SNFs) to use interdisciplinary teams to make medical decisions for unrepresented patients. **Methods:** Under our new hospital policy, we convened ad hoc unrepresented patient committee meetings to collectively make decisions regarding specific non-emergent interventions needed in the acute medical setting. This ad hoc committee consists of the primary attending, any involved consultants, nursing staff, the social worker, a physician not engaged in the care but knowledgeable about the treatments/procedures being recommended for the patient, a chaplain, and one to two bioethics committee members. **Results:** From January 2015 to August 2016, the committee received consults for 32 patients aged 26–92. Twenty-three (71.8%) of them were males, and nine (28.2%) were females. Seven (21.8%) of the patients were in the ICU. The committee convened 21 times. Reasons for the meeting not to be convened included finding a surrogate, the intervention was cancelled or became emergent, and the patient regained capacity or was discharged. The committee consented to different interventions like DNR/DNI, comfort care, dialysis, bronchoscopy, NG tube placement, IV medication management, and others. The committee applied the ethical criteria for decision making and exhibited a greater ability to diligently represent patients' interests, consider various perspectives, and weigh both medical and nonmedical considerations. **Conclusion:** The implementation of such a committee led to a significant decrease in the time for decision making, from at least 30 days needed for court petition to 5.4 days in 2015 and 7.3 days in 2016. Subsequently, this resulted in more collaborative care, with further feasible goals of care, decrease in utilization of hospital resources, and reduction of burden on the ICU as well as the court system. Moreover, there

was substantial alleviation of pressure on primary physicians, who are often left alone to make such decisions.

No. 149

High-Lethality Suicide Attempt as a Precipitant of Acute Stress Disorder

Poster Presenter: Alyson Gorun

SUMMARY:

Background: Acute stress disorder (ASD) is a known risk factor for completed suicide. However, little is known about instances in which nonfatal suicide attempts (SAs) might themselves serve as traumatic events that predispose individuals to acute stress reactions. In this poster, we present a case of a woman with an acute stress reaction following a high-lethality SA and discuss the prognostic and therapeutic implications. To our knowledge, this is the first case report to describe an SA as a traumatic event that precipitated ASD. **Case:** Mrs. D. is a 65-year-old married Caucasian woman with bipolar II disorder, no prior hospitalizations or SAs, who was admitted to an inpatient psychiatric unit following a high-lethality SA. Prior to admission, Mrs. D. had been functionally incapacitated secondary to three months of severe depression, anxiety, sleep dysregulation, irritability, and impulsivity. On the day of admission, she attempted suicide by placing a space heater into her bathwater, and when that did not result in injury, she used a kitchen knife to lacerate her body, requiring medical admission. At time of transfer to an inpatient psychiatric unit, Mrs. D. exhibited depressive symptoms (HAM-D: 27/58) and marked alexithymia (TAS: 65/100), but no symptoms of mania (YMS: 3/60) or psychosis. Additionally, Mrs. D. met criteria for ASD with suicide attempt-related symptoms of intrusion, negative mood, dissociation, avoidance, and arousal. Mrs. D. received 10 ECT sessions and psychotherapy aimed at her ASD symptomatology. She was discharged 1.5 months later on venlafaxine 225mg daily and Depakote 500mg daily (last level 120µg/mL). Her HAM-D was 4/58. **Discussion:** Screening for an SA as a precipitant of an acute stress response is not included in commonly used tools such as the Live Events Checklist. Identification of acute stress symptoms has important prognostic ramifications, including development of PTSD,

worsening long-term prognosis and contributing to suicidality. Thus, treatment aimed specifically for ASD symptomatology, including CBT, exposure therapy and psychoeducation, would result from appropriate screening. This case report highlights the prognostic and therapeutic importance of recognizing SAs as a trauma. We believe that patients should be screened for acute stress response following high-lethality SAs in order to facilitate early intervention to reduce the patients' risk of developing PTSD and associated comorbidities.

No. 150

Traumatic Childhood and Cannabis Use in Adolescence

Poster Presenter: Askar Mehdi

Co-Author: Arham Abbas

SUMMARY:

Background: In the *DSM-5*, the diagnosis of PTSD requires exposure to actual or threatened death, serious injury, or sexual violation. PTSD has disturbance for more than a month with four categories of diagnostic clusters. They are construed as re-experiencing, avoidance, negative cognitions and mood, and hyperarousal. Individuals are susceptible to trauma very early in life. Preschoolers, toddlers and even infants are at increased risk for being exposed to a trauma, including direct abuse or neglect, witnessing interpersonal violence, motor vehicle accidents, etc., that places them at risk for PTSD. Affected children with limited cognition are likely to exhibit intense emotional or physical reaction, which can easily distract and misdiagnose a child with mood disorder or attention deficit disorder. Inability to properly diagnose children at the right time can result in inappropriate care and self-medication with substance use; a typical case of this nature with legal involvement was seen at a juvenile correctional facility. **Methods:** A literature search was performed with search engines including PubMed, the electronic library at the University of Connecticut and articles from references. **Case:** This is a case of an 18-year-old male who, during his childhood, was diagnosed with dyslexia and learning disability and was exposed to significant bullying and witnessing of domestic violence. He was diagnosed with ADHD during his childhood and later, due to

extreme emotional and affective instability, was diagnosed with unspecified mood disorder. He was initially started on Concerta in childhood, which caused worsening of symptoms, and hence was switched to clonidine, which was somewhat helpful. Further, risperidone was added to address affective instability and aggressive behavior with limited response. He started self-medicating himself with cannabis about half a blunt daily to numb his memories from childhood and continued bullying at school. He was later diagnosed with PTSD around age 16 and was started on Zoloft. Instead he continued to use cannabis daily, as he claimed it helped him better with blocking distressful memories and his hyperarousal and sleep difficulties. He expressed no interest in therapy work reported and dropped out of 12th grade at school. His first involvement with the legal system was around age 17 secondary to cannabis use. No depressed mood or anhedonia was reported. No psychotic symptoms were reported. There is a family history of anxiety in his mother, but no other complaints or mental issues. On examination, he was anxious and hypervigilant but cooperative. He was awake and oriented. He had normal speech and good attitude. He had full range of affect, and his mood was anxious. His insight was fair, and judgment was poor given recent legal involvement and self-medication. He denied suicidal or homicidal ideation at the time. His urine toxicology was positive for THC. He was started back on Zoloft with plan to engage in therapy work around traumatic experiences.

No. 151

Prazosin in Posttraumatic Stress Disorder—Keeping a Pulse on the Patient's Pressure: A Case Report

Poster Presenter: Jenny Shen, M.D.

Co-Author: Neha Husain

SUMMARY:

Ms. F. is a 48-year-old African-American woman with PTSD, major depressive disorder, hypertension, type 2 diabetes mellitus, and stage 2 chronic kidney disease who was admitted to our inpatient psychiatric unit for a suicide attempt in the setting of worsening physical health. Two months prior to this admission, she had had two episodes of non-obstructive coronary artery disease, a stroke,

congestive heart failure, pneumonia, and kidney injury. After two months in the hospital, she was medically cleared, discharged from the medical unit and sent home, where she began having worsening symptoms of depression and PTSD and was ultimately admitted to our unit five days later. She was started on prazosin 1mg for her nightmares. The morning after her first dose, her blood pressure was 81/56 with associated presyncope and prerenal azotemia requiring transfer to the medical unit, where the medical team recommended she avoid prazosin indefinitely. PTSD is a serious public health problem with a lifetime prevalence of 6.8%. Current guidelines list SSRIs as first-line pharmacological agents, but their tendency to disrupt sleep further exacerbates an already debilitating feature of PTSD. Higher norepinephrine states have been correlated with more severe PTSD symptoms, especially nightmares. Prazosin is a lipid-soluble α 1-adrenergic receptor antagonist that decreases the sympathetic outflow in the brain. As a result, the past decade saw a surge in prazosin research for its alleviating effects on nightmares and hyperarousal of PTSD. The American Academy of Sleep Medicine gave its use for PTSD-associated nightmares an A recommendation; the updated 2010 Veterans Affairs/Department of Defense guidelines gave it a B recommendation. On the whole, the literature on prazosin use for PTSD has been overwhelmingly positive regarding its efficacy and tolerability. The case of Ms. F. serves as a reminder that in medically complex patients, even a popularly effective and safe agent such as prazosin should be considered in the context of overall benefit versus harm toward the patient's long-term goals. Additional research is needed to classify who among medically complex patients should warrant additional considerations.

No. 152

Does Ecstasy Have a Therapeutic Potential? A Review of MDMA-Assisted Psychotherapy in Treatment-Resistant PTSD

Poster Presenter: Jamie R. Sweigart, D.O.

Co-Author: Deepak Prabhakar, M.D., M.P.H.

SUMMARY:

Background: Posttraumatic stress disorder (PTSD) is a challenging clinical disorder with broader public health ramifications. In the U.S., the lifetime

prevalence of PTSD in the general population is approximately eight percent. Returning U.S. combat veterans are noted to have a higher prevalence ranging from 8.5 to 24.5%. Current pharmacological and therapy treatments have a modest effect and are limited due to a low response and even lower remission rate. Further, studies are limited by a high dropout rate, limiting application of findings to a more chronic lifelong presentation requiring maintenance strategies for sustained remission. Given the current state of the clinical management of PTSD, novel agents, such as 3,4-methylenedioxymethamphetamine (MDMA), are gaining attention as an adjunctive agent for the treatment of PTSD. In this study, we review the evidence regarding MDMA-assisted psychotherapy and report findings based on controlled human trials specifically for treatment-resistant PTSD. **Methods:** We conducted a Medline literature search using the keywords "MDMA," "3,4-methylenedioxymethamphetamine," "ecstasy," "posttraumatic stress disorder" and "PTSD." We only included human clinical trials that were published in English. **Results:** The dose of MDMA and number of sessions ranged from 25–225mg and one to five sessions, respectively. Two studies utilized the Clinician Administered PTSD Scale (CAPS); one of these also included the Posttraumatic Diagnostic Scale (PDS), while the Severity of Symptoms Scale for PTSD (SSSPTSD) was used in one study as a PTSD measure. Taken together, the studies rendered a predominantly female sample of 38 subjects; 23 received the active treatment while rest received placebo, and almost 74% (17 out of 23) of the patients responded to MDMA as defined by the study protocols. Overall, adverse events were not observed frequently; however, samples were not adequately powered to conclusively rule out tachycardia, hypertension, anxiety, insomnia, etc. **Conclusion:** Though promising, preliminary data from MDMA-assisted psychotherapy for treatment-resistant PTSD should be interpreted with caution and at best may serve as "proof of concept." Clinically meaningful interpretation is limited by small sample size in relatively shorter-duration trials with potential high expectancy bias among study participants.

No. 153

Validation of the Korean Version of Trauma Symptom Checklist-40 Among Psychiatry Outpatients: A Korean Validation Study

Poster Presenter: Jin Park

Co-Authors: Nak Young Kim, Yong Chon Park, M.D., Ph.D., Chong Ki Kim

SUMMARY:

Background: The effects of multiple trauma are complex and extend beyond core PTSD symptoms. The Trauma Symptom Checklist-40(TSC-40) is a self-report scale that assesses symptoms associated with childhood or adult traumatic experience. The purpose of this study was to evaluate the validity of the Korean Version of the TSC-40 in a sample of psychiatric outpatients. **Methods:** 367 outpatients aged from 17 to 77 participated in this study. They visited the university hospital's psychiatric department and were diagnosed with mental disorder. They checked six self-reports: TSC-40, Trauma Symptom Inventory, Life Events Checklist, Impact of Event Scale, Zung's Self-Report Depression Scale(SDS), and Zung's Self-Report Anxiety Scale(SAS). SPSS version 19.0 was used for analysis. **Results:** Exploratory factor analysis of the Korean Version of the TSC-40 extracted an eight-factor structure accounting for 58.225% of total variance. Otherwise, the original version was a six-factor structure. The Korean Version of the TSC-40 demonstrated a high level of internal consistency (Cronbach's alpha=0.97). Subscales (anxiety and depression) were positively correlated with SDS and SAS, and most subscales were positively correlated with TSI. This demonstrated concurrent and convergent validity. **Conclusion:** The Korean Version of the TSC-40 had excellent internal consistency. Also, concurrent and convergent validity data showed that it was comparable to the original version. However, factor structure was different from the original version. We suggest that it was due to cultural difference. For example, Hwa-Byung is a representative disorder that reflects cultural difference. The results suggest that cultural difference should be considered when the TSC-40 is used.

No. 154

Prediction of Adolescent Alcohol Abuse and Posttraumatic Stress Disorder Following Disaster

Exposure

Poster Presenter: Robert Fuchs

Co-Authors: Tonya Hansel, Joy Osofsky, Howard J. Osofsky, M.D., Ph.D.

SUMMARY:

Background: Hurricane Katrina of 2005 and the Deepwater Horizon oil spill of 2010 created long-term posttraumatic stress and depression symptoms in both adults and adolescents who experienced these disasters. While the PTSD-related effects of both events have been investigated, a paucity of knowledge exists regarding post-Katrina alcohol use by disaster-affected adolescents. Since many people affected by these disasters were youths, investigation of the relationship between adolescent alcoholism and disaster exposure is warranted.

Methods: Schools administered the LSUHSC Department of Psychiatry Disaster Interview survey to 459 high school adolescents (age 14-18) in St. Bernard Parish of Louisiana who had been exposed to both the hurricane and oil spill. Survey questions assessed the socioeconomic status, emotional states and level of alcohol use of each individual. Based on the participants' degree of disaster exposure, we used logistic and multiple regressions to predict alcohol abuse and PTSD in each adolescent. **Results:** Logistic regression to determine alcohol use based on exposure to Hurricane Katrina; exposure to the oil spill; and self-reported feelings of anger, depression, loneliness, and family problems had a successful prediction rate of 71.4% (90.5% correct for nonusers and 34.4% correct for users). There was a modest ability to control for variability within the data (Nagelkerke $R^2=0.149$). Multiple regression to predict severity of PTSD symptoms based on alcohol use; oil spill and Hurricane Katrina exposure; and self-reported feelings of anger, depression, loneliness, and family problems yielded a statistically significant model, $F(7,439)=52.0$ ($R^2=0.44$, $p<0.001$). These predictors each contributed to the regression in a manner that was statistically significant ($p<0.05$). **Conclusion:** Adolescents who were highly exposed to Hurricane Katrina and the Deepwater Horizon oil spill show higher levels of alcohol abuse and emotional trauma compared to their peers with lower exposure to these disasters. These findings imply that social support to help adolescent disaster victims with feelings of depression, anger and

loneliness may reduce alcohol use in these populations. Our findings have implications for the importance of mental health services in youth groups that have experienced emotional trauma.

No. 155

Moving Toward Healing: Dance/Movement Therapy in the Treatment of Trauma Patients

Poster Presenter: Elizabeth Langmore-Avila, D.O., M.A.

SUMMARY:

The psychiatric sequelae of trauma can feel indelible to our patients. Especially with regard to histories of repetitive abuse within an environment of childhood toxic stress, these individuals' symptoms can be particularly debilitating and refractory to treatment. There is awareness in our field of how persistent and pervasive the symptoms of complex trauma are, in such a way as to render incomplete the description offered of PTSD in the *DSM-5*. We are often faced with only partial treatment responses, whether these be via medication, traditional therapy or other modalities. A more comprehensive, nuanced approach is needed in order to provide more complete symptom relief for these patients. Dance/movement therapy has been utilized for many years to treat patients with trauma histories, and yet the modality is underrecognized by the field of psychiatry in general. This poster explores the existing evidence of how dance/movement therapy has been utilized in the treatment of trauma for a range of patient populations, from survivors of incest to former child soldiers. As our understanding of the neurobiology of trauma grows, it is becoming more evident why certain treatment approaches can address symptoms only in a partial manner. The way in which traumatic memories are stored, especially those that occur prior to an individual having the language or reference points to conceptualize what is happening, is neither a linear nor a logical process and as such cannot be accessed or ameliorated by verbal means only. Dance/movement therapy, in its direct understanding of how developmental and affective experiences are manifested in the body in a myriad of ways and across many systems, has much to offer psychiatry in terms of a holistic approach to treatment of our trauma patients. Interventions are individually tailored to fit the needs of the patient

within a contained environment. These may include narrative, projective and embodied approaches and can fit into a treatment plan that also includes medication management. The goal of this poster presentation is to introduce the viewer to dance/movement therapy as a safe, effective and creative treatment modality and to advocate for its active inclusion in treatment planning. By providing a holding environment and enabling individuals to guide the pace, content and intensity of treatment, and encouraging them to explore, integrate and make meaning from their traumatic experiences, dance/movement therapy represents a powerful tool for healing that can be used to provide our patients with more complete and lasting relief from their symptoms.

No. 156

WITHDRAWN

No. 157

Diagnosing and Managing Delirium-Induced Flashback in a Patient With Underlying Mood Disorder

Poster Presenter: Zara Masood

Co-Author: David Leavitt

SUMMARY:

Ms. S., a 53-year-old White female with history of depression and anxiety, presented for outpatient psychiatric assessment 10 months after a right upper lobe lobectomy for carcinoma of the lung. Her post-op course was complicated by metabolic encephalopathy, hyperthermia, tachycardia, confusion, and delirium. She was unable to maintain her oxygen saturation and was intubated. She had multiple pulmonary infections requiring antibiotics. She reported "losing her mind" with hallucinations since discharge from the hospital. On elaboration, she described these hallucinations as traumatic intrusive vivid recollection of her perceptual changes experienced during the course of her delirium. She reported flashbacks of "a nurse assaulting her father" and "her being abandoned on a rooftop in the back of an ambulance." She experienced these recollections of her delirium as traumatic and also reported nightmares, avoidance of seeking medical care, hyperarousal, and anger outbursts. Brain MRI two months prior was negative for acute processes

or metastatic disease. Extensive medical work up was unremarkable. After thought history gathering and review of medical records, she was diagnosed with posttraumatic stress disorder. She was started on prazosin along with weekly psychotherapy with supportive interventions. Immediately after the diagnosis was discussed, she felt relieved. Within two weeks, frequency and intensity of these flashbacks lessened, and by two months, she was no longer distressed by these recollections. This led to concern of suboptimal screening and management of PTSD in patients after delirium. Had this patient understood more about her symptoms, her distress would have been much less about her perceived notion of losing her mind. It is essential to follow up during the recovery period with patients in the ICU and following delirium to evaluate for delirium-induced PTSD. Research studies suggest higher PTSD scores in association with frightening experiences in the ICU. Also, patients with underlying psychiatric illness are at a higher risk. In this poster, we discuss the need for screening, understanding predisposing risk factors and adequately treating patients with delirium-induced PTSD. If untreated, these symptoms can persist and impair quality of life.

No. 158

Using Videoconferencing to Deliver TIMBER Psychotherapy for PTSD: A Case Report on an Indian Client

Poster Presenter: Sindhura Kunaparaju

Co-Authors: Basant K. Pradhan, M.D., Tapan Parikh, M.D., M.P.H.

SUMMARY:

Trauma interventions using mindfulness-based extinction and reconsolidation of trauma memories (TIMBER) is a novel psychotherapy for PTSD that targets trauma memories and their expressions using both extinction and reconsolidation mechanisms. In this poster, we present successful use of TIMBER using videoconferencing for an Indian client with refractory PTSD. Mrs. X. is a 46-year-old Indian female from higher socioeconomic background, married and currently employed, who has past psychiatric history of OCD and major depressive disorder. She has clinical symptoms of severe PTSD and dissociative disorder as evidenced by her inability to experience a sense of self for the

last 16 years. These symptoms are likely from repeated emotional abuse by her mother-in-law over the first eight years of her married life. She experienced a tremendous amount of stress due to symptoms of depersonalization and dissociation and exhibited suicidal behavior in the past, leading to multiple hospitalizations. She requested to try TIMBER psychotherapy due to a lack of effective treatments in her area and deterioration of her symptoms despite good adherence to treatment for several years, including her current medications (lithium 400mg oral daily, escitalopram 40mg oral daily) and administration of six courses of ECT with many CBT sessions. We obtained written consent, confirmed diagnosis and initiated TIMBER therapy by videoconferencing with guidance for home practice. The format involved supervision of SK by BP every week regarding treatment strategies and specific techniques on delivering TIMBER via videoconferencing. Seven sessions of TIMBER have been delivered (first four sessions weekly and other three sessions every two weeks), which included guidance on twice-daily home practice and as-needed STOPP module. Her lithium and escitalopram were continued at the same dose throughout the course of TIMBER. Progress was assessed clinically and also by serial administration of PTSD Symptom Checklist and ASMI scale for mindfulness. After four sessions, she had significant improvement in the above measures and reached clinical remission after six sessions, which she maintained until four weeks after the seventh session. The patient did not feel the need to practice any more and didn't participate in videoconference sessions for five weeks, after which she started to relapse on her symptoms. We have started her first booster session, and she continues to successfully improve on her symptoms with improved insight. In this poster, we discuss the implications of TIMBER in various clinical settings as adjunctive treatment options as well as standalone therapy for PTSD and utility of telepsychiatry as an effective tool to expand access to care in remote areas.

No. 159

Dronabinol as an Adjunctive Treatment for PTSD

Poster Presenter: Par Towb

SUMMARY:

We present the case of a 27-year-old male servicemember suffering from PTSD from military sexual trauma and unresponsive to several therapy and psychopharmacological interventions who improved dramatically after addition of the cannabinoid dronabinol to his treatment regimen. The patient had been receiving treatment with several different therapy modalities for over eight months, with little improvement, and he had not improved with therapeutic dosages of two different SSRIs. Upon starting venlafaxine, the patient achieved slight symptomatic relief but was unable to tolerate dosages higher than 75mg daily. At the same time, accelerated response therapy (ART) was being attempted with the patient, who showed some response, but associated emotional distress prevented him from fully engaging and benefiting from the therapy. After initiating a low dose of dronabinol, the patient's affect changed positively within days, and he became more engaged in ART. He described much less emotional distress and stopped being as avoidant of social situations. Within three months of the addition of dronabinol, coinciding with his newfound ability to tolerate ART, his PTSD symptoms dramatically declined, evidenced by a reduction of over 60% in PCL-5 scores. We suggest that addition of dronabinol to PTSD psychopharmacology regimens may serve to assist therapeutic response.

Medical Student/Resident Poster Competition and International Posters

No. 1

Parenting Discipline Styles and Child Psychopathology Among a Sample of Egyptian Children With Accidental Ocular Trauma: A Case Control Study

Poster Presenter: Mohammad Seleem

Co-Authors: Rabab El-Seht, Sameh Saada

SUMMARY:

Background: Ocular trauma is a serious problem in children and adolescents that can be troubling for them and their families. Psychosocial risk factors for eye trauma are understudied, especially in Arab and Egyptian populations. This study evaluated the probable role of child psychopathology and parenting discipline styles in the predisposition for

eye trauma in Egyptian children and adolescents.

Methods: Forty patients age 3–18 with accidental eye trauma and 40 control subjects within the same age range were recruited. A validated Arabic version of the Child Behavior Checklist (CBCL) and an Arabic translated and validated version of the Conflict Tactic Scale–Parent-Child Version were applied to evaluate the sample. **Results:** After statistical adjustment for differences in socioeconomic status, youth with eye trauma showed higher rates of rule breaking behavior and attention deficit/hyperactivity disorder (ADHD) as compared to the control group. Families of children with eye trauma reported a tendency to use less nonviolent discipline and more current and lifetime physical punishment as compared to the control group. **Conclusion:** Childhood behavioral disorders, such as ADHD, and parental tendency to use physical punishment as a pattern of discipline might predispose youth to serious accidental injuries, including eye trauma. Proper evaluation, diagnosis and treatment for ADHD, together with community programs that enhance nonviolent discipline techniques, will help in both primary and secondary prevention of ocular trauma.

No. 2

Non-Monosymptomatic Enuresis Is Strongly Associated With Attention Deficit/Hyperactivity Disorder in Chinese Children

Poster Presenter: Sharon Yu Ming Wong

SUMMARY:

Background: Attention deficit/hyperactivity disorder (ADHD) and primary enuresis (PE) are both prevalent conditions in school-age children. Past research has identified a high co-occurrence rate of these two disorders. However, none of these studies have involved the Chinese population. Moreover, because of the semantic inconsistency of various enuretic terminologies, the relationship of ADHD with different subtypes of enuresis is unclear. To aid future research investigations, the International Children's Continence Society (ICCS) has clearly defined enuresis into monosymptomatic enuresis (ME) and non-monosymptomatic enuresis (NME). However, the association of ME or NME with ADHD has been underinvestigated. **Objective:** Investigate the relationship between PE and ADHD in Chinese

children and further explore their associations when enuretic subtypes are defined, namely ME and NME.

Methods: This cross-sectional study was conducted between August 2014 and April 2015. A total of 51 children with PE and 90 control subjects aged 6–12 were consecutively recruited from a single pediatric renal clinic in Hong Kong. The diagnosis of PE was established by a pediatrician and further sub-classified into ME and NME according to the ICCS 2006 criteria. All subjects were screened by the parent-rated Strengths and Weaknesses of ADHD-Symptoms and Normal-Behaviors (SWAN) questionnaire and were confirmed to have a diagnosis of ADHD by the Diagnostic Interview Schedule for Children Version IV (DISC-IV). The association of ADHD with PE and its subtypes were analyzed, adjusting for age, gender and socioeconomic status. **Results:** Among children with PE, 20 and 31 of them were subtyped as ME and NME, respectively. The adjusted odds ratio (aOR) for children with PE to suffer from ADHD was 5.91 (95% confidence interval [CI] [1.89, 18.43]; $p=0.002$), compared to control. When only children with NME were considered, the aOR for ADHD to occur was 8.72 (95% CI [2.46, 30.89]; $p=0.001$). The frequency of ADHD in children with ME was not significantly different from control. **Conclusion:** ADHD is highly associated with PE, especially NME in Chinese children. Their close linkage underscores the clinical importance of differentiating enuretic subtypes according to the ICCS criteria, allowing for the early identification of ADHD in children with NME.

No. 3

Parental Causal Explanations and Treatment Seeking in ADHD: Perspectives From a Developing Nation Based on Process Theory

Poster Presenter: Ruchita Shah

Co-Authors: Akhilesh Sharma, Sandeep Grover, Nidhi Chauhan, Soumya Jhanda

SUMMARY:

Objective: Explore causal explanations and treatment seeking among parents of children with attention deficit/hyperactivity disorder (ADHD) and understand these in a cultural context using process theory. **Methods:** Consenting parents of 27 children diagnosed with ADHD were enrolled in the qualitative research study conducted in India, a

developing nation with largely collectivistic values. In-depth semi-structured interviews were conducted. Data were interpreted in their cultural context. **Results:** A majority (N=12) of the 21 parents where referral to the child psychiatric clinic was from teachers, other medical agencies and relatives (i.e., other than self-referral), initial reaction revealed themes of disbelief/surprise, feeling confused/offended and taking 6–36 months to seek help. Two parents had initial disbelief but quickly accepted the suggestion of a consultation, while the remaining seven were relieved and willing for consultation. Parents most commonly attributed causality to psychosocial reasons, including lack of motivation/deliberate (volitional) and inadequate disciplining, while some parents gave one or more biomedical explanations (epilepsy, brain damage, low birth weight, nutritional deficiency, maternal ill health during pregnancy, secondary to low intelligence) alone or along with a psychosocial reason. Irrespective of the initial reaction, all but one parent were relieved with a medical explanation, accepted the diagnosis and perceived need for treatment after having sought the consultation. Most parents (N=23) considered medication might be needed, and 21 were willing to start/continue medication if the doctor suggested, as “doctor would know the best,” though half of them were “somewhat worried” about side effects. All parents expressed that counseling was needed for the child and for themselves. **Conclusion:** Initial reactions and delay in treatment seeking can be understood in light of cultural attitudes toward mental illnesses and psychiatric consultation in developing nations. More importantly, despite initial reluctance, most parents accepted biomedical explanation and treatment offered by the professionals. The doctor-patient relationship modeled on a guru-chela relation of complete trust in authority can explain this process change. We conclude that cultural attitudes appear to not only influence the causal models and initial treatment seeking, but also modify the process of help seeking in cases of ADHD.

No. 4

The Relationship Between Early Trauma, Negative Cognition and Internet Addiction Among North Korean Adolescent Defects Compared to South Korean

Poster Presenter: Subin Park

Co-Authors: Jin Yong Jun, Yeeun Lee

SUMMARY:

Background: This study compared the early traumatic experiences, self-esteem, negative cognition, and Internet addiction symptoms between North Korean adolescent defectors and South Korean adolescents and also examined the associations of the studied variables according to country of origin (North Korea vs. South Korea). **Methods:** A total of 56 North Korean adolescent defectors and 112 age- and sex-matched South Korean adolescents participated in this study. Analyses examined the relationship between traumatic experiences and Internet addiction symptoms, with negative automatic thoughts or low self-esteem as mediators of these relations. **Results:** North Korean adolescent defectors reported higher negative automatic thoughts, higher problematic Internet use and higher self-esteem than South Korean adolescents. Mediation analysis revealed that, for both North Korean adolescent defectors and South Korean adolescents, traumatic experiences were positively associated with Internet addiction symptoms via increasing negative automatic thoughts or decreasing self-esteem. For both North Korean adolescent defectors and South Korean adolescents, the path of early traumatic experiences to negative automatic thoughts ($\beta=2.88$, $p<0.001$ and $\beta=2.83$, $p<0.001$) was significant, as well as the other path from negative automatic thoughts to Internet addiction symptoms ($\beta=0.41$, $p<0.001$ and $\beta=0.11$, $p=0.043$). However, the results of multigroup SEM analysis indicated a modulating effect of country of origin (North Korea vs. South Korea) on the association between negative automatic thoughts and Internet addiction symptoms ($X^2(1)=9.67>X^2_{0.05}(1)=6.90$), although there was no modulating effect of country of origin on the association between early traumatic experiences and negative automatic thoughts ($X^2(1)=0.03<X^2_{0.05}(1)=6.90$). For both North Korean adolescent defectors and South Korean adolescents, the path of early traumatic experiences to self-esteem ($\beta=-0.70$, $p<0.001$ and $\beta=-0.49$, $p=0.008$) was significant, as well as the other path from self-esteem to Internet addiction symptoms ($\beta=-0.93$, $p=0.006$ and $\beta=-0.36$, $p=0.039$). In this model, there

was no modulating effect of country of origin on the association between low self-esteem and Internet addiction symptoms ($X^2(1)=0.70<X^2_{0.05}(1)=3.84$), nor on the association between early traumatic experiences and low self-esteem ($X^2(1)=2.23<X^2_{0.05}(1)=3.84$). **Conclusion:** North Korean adolescent defectors have higher susceptibility to Internet addiction with higher tendency of negative cognitions and more early traumatic experiences, compared to South Korean adolescents. Interventions to correct negative cognitions and increase self-esteem may be helpful for North Korean adolescents with problematic Internet use. This study was supported by the National Center for Mental Health and the National Research Foundation, Republic of Korea.

No. 5

Examination of the Relationship Between Aggression Levels and Parental Attitudes in Children Attending a Private Kindergarten

Poster Presenter: Neslim Guvendeger Doksat

Co-Authors: Buse Koksal, Mehmet Kerem Doksat, Ayten Erdogan

SUMMARY:

Background: The goal of this study was to reveal the relationship between aggression levels and parental attitudes in children attending a private kindergarten between two to six years old. Additionally, the effects of sociodemographic variables on aggression and parental attitudes have also been examined. **Methods:** 125 parents whose children have been attending a private kindergarten in Ortakoy providence of Istanbul were chosen randomly to participate in the research. The age range of the children was two to six years old. A personal information form was prepared by the researcher in order to identify the sociodemographic characteristics of parents and children. The Children Aggression Scale–Parent Version (CAS-P) (Turkish validity and reliability study reported by Ercan, 2016) and Parental Attitudes Scale, developed by Demir and Sendil (2008), were applied to the participants. Data were analyzed with SPSS for Windows 21.0. **Results:** Ninety-four (75.2%) participants consisted of mothers, 31 (24.8%) consisted of fathers and 68 (54.4%) had daughters. It was found that the perceived democratic and permissive attitude levels

were higher in girls than boys ($U=1,298.00$, $p<0.01$), the perceived authoritarian attitude levels were higher in boys than girls ($U=1,302.50$, $p<0.01$), and boys presented higher levels of verbal aggression ($U=1,290.50$, $p<0.01$) and exhibited higher non-provoked physical aggression ($U=1,461.50$, $p<0.05$) than girls. It was also determined that as the children's ages increased, their verbal aggression and aggression levels also increased (respectively, $r=0.271$; $p<0.01$ and $r=0.194$; $p<0.05$). A statistically significant difference was not found by means of sociodemographic features ($p>0.05$). Additionally, it has been determined that, as parents' democratic attitudes increased, children's aggression levels decreased ($U=1,348.00$, $p<0.01$), and as parents' authoritarian attitudes increased, children's aggression levels increased as well ($U=924.50$, $p<0.01$). **Conclusion:** Democratic parental attitudes were found to be associated with lower aggression levels, whereas authoritarian attitudes were associated with higher aggression levels in children. Verbal and nonverbal aggression levels tended to increase with age. It was observed that verbal aggression and non-provoked physical aggression levels were associated with the male gender.

No. 6

Paliperidone Use in a Youth Population

Poster Presenter: Ayten Erdogan

Co-Authors: Basak Pasabeyoglu, Cigdem Yektas, Neslim Doksat, Caner Mutlu

SUMMARY:

Background: Paliperidone offers a potential new treatment option for adolescents with several advantages, including single dosage per day and availability in hepatic problems. However, there is a lack of efficacy and safety data for the use of this medication in various psychiatric disorders among children and adolescents. In this study, we retrospectively investigated the efficacy and tolerability of paliperidone in various psychiatric disorders among an unselected youth population.

Methods: The children and adolescents treated with paliperidone for any psychiatric problem at the outpatient and inpatient child and adolescent psychiatry clinics of Duzce Karaelmas University, Medical Faculty Hospital and Bakirkoy Mental Health Hospitals were evaluated for the study. Data were

collected retrospectively from the patient records. Tolerability was assessed using the Simpson-Angus Extrapyramidal Side Effects Scale (SAS). **Results:** The mean age of patients was 15.9 ± 1.3 years, and the population was 60% male. Mean duration of paliperidone use was four months. The median average exposure was 7.3mg per day (range 3–12mg per day) and exceeded 9mg per day in 21% of the patients. Of these patients, 26.8% did not have a diagnosis of schizophrenia or bipolar disorder during the year and were considered to have received these drugs off-label. Primary psychiatric diagnosis was attention deficit/hyperactivity disorder in six patients, anxiety disorders in two patients, depressive disorder in one patient, psychosis in 17 patients, conduct disorder in three patients, bipolar disorder in 21 patients, and tic/neurological disorder in two patients. Dosing was notably lower in the two largest treatment groups (ADHD and conduct disorder patients) than for patients with bipolar disorder or psychosis. Of the 52 patients receiving paliperidone, 10 patients were concurrently treated at some point with a psychostimulant/ADHD medication, 10 patients with another antipsychotic, 15 patients with an antidepressant, 11 patients with a mood stabilizer, and 11 patients with any other class of psychotropic drug (such as a sleep medication). The most frequent adverse events include anxiety, headache, sedation, nausea, and akathisia. **Conclusion:** In this study group, paliperidone has been commonly used for schizophrenia, but it has also been used for pervasive developmental disorders, Tourette's disorder, mental retardation, mood disorders, and disruptive behavior disorders in children and adolescents. Results showed clinically meaningful improvements in symptom measurements of different disorders. The drug is generally well tolerated, and the most frequent adverse events include anxiety, headache, vomiting, nausea, and akathisia. Future prospective studies with large samples are needed for definite conclusions.

No. 7

Quetiapine-Induced Thrombocytopenia Leading to Subarachnoid Hemorrhage: Case Report

Poster Presenter: Vithyalakshmi Selvaraj

Co-Authors: Omair Abbasi, Palanikumar Gunasekar, Imad Alsakaf, Paulajo Malin

SUMMARY:

This is the case of a 47-year-old female with a medical history that includes fibromyalgia, chronic back pain and bipolar disorder. The patient's bipolar disorder had been maintained on lithium 600mg daily, quetiapine 600mg nightly, trazadone 100mg at bedtime, and Xanax 2mg every eight hours. The patient was diagnosed with bipolar disorder 20 years ago. She was treated with lithium intermittently for quite some time. Upon review of available records, the patient's current medication regimen was started six months prior to her admission to the hospital. The patient arrived at our ER by ambulance after two days of experiencing severe headaches and intractable vomiting. A CT scan revealed a subarachnoid hemorrhage. The patient was subsequently admitted for surgical clipping. At the time of admission, the patient displayed some auditory and visual hallucinations and moderate thrombocytopenia with a platelet count of $72 \times 10^3/\mu\text{L}$. There was no sign of lithium toxicity. All her other blood investigations were within normal range. After the procedure, psychiatry was consulted for medical management of the patient's psychotropic medications. One of the concerns of the primary team was that the patient's current regimen would cause her to become overly sedated. The primary team decided to wean the patient off quetiapine and start her on ziprasidone, with a goal dosage of 80mg twice daily. Before any changes had been made to the quetiapine, the patient maintained a platelet count of $70-80 \times 10^3/\mu\text{L}$. An initial review of her medications was performed, which showed no cause for the thrombocytopenia, yet selective review of each medication revealed rare cases in which quetiapine is a possible cause for thrombocytopenia. As such, the quetiapine dosage was decreased to 200mg nightly then subsequently stopped. The patient was continued on ziprasidone 160mg daily, to which she responded well. One week after discontinuation of quetiapine, the patient's platelet count rose to $145 \times 10^3/\mu\text{L}$. The temporal relation between the quetiapine and the low platelet count is clearly evident in this case. This is the first case report with subarachnoid hemorrhage secondary to low platelet count induced by quetiapine. In our case, Naranjo Adverse Drug Reaction Probability Scale score was five. This shows

a probable relationship between thrombocytopenia and quetiapine use in this patient. It can be postulated that the effect of quetiapine on platelets may be dose dependent. In an open-label study of 23 patients, Perella et al. found two cases who demonstrated transient thrombocytopenia that resolved on stopping quetiapine. There are few other case reports of blood dyscrasias associated with quetiapine use like pancytopenia, leucopenia and neutropenia.

No. 8**Impact on Psychiatric Practice of Intra-Individual Variability in Pharmacokinetics: Case Reports**

*Poster Presenter: Hafid Belhadj-Tahar, M.D., Ph.D.
Co-Authors: Nouredine Sadeg, Marc Passamar*

SUMMARY:

Clozapine is an atypical antipsychotic drug indicated in schizophrenic patients, particularly in cases of either nonresponse (refractory psychosis) or intolerance to typical antipsychotics. Extensive within-patient variability due to environmental factors in clozapine plasma concentrations could lead to serious clinical effects. Two cases of adverse reactions due to the variability of clozapine levels in female schizophrenic patients are reported. In the first patient, long-term administration of the same dose (600mg per day) resulted in clozapine plasma concentrations ranging from 670.6 to 3038.0ng/mL, associated with clinical reactions. In case 2, therapeutic drug monitoring revealed a twofold increase in one week at the same medication doses: from 719.0ng/mL at day 1 to 1,359.2ng/mL at day 7. These variations were related to the metabolism of clozapine, mediated by several cytochrome P450 isoenzymes, particularly CYP 1A2 and 3A4 isoforms. In the first case, the influence of concomitant medications, namely esopremazole (proton pump inhibitor) and oxybutinine (antispasmodic), on CYP 3A4 has led to cumulative effects. In case2, suspension of the induction of the main metabolic pathway (1A2) due to tobacco cessation has resulted in an increase in clozapine plasma concentration. Clozapine dosages were performed in both cases by high-performance liquid chromatography tandem mass spectrometry (HPLC-MS/MS). Both cases highlight the interest of a close biological monitoring to maintain clozapine clinical efficacy and tolerance.

No. 9

Interaction Between Omeprazole and Antipsychotics: A Case Report

Poster Presenter: Jesus Gomez-Trigo Baldominos, M.D.

Co-Authors: Eduardo Paz Silva, Mario Paramo Fernandez, Manuela Perez Garcia, Jose M. Portes Cruz, Cristina Quinteiro Rouco

SUMMARY:

Mr. F. J. G. is a 26-year-old male resident of rural Galicia, Spain, who presented difficulties in pharmacological management, suggesting schizophrenia refractory to antipsychotics. Family history highlights the presence of a high genetic load around psychotic and addictive clinic: his brother required hospitalization for psychotic symptoms derived from psychotoxic consumption (THC), his father was addicted to several substances (heroin, alcohol, THC), and his maternal grandfather was diagnosed with delusional disorder in elderly age. Within 15 years, the patient suffered a manic-like episode in the context of substance abuse, which disappeared after abandoning drug use. At 21, hospital admission resulted in a diagnosis of schizophreniform disorder. After stabilization and new relapse at age 24, new entry occurred with a new diagnosis: paranoid schizophrenia toxic and harmful consumption (alcohol and THC). At discharge, encysted persecutory delusion persisted without altering family dynamic. At the current time, he presented megalomania ("I'm a rock star," "I compose songs for Rihanna," "I can talk to Obama"), with phenomena of thought insertion, delusion of reference, thought blocking, and destructuring of ordinary life. He was prescribed risperidone extended release 75mg over 14 days, clonazepam 4mg per day and lormetazepam 2mg per day. After two months' hospitalization, behavioral abnormalities persisted, showing resistance to clozapine, so electroconvulsive therapy was administered. After a small improvement, thoughts about the possibility of an interaction between somatic and antipsychotic medications appeared. Therefore, it was requested to the genomic medicine unit in our hospital, and they reported that the patient "is a slow metabolizer for omeprazole, and given its interference with some antipsychotics

through isoenzyme 1A2, it would act as an inducer of clozapine." In this case (long-term use of omeprazole), we would doubt whether the administration of the proton pump inhibitor decreases the action of certain antipsychotics, so we could think of refractory schizophrenia, or the mere use in a logical manner to a treatment focused on clozapine, as favored by the induction of isoenzyme cytochrome P450 1A2. The subsequent administration of paliperidone palmitate due to impaired insight of the patient, and replacement of omeprazole by pantoprazole with the clinically stable patient, suggests the first option and allow clozapine withdrawal.

No. 10

Withdrawal of Stimulant Medication in an Adult With Intellectual Disability, Autism, Childhood ADHD, and Challenging Behavior

Poster Presenter: Richard J. Hillier, Ph.D.

Co-Author: Rupal Patel, M.D.

SUMMARY:

Ms. H. F. is a 22-year-old woman of mixed ethnicity with a moderate intellectual disability, autism, challenging behavior, and a childhood diagnosis of ADHD. The patient was living in a purpose-built one-bedroom flat and supported by one carer at all times. She presented to psychiatry due to longstanding issues around challenging behavior, repetitive behaviors and poor sleep. From functional behavioral analysis recording, challenging behavior was determined to be in the form of physical aggression toward carers and property destruction, often occurring when demands were placed on H. F. However, there were several serious episodes of challenging behavior with no apparent trigger. The patient was taking Concerta 36mg in the morning and 18mg in the evening, which had been initiated in childhood for the treatment of ADHD symptoms. Following discussion with the family and carers, we agreed to reduce and stop Concerta. Follow-up at six weeks was positive, with reported improvements in levels of agitation and anxiety. Incidents of challenging behavior had reduced, and the patient was engaging in more activities both inside and outside of the home. In addition, carers reported improvements in sleep from four to five hours to seven to eight hours following cessation of Concerta.

In this poster, we discuss the increasing trend to use stimulant medication in adults with ADHD. In this case example, we report an improvement in presentation and behavior in a patient with intellectual disability and autism following withdrawal of stimulant medication, possibly due to reduction in anxiety levels and the patient no longer needing stimulants for ADHD.

No. 11

Bleeding Risk Associated With Use of Mirtazapine and Bupropion for Depression: A Meta-Analysis

Poster Presenter: Kyoung-sae Na

Co-Authors: Han-Yong Jung, Se-Hoon Shim, M.D., Sang-Woo Hahn, Seong-Jin Cho, Seo-Eun Cho

SUMMARY:

Background: Several researchers have reported bleeding associated with the use of selective serotonin reuptake inhibitors (SSRIs). Recent meta-analyses found that SSRIs increased upper gastrointestinal (GI) bleeding and intracranial hemorrhaging, possibly by attenuating the coagulation function of serotonin with regard to platelets. Generally, platelet-released serotonin is an agonist for platelet activity. Several narrative reviews and research articles have recommended the use of antidepressants that do not inhibit serotonin transporter reuptake, particularly mirtazapine and bupropion. However, there is scant evidence supporting the use of mirtazapine and bupropion for this purpose. **Methods:** We performed a meta-analysis of publications listed in Embase, Ovid Medline and Cochrane Library to identify bleeding risk associated with mirtazapine and bupropion. All aspects of the meta-analysis were conducted according to the preferred reporting items for systematic reviews and meta-analyses. To investigate the pooled odds ratio (OR) across trials, the random effects model (DerSimonian and Laird method) was used. **Results:** In total, 3,684 publications were identified, some of which did not include a separate analysis of the bleeding risks of mirtazapine and bupropion. Finally, four case-control studies and two cohort studies of mirtazapine were included in our analysis. Two case-control studies of bupropion were analyzed. Only one cohort study reported a risk of bleeding associated with bupropion. The meta-analysis showed no association

between mirtazapine and overall bleeding risk, but it was associated with increased risk of GI bleeding (OR=1.661, 95% CI [1.213, 2.275], $p=0.002$). No association between bupropion and risk of bleeding was found (OR=0.598, 95% CI [0.154, 2.322]).

Conclusion: Due to the limited number of studies included in our meta-analysis, it seems premature to conclusively recommend mirtazapine and bupropion for populations at risk for bleeding. In this meta-analysis, the GI bleeding risk of mirtazapine was similar that of SSRIs. Future studies with large samples and longitudinal designs should separately analyze the bleeding risk of mirtazapine and bupropion in patients with depression. The possible mechanisms underlying the bleeding risk of antidepressants should be elucidated according to their pharmacological classification.

No. 12

Pruritus Without Skin Rash Following Low-Dose Vortioxetine in a Patient With Depression

Poster Presenter: Kyoung-sae Na

Co-Authors: Han-Yong Jung, Sang-Woo Hahn, Se-Hoon Shim, M.D., Seong-Jin Cho

SUMMARY:

We report a case of low-dose vortioxetine-associated pruritus in a patient with major depressive disorder. Mr. K. is a 22-year-old Korean male with no history of clinically significant systemic diseases, including skin diseases. This patient experienced depressive symptoms, including depressed mood, loss of interest, decreased sleep, anorexia, and irritability. Following a comprehensive psychiatric interview with Mr. K. and a first-degree relative, he was diagnosed with major depressive disorder and received vortioxetine 5mg per day as the initial treatment. After five days of taking vortioxetine 5mg per day, Mr. K. began to experience pruritus, mainly in the upper and lower limbs. The pruritic symptoms lasted all day but did not significantly disturb his sleep. However, he could not tolerate the symptoms and frequently scratched the affected skin regions. Three days after the onset of pruritus, he stopped taking vortioxetine 5mg per day, and no further treatment for the pruritus was provided. Two days after the discontinuation of vortioxetine 5mg per day, he reported attenuation of the pruritus. About three days after

discontinuation of vortioxetine 5mg per day, the pruritus completely disappeared. The physical examination revealed no other skin lesions, except several erythematous scratch marks. According to the laboratory tests, there were no abnormalities in the liver or kidneys or in the electrolyte levels or complete blood counts. The vortioxetine could not be further prescribed, as Mr. K. did not want to take this medicine again. Given the temporal relationship between the clinical course of pruritus and the treatment with vortioxetine, a causal relationship between pruritus and vortioxetine seems probable. Pruritus has not been commonly associated with the use of antidepressants, and this case raises questions about possible underlying mechanisms. As vortioxetine is a newly developed antidepressant, further data based on clinical observations should be collected to identify possible risk factors for the development of pruritus by patients taking vortioxetine.

No. 13

Psychotropic Prescribing Practices for the Management of Challenging Behavior in Adults With Intellectual Disability and Neurodevelopmental Disorders

Poster Presenter: Rupal Patel, M.D.

Co-Author: Sarah Maber

SUMMARY:

Objective: Evaluate psychotropic prescribing practices in adults with intellectual disability (ID) and behavior that challenges across the Kingston and Richmond Neurodevelopmental Service (NDS).

Methods: We created an audit tool based on the Faculty Report FR/ID/09 "Psychotropic drug prescribing for people with intellectual disability, mental health problems and/or behaviors that challenge: Practice guidelines." We adapted the self-assessment framework using four of the recommendations to create the audit tool. We looked at clinical records for the period August 2015 to August 2016 across both boroughs. We included adults with a diagnosis of ID who were on the psychiatry caseload of Kingston and Richmond NDS. People with a comorbid diagnosis of ADHD or epilepsy were included, but their respective medications were excluded from data analysis. People with a diagnosis of any other mental disorder

were excluded. **Results:** Approximately one-fifth of each community caseload matched our audit criteria. The majority had a diagnosis of either moderate or severe ID, and almost all people in the sample had a diagnosis of autism. Approximately two-thirds of the sample were male, and half were under age 30. Risperidone was the most frequently prescribed antipsychotic, whilst sertraline was the most frequently prescribed selective serotonin reuptake inhibitor. The most commonly used PRN medication was diazepam. Approximately half of the sample were prescribed more than one psychotropic. Nearly all records had documented evidence of assessment for capacity to consent to medication as well as recording progress on target symptoms. Only one record showed evidence of using standardized instruments to measure treatment response and side effects; the rest used clinical evaluation. Almost all of the sample were regularly reviewed within three to six months by a psychiatrist. In addition to psychiatry, behavioral analysts were the most likely other professional to be involved in the person's care. In all cases, there was a documented associated risk of harm to self or others due to the challenging behavior.

No. 14

Aripiprazole-Induced Fast Decrease in Prolactin Levels and Rebound of Psychotic Symptoms in Patients With Schizophrenia

Poster Presenter: Ya-Wen Jen

Co-Authors: Wei J. Chen, Tzung-Jeng Huang, Ching-Hua Kuo

SUMMARY:

Background: Aripiprazole has partial agonist activity at dopamine D2 and serotonin1A (5-HT1A) receptors, as well as antagonist activity at serotonin2A (5-HT2A) receptors. It can decrease the concentration of prolactin and remedy hyperprolactinemia, a common side effect caused by atypical antipsychotics in patients with schizophrenia. On the other hand, some studies have reported that aripiprazole-induced low prolactin levels in patients with schizophrenia were associated with more psychotic symptoms. The phenomenon might be caused by patients' supersensitivity at dopamine receptors. This study was aimed to assess the association between

aripiprazole-induced fast decrease in prolactin levels and subsequent rebound of psychotic symptoms in a prospective follow-up of patients with schizophrenia. **Methods:** Participants were 65 (27 male and 38 female) patients with chronic and stable schizophrenia who participated in a clinical trial about fast versus slow strategy of switching to aripiprazole from other antipsychotics in Taiwan, with 52 completing the trial and 13 dropping out during the process. All patients received a fixed full dose of aripiprazole (15mg). For patients completing the trial, psychiatric symptoms were assessed at five time points using the Positive and Negative Syndrome Scale (PANSS) and Clinical Global Impression Scale (CGI). Serum level of prolactin was evaluated at baseline, day 14 and day 56. A fast decrease in prolactin levels was defined as a decrease of over 50% between the first two time points for patients who dropped out during the trial and a decrease of over 80% between day 14 and day 56 for patients who completed the trial. A rebound of psychotic symptoms is defined as an increase of PANSS Positive score of two points or more between two time points and remaining so thereafter. The association between the fast decrease in prolactin levels and rebound of psychotic symptoms was evaluated using logistic regression analysis. **Results:** Among the 65 patients, 18 patients (28%) showed fast decrease in prolactin levels, and 23 (35%) patients had rebound in psychotic symptoms. Compared with patients who did not have fast decrease in prolactin levels, those with fast decrease in prolactin levels had similar distribution in sex, age, height, weight, and previous antipsychotics, but had higher prolactin levels at baseline. Logistic regression analysis revealed that patients with fast decrease in prolactin levels were associated with rebound in psychotic symptoms (OR=3.3, 95% CI [1.1, 10.1]). The area under the curve of the receiver operating characteristic curve was 0.62. **Conclusion:** Patients with schizophrenia who have aripiprazole-induced fast decrease in prolactin levels have higher risk of encountering rebound of psychotic symptoms. Hence, fast decrease in prolactin levels may serve as a useful indicator for adjusting aripiprazole dose. This study was supported by the Ministry of Science and Technology, Taiwan.

No. 15

Liar, Liar! Hands and Feet on Fire!

Poster Presenter: Shirish Patel

Co-Authors: Chauncey Atterberry, Scott Albright

SUMMARY:

Ms. H. is a 50-year-old female veteran with a history of bipolar disorder, several prior suicide attempts and alcohol use disorder who was admitted to psychiatry for suicidal ideation in relation to recent alcohol use. Complicating her condition, the patient is wheelchair bound due to fracture. The patient was safely detoxified from alcohol, but her mood continued to worsen. Starting a medication proved difficult, as multiple medication allergies were reported on her chart, and the patient was not forthcoming with additional information. She was started on ziprasidone for her manic symptoms and was titrated up to 80mg twice daily. This was ineffective, as absorption was unreliable and the patient revealed a prior history of gastric bypass. As per published studies, carbamazepine as a mood stabilizer has been shown to have greater absorption in the gut in patients with gastric bypass surgery. Low-dose carbamazepine was started, and in 24 hours, the patient developed a painful, pruritic rash on her hands, feet and thighs. Medicine was consulted and deemed the rash to be a drug-induced erythema multiforme reaction to carbamazepine; on later questioning, she had revealed a similar reaction in the past to the drug. The medication was arrested, and dermatology recommended steroid injection and a short course of oral and topical steroids. Eventually, the patient was agreeable to trying lithium, which was listed as an allergy, but she revealed it was not a "true allergy," but rather, she had concerns about weight gain. Over the rest of her hospitalization, the patient's mood improved, she was not actively suicidal or manic, and her rash resolved. She was discharged home with appropriate medications and follow-up. History of medication adverse effects requires accurate and comprehensive evaluation and documentation. As in this case, patients may not be reliable and/or willing historians. Also, thorough chart review and inquiry into medical and surgical histories may play a role in the failure of pharmacological interventions, either current or past. In this poster, we discuss the challenges and importance of the consideration of

true allergies and past surgical treatments on the effects of psychiatric treatment.

No. 16

Effects of Antipsychotic Drugs on Infants of Breastfeeding Mothers: A Review

Poster Presenter: Tapan Parikh, M.D., M.P.H.

Co-Authors: Umang Shah, Ramkrishna D. Makani, M.D., M.P.H., Consuelo Cagande

SUMMARY:

Background: The safety of antipsychotic drugs taken during that postpartum period, which are secreted into breast milk or have the potential to be secreted into breast milk, is often not known to the prescribers. It is extremely important for an infant to receive breast milk with safer concentrations of drugs for normal growth and development in parallel with adequate treatment of mental illness for the nursing mother. **Methods:** We conducted a literature search using PubMed and PsycINFO to determine the safety of antipsychotics drugs, both typical and atypical, during the postpartum period in breastfeeding infants. The search terms included antipsychotic, breastfeeding, lactation, typical, and atypical, in multiple appropriate combinations. We did not restrict the search based on clinical indications. The usages largely included psychotic disorders such as schizophrenia and bipolar disorder with psychosis. Our literature search resulted in book chapters, review articles, case reports, and case series. **Results:** We noted that relative infant dose (RID) of under 10% is considered acceptable in healthy postnatal infants. Only olanzapine has been found to have relatively adequate reports (N=227) suggesting its low RID values (0–4%). There have been a limited number of cases reported for other drugs, e.g., quetiapine (N=38), risperidone (N=18), clozapine (N=12), paliperidone (N=8), aripiprazole (N=6), ziprasidone (N=4), haloperidol (N=4), chlorpromazine (N=3), perphenazine (N=1), and trifluoperazine (N=1). No literature was found for fluphenazine, loxapine, pimozide, thioridazine, thiothixene, asenapine, iloperidone, lurasidone, brexpiprazole, and cariprazine. The available data suggested lower RID values for quetiapine (0.02–0.43%), chlorpromazine (0.3%), ziprasidone (1.2%), and clozapine (1.2%) and moderate values for aripiprazole (0.7–8.3%), paliperidone (2.3–4.7%),

risperidone (2.3–9.1%), and haloperidol (0.2–12%). The common reported side effects were drowsiness, lethargy, irritability, decreased suckling, poor feeding, and change in sleeping patterns. Clozapine was associated with agranulocytosis, seizures and cardiovascular instability, while quetiapine was associated with EKG QTc prolongation and mildly delayed mental and physical performance.

Conclusion: The most evidence of non-risk exists for olanzapine, with no clear evidence of harmful effects of other antipsychotic drugs for nursing mothers. It is very important to weigh clinical benefits of treating psychosis in mothers versus risks to infants, regardless of which drug is preferred. We also noted a highly recommended close clinical monitoring of infants to reduce any negative effects on infants. Formula feeding is also less preferred, but a viable option if mothers opt for it. In sum, safety data remain to be largely unstudied in a sample size that could be considered statistically inferential as well as clinically relevant.

No. 17

Breastfeeding and Effect of Selective Serotonin Reuptake Inhibitors (SSRIs): Infant Safety Concerns

Poster Presenter: Tapan Parikh, M.D., M.P.H.

Co-Authors: Ramkrishna D. Makani, M.D., M.P.H., Sindhura Kunaparaju, Consuelo Cagande

SUMMARY:

Background: All SSRIs are secreted into breastmilk and may have potential side effects in infants. The American Association of Pediatrics recommends exclusive breastfeeding for at least six months. Accurate clinical decision making is necessary when weighing the risks versus benefits of SSRIs in breastfeeding mothers, especially when stable maternal mental health is warranted for proper mother to infant bonding. The most common reasons for which SSRIs are used in the postpartum breastfeeding period include postpartum depression, MDD, OCD, and anxiety. **Methods:** We conducted an extensive literature search using PubMed and found 148 articles that were informative. After further screening, eliminating non-English articles and excluding irrelevant articles, we narrowed our search to 107 articles, which include all available articles until September 2016. **Results:** Data are available for citalopram (N=15),

escitalopram (N=16), fluoxetine (N=72), fluvoxamine (N=8), paroxetine (N=70), and sertraline (N=151). Sample size for each includes all the data available to date. According to the literature, there are various methods to understand the complex interplay between drug level in maternal serum, breast milk and infant serum. There is an arbitrary cutoff of up to 10% of maternal plasma level in breast milk, which is considered safe. In other words, if the amount of a particular SSRI in breast milk is under 10% of maternal plasma level, there will usually be very little to no side effects to the infant. No side effects are reported with fluvoxamine, paroxetine or sertraline. Citalopram is associated with uneasy sleep (N=1). A case of necrotizing enterocolitis (N=1) has been reported with escitalopram. Fluoxetine has been reported to be associated with colic (N=3), seizure-like episode (N=1; mother also on carbamazepine and buspirone) and lower weight gain (N=1). It can be inferred that no side effects are reported in substantial statistically analyzable quantity, and data suggest that, overall, no SSRIs are reported to have consistent and frequent side effects. **Discussion:** Based on our extensive literature search, fluvoxamine paroxetine, and sertraline are considered the safest. Some suggest sertraline to be the safest among these three. Citalopram, escitalopram and fluoxetine have mixed reviews, and the most researchers have suggested caution. Overall, it is not highly unsafe to prescribe SSRIs, but the clinical risks versus benefits have to be justified depending on which particular SSRI would be used. Clinical caution is advised, and clinical encounters should include the basic infant safety questions and some precautions. In terms of some novel approaches and suggested precautions, it has been suggested that peak breast milk level be considered. For example, if the peak level for sertraline is in eight to nine hours after medication intake, then possibly that particular milk could be discarded as a precaution to infant risk.

No. 18

Utility of Selective Serotonin Reuptake Inhibitors for Impulsivity and Aggressiveness in Jail: Clinical Study on Effectiveness in 60 Days of Treatment

*Poster Presenter: Martin Javier Mazzoglio y Nabar
Co-Authors: Emilce Blanc, Vanesa Sierra, Santiago Muñoz, Garcia Matias, Hector Alarcon*

SUMMARY:

Background: Studies on the neurobiology of impulsive aggression highlighted the role of serotonin to inhibit violent behavior and inversely relate to impulsivity, but not aggressive. Aggressive and impulsive behavior characterize the course and evolution of many psychiatric disorders, especially due to personality and substance, with wide prevalence among the population deprived of freedom. **Objective:** Determine the role of clinical drug-SSRI antidepressants in treating impulsivity and aggressiveness of persons deprived of liberty and their specific psychopathological diagnosis depending on the age range and utility. **Methods:** We performed an observational cross-sectional study by psychopathologically evaluating the HC of 104 male subjects, with results obtained in four clinical monitoring scales for impulsivity and aggressiveness (Manifest Aggressiveness Scale of Agitated Behavior, Violence Risk Assessment and impulsivity). The subgroup of subjects with a positive result in at least two scales and correlation with clinical evaluation of psychopathology (N=30) were prescribed an SSRI (paroxetine or sertraline) to drug plan basis and reevaluated at 30 (time 1) and 60 (time 2) days of treatment. Statistical parameters were applied and complied with ethical and legal requirements. **Conclusion:** Selective serotonin reuptake inhibitors are effective and useful in the treatment of patients with impulsive-aggressive behavior, presenting specific use (combined with stabilizers) depending on the type of psychopathology and aggressive and time-dependent response.

No. 19

Morphometric and Functional Findings About the Insula in People Living With HIV and Apathy

*Poster Presenter: Martin Javier Mazzoglio y Nabar
Co-Author: Elba Tornese*

SUMMARY:

Background: The insular cortex is one of the components of the paralimbic area that lies in the background of the lateral groove and has a crucial role in the perception and modulation sensitivity, sensory, and vegetative information. It has connections with cortical and subcortical areas

nuclei. Anteriorly, it is involved in emotional responses and anxiogenic and against somatic events. The study of its association with neurocognitive impairment has not been well developed, especially in people living with HIV (PLHIV), and it has been implicated as a modulator of emotional response and executive. These patients have symptoms of cognitive decline from the onset of the disease, and apathy is common. The aim of this poster is to describe morphometric and functionally insula relative to cortical and subcortical brain structures in PLHIV with apathy compared with controls and with PLHIV without apathy, to determine its implications. **Methods:** We studied 23 brains belonging to PLHIV, male, with apathy as neuropsychiatric assessment (MINI, AES), aged between 28 and 49 years, and without neurocognitive impairment nor viral load (more than five years). Magnetic resonance (MR) with cognitive protocol was used for quantification, and single photon emission tomography (SPECT) was used to assess cortical perfusion applied to frontal cortices, island, caudate nucleus, and amygdaloid bodies. **Results:** Statistical parameters were applied and complied with ethical and legal objections. We recorded significant morphometric reduction, according to severity, in the prefrontal cortex of the left anterior cingulate, left caudate and dorsolateral prefrontal cortices in HIV with apathy; the anterior insula showed a nonsignificant reduction ($p=0.4$). Hypoperfusion in functional analysis was determined rinds left, left anterior insular and anterior cingulate in the caudate asymmetrically, with hypoperfusions on the left and right dorsolateral insular cortex. Perfusion of the left anterior insula was correlated with ipsilateral caudate ($r^2=0.84$) and proportional to the severity of apathy in the test ($r^2=0.83$). **Conclusion:** In the cohort, evaluated patients living with HIV and apathy found a significant functional compromise of the anterior insular cortex, correlated with morphometric and functional impairment of the caudate nuclei. The implication of the insular cortex suggests their participation in the psychopathology of apathy, parameter linked with the deficit of interest in activities and initiatives. **Keywords:** Insula, Apathy, HIV, MR, SPECT

No. 20

Pregabalin and Lower Limb Pain in People Living

With HIV: Clinical Efficacy According to Disease Stage

*Poster Presenter: Martin Javier Mazzoglio y Nabar
Co-Authors: Milagros Muniz, Alexis Mejias de la Mano, Santiago Munoz, Nahuel Magrath Guimet, Guillermo Jemar, Matias Garcia*

SUMMARY:

Background: Pain is determined by neurochemicals and the subjective meaning assigned. There is a high prevalence of lower limb pain in people living with HIV (PLHIV), which is often resistant to classic anti-inflammatories that can generate drug interactions with antiretroviral therapy (HAART) and is presented together with psychiatric comorbidities. **Objective:** Report the clinical efficacy of pregabalin for lower limb pain in PLHIV and their comorbidities, according to disease stage. **Methods:** We report 56 male HIV-positive patients, average age 38.3 years, with antiretroviral treatment, negative viral loads and a diagnosis of pain disorder in lower limbs (24 cases with comorbid mood disorder). Pregabalin treatment was indicated for both pathologies and opioid addiction and anxiolytics. We excluded vascular, neuropathic or trauma causes. We apply scales to assess the pharmacological implementation (Hamilton Anxiety Rating Scale, Montgomery Åsberg Depression Rating Scale), pain assessment and daily life activities (Barthel Index, Global Activity Scale). The results were subjected to statistical tests and complied with ethical and legal requirements. **Results:** Pregabalin resulted effective in 17 days at doses of 250mg per day. Secondly, pregabalin reduced anxiety symptoms; discontinue allowed weaning of anxiolytics and opioids and unregistered interactions with antiretrovirals. Titration time was proportional to the improvement in operating range ($R^2=0.86$). Time effectiveness of pregabalin, decreased pain scales and rates of improvement in activities of daily living presented association with disease stage, but not with the time of infection. **Conclusion:** Pregabalin demonstrated efficacy for the treatment of lower limb pain in males living with HIV and comorbid symptoms (anxiety and addiction to opioids and anxiolytics). Clinical response is higher in the early stages of the disease and had no interactions with antiretrovirals.

No. 21

A Case of Terminal HIV-Associated Merkel Cell Carcinoma: Psychiatric Comorbidities and Options at the End of Life

Poster Presenter: Erik Bayona

Co-Author: Lawrence McGlynn, M.D., M.S.

SUMMARY:

Ms. E. is a 72-year-old female with a past medical history of HIV and a psychiatric history of posttraumatic stress disorder (PTSD) and borderline personality disorder who has been followed for many years by the psychiatry service of the Positive Care Clinic. The patient presented with several somatic complaints including abdominal pain, nausea, vomiting, and a small painless bump on her left forearm. For months, Ms. E. had been visiting the emergency department with increasing frequency, complaining of a variety of vague somatic complaints, often including anxiety and at times even a component of suicidality. The recent increased visits regarding her anxiety and somatic complaints directed her care to prioritize these symptoms and minimized the presentation of the forearm bump. Several months passed before the forearm bump was further explored, and it was not until one of her multiple inpatient hospitalizations that an excisional biopsy was performed. The pathology report revealed that the patient had developed Merkel cell carcinoma, a rare neuroendocrine skin cancer. Despite undergoing multiple rounds of chemotherapy and radiation, the Merkel cell carcinoma recurred, and tumor growth spread beyond her upper extremity to her chest and back. With her malignancy so far advanced, Ms. E. decided to seek palliative care services and subsequently entered hospice care. It was at this point in time that Ms. E., under unbearable pain, began requesting medical advice for legal options to end her life. In California, Assembly Bill X2-15, The End of Life Option Act, went into effect on June 9, 2016, and has prompted patients and physicians alike to learn more about the decisions that can be made when faced with a terminal illness. In this poster, we discuss the challenges that psychiatric comorbidities can create for diagnosis and management of medical conditions. Additionally, we explore the impact of California's End of Life Option Act on the future of health care in California and possibly the nation.

No. 22

Interviewing a Non-Disclosing Patient: A Clinical Exercise for Psychiatric Residents

Poster Presenter: Jeffrey Gruhler

Co-Authors: Alexander C. L. Lerman, M.D., Sahil Munjal, M.D., Jasra Ali Bhat, Anupama Sundar, M.D. M.P.H

SUMMARY:

The validity of all psychiatric assessment rests on the willingness and capacity of a patient to provide a complete history and the psychiatrist's capacity to help them do this. Many or even most patients provide distorted and incomplete information at critical points during an initial assessment. Some patients do so knowingly; many more do so in response to the underlying psychopathology that brought them to treatment in the first place. A skilled interviewer is often more interested in the factors that precipitate distortion and nondisclosure, and by engaging these is able to elicit a deeper understanding of the patient and an improved therapeutic alliance. This poster will present the results of a training exercise in which psychiatry residents were assigned to elicit a history from a simulated patient (SP) who had been instructed to give information that was vague, distorted or, in some instances, grossly false, until appropriately confronted or engaged by the resident. One patient had a lethal overdose in the setting of an acute life crisis and is now attempting to deny and minimize her distress. A second patient was actively psychotic, paranoid and suffering from severe somatized pain. A third patient presented with a factitious disorder, but in fact suffers from chronic developmental trauma and an underlying major depressive process. Generally speaking, the trainees were able to correctly establish the underlying features of the case, but tended to be less successful in understanding why a patient was less than fully candid and using such an understanding to deepen the interview process. Such difficulties frequently led to erroneous or incomplete clinical formulations, as when a resident correctly deduced that a patient was lying in order to gain admission to the hospital, but failed to inquire further and establish the patient's underlying depression, history of transient psychosis and suicide attempt. During both the

training exercise and daily clinical practice, many residents describe feeling frustrated or bored by patients, failing to appreciate that this emotional experience is often a reflection of lack of trust, disengagement and restricted disclosure on the patient's part. In a follow-up study of tapes of the simulated patient interviews, we have attempted to develop the capacity of our psychiatrists-in-training to view nondisclosure and distorted disclosure by patients as a critical window into a patient's state of mind and, in many instances, the patient's underlying psychopathology.

No. 23

Acute Orofacial Dyskinesia After Starting Verapamil in a Patient on Risperidone: Multiple Mechanisms for Adverse Reactions, Yet a Poor Signal Persists

Poster Presenter: Andrew C. Buchholz, D.O., M.P.H.
Co-Authors: Elle Marie Schollnberger, M.D., Ph.D., Dennis A. White, M.D.

SUMMARY:

Mr. X. is a 31-year-old African-American male who is receiving treatment for schizophrenia in a psychiatric partial hospitalization program within an academic medical center. Partial remission of his positive psychotic symptoms has been achieved with daily low-dose risperidone treatment. This medication was well-tolerated by the patient, and Abnormal Involuntary Movement Scale [AIMS] scores were 0 throughout treatment. Three months into treatment, Mr. X. requested a referral to a specialty clinic for a history of chronic migraine and initiated verapamil for prophylaxis. Approximately two weeks after starting verapamil, program staff observed acute onset of choreoathetoid movements of the face, lips and tongue. Immediate referral to the psychiatrist demonstrated an AIMS score of 7 for orofacial movements; no extremity or truncal movement abnormalities were observed. Verapamil was immediately discontinued, but the orofacial dyskinesia persisted for two more days before the AIMS score returned to his baseline of 0. There has been no recurrence of dyskinetic movements since. Verapamil, a phenylalkylamine calcium channel blocker, is a commonly prescribed antiarrhythmic and antihypertensive agent that also has good efficacy in migraine prophylaxis. Verapamil's utility can be limited by its strong inhibition of CYP3A4 and

P-glycoprotein, leading to multiple documented cases of adverse drug-drug interactions. Furthermore, a small body of literature exists that demonstrates verapamil's ability to independently cause significant alterations in dopaminergic transmission, including hyperprolactinemia and drug-induced Parkinsonism. To our knowledge, however, we are presenting the first documented case of acute verapamil-induced orofacial dyskinesia. In this poster, we increase the signal of the potential for adverse neuropsychiatric drug reactions stemming from verapamil. First, we discuss the known dopaminergic effects of verapamil independent of other medication coingestion. Second, we detail the mechanisms by which verapamil alters CYP3A4 and P-glycoprotein, proteins that play an integral role in the pharmacokinetics of a large majority of psychiatric medications. Finally, we reemphasize the need for active medication reconciliation, drug interaction checks and interdisciplinary provider communication to prevent adverse drug reactions—especially in psychiatry and headache-related specialty care.

No. 24

What We Don't Talk About When We Don't Talk About Sex: Trending Sex and Relationship Topics on the Psychiatry Resident-in-Training Exam Over Ten Years

Poster Presenter: Andrew C. Buchholz, D.O., M.P.H.
Co-Author: Phillip Guajardo, M.D.

SUMMARY:

Background: Research into sexual dysfunction over the last twenty years has confirmed its heavy burden on quality of life and its bidirectional etiological linkage to mental illness. Furthermore, recent studies have demonstrated that the rates of sexual dysfunction in young adults are substantially higher than previously believed, particularly in military and veteran populations. Although psychiatrists are often in the best position to approach and address these concerns, the very limited data on sex and relationship education in psychiatry training programs do not demonstrate that psychiatry trainees are adequately prepared. The annual Psychiatry Resident In-Training Exam (PRITE) is a fair measure of trends in psychiatry residency training and may illuminate gaps in education. This study

analyzed the quantity and topics of sex and relationship questions on the PRITE from 2006 to 2015 in the context of current epidemiological data regarding the prevalence and burden of sexual dysfunction. **Methods:** The subject matter content of questions from the 2006 to 2015 iterations of the PRITE (N=3,000) were reviewed for sex and marital therapy topics. Those questions with such content were divided into six separate topics—psychosexual development, sexual/gender identity, sexual dysfunction, sexual side effects of psychopharmacology, pharmacological treatment of sexual dysfunction, sex/marital therapies, and sexual trauma. Descriptive statistics were performed on these data and compared overall, as well as by year and subtopic. **Results:** Out of the total 3,000 questions that were analyzed, only 92 (3.07%) pertained to sex or relationship concerns, an average of slightly more than nine questions annually. Psychosexual development was the most common subtopic of these 92 questions, comprising 25% of the total. Pharmacological treatment of sexual dysfunction and sexual trauma were the least prevalent subtopics, each comprising 7.6% of the total—an average of less than one question annually. Psychosexual development was the only subtopic to be represented in all ten PRITE exams; Pharmacological treatment of sexual dysfunction and sexual trauma were the least represented annually, appearing in only five of the 10 exams (50%). Of note, the same question regarding sexual trauma—with only mild variation in wording—appeared in four separate exams (2010–2013). **Conclusion:** This analysis lends strong evidence that training in sex and relationship topics, despite their known deleterious effects on mental health quality of life, is inadequate in psychiatry residency programs—particularly sexual trauma. This is consistent with the sparse survey-based data available in the academic psychiatry literature. With increasing attention paid to sexual dysfunction and sexual trauma, particularly among college students and veterans, we believe that sexual and relationship topics should be formally introduced and reinforced in psychiatry residency programs nationwide.

No. 25

Psychosis and Catatonia Associated With Cannabis

Concentrates

Poster Presenter: Ernest Cochran

Co-Authors: Bradley Zehring, Shehzad Ayub, D.O.

SUMMARY:

A 19-year-old man with a history of using cannabis “wax” presented to the hospital with psychosis. The psychiatry department was consulted after the patient’s admission to the medical floor. He was paranoid and exhibited grossly disorganized behaviors, which included walking around the unit naked and the inability to perform basic activities of daily living (ADLs). Information from his family revealed that he was an engineering student who had been doing well academically and socially until three weeks prior to his admission, when he became increasingly paranoid. He had been using cannabis concentrates for six months, with the last use four to five days prior to admission. Aside from cannabis use, there was no significant past medical, psychiatric or family psychiatric history. Given first-onset psychosis, a thorough medical workup was recommended. This included a urinalysis, urine drug screen, serum vitamin B12 level, serum folate level, syphilis screen, HIV screen, thyroid stimulating hormone level, MRI of the head, cerebrospinal fluid analysis, and an electroencephalogram. All of these results were within normal limits except for a urine drug screen that was positive for cannabis, mild leukocytosis and vital sign instability. Early on, he received a few doses of haloperidol as needed for agitation. He later demonstrated symptoms consistent with catatonia, including verbal response latency, perseveration, verbigeration, stereotypy, automatic obedience, upper extremity rigidity, staring episodes, and autonomic abnormalities. Mood was generally euthymic, but at times euphoric. He scored a 12 on the initial Bush-Francis Catatonia Rating Scale and had an improvement in symptoms with one oral dose of lorazepam 1mg by mouth, which was then titrated to 2.5mg four times daily by mouth. He showed slow but gradual symptom improvement with increased verbal fluency, more organized thoughts, resolution of paranoia, and vital sign stability. After five days on the behavioral health unit, the patient was allowed to discharge against medical advice to his family’s care with scheduled psychiatry follow-up. His Bush-Francis score at that time was 4, and he regained his

ability to perform basic ADLs. This case report gives an account of a prominent episode of psychosis and catatonia following frequent use of cannabis concentrates in a patient with no previous psychiatric history. Many studies show an association between cannabis use and psychosis, but there is much less known about the association between cannabis and catatonia. There are a few documented cases of catatonia associated with cannabis withdrawal. In this poster, we discuss various factors contributing to this patient's presentation, as well as possible mechanisms behind cannabis withdrawal and catatonia. We also discuss potential medication management options for this case.

No. 26

Contrasting a Case of Hysteria Using Freud's Analytic Method and the Hermeneutic Method of Husserl and Jaspers

Poster Presenter: Priya Mahajan, M.D.

Co-Author: Peter Longstreet

SUMMARY:

Background: We describe a case of a patient who developed depersonalization, derealization and fear of dying after euthanizing her cat. As Freud postulated, repressed desires and urges are stored in the unconscious. We have chosen to use Freud's analytic method, using the Dora case and Electra complex, to interpret this case, along with a review of the literature. In addition, we attempt to demonstrate the utility of using the hermeneutic method of interpretation as described by Husserl and Jaspers. **Case:** We report a case of a 15-year-old Caucasian female who had been treated for an anxiety disorder for two years with psychotropics and therapy. However, she stopped the medications due to side effects. In the context of having to euthanize her cat, she abruptly developed worsening anxiety with a constant fear of death and dying. Subsequently, she began feeling "disconnected," as if she was suspended above herself while watching her body, which appeared to be "robotic and unreal," at which time she would feel "emotionally numb" and detached from her surroundings. Her insight and grasp on reality remained intact. While she experienced anxiety, she also became depressed and endorsed neurovegetative symptoms. In

addition, she described having an adversarial relationship with her father, admitting "I hate him." As he had never responded to her overtures to bond with him, she felt rejected by him. In response, she pleaded with her mother to leave him, which proved unsuccessful. Currently, she lives with her parents and has no siblings. She denies any history of abuse. She has no significant or active medical conditions, nor has she used tobacco, alcohol or illicit substances. She is homeschooled. She was started on sertraline, which initially led to some improvement in her anxiety, yet the specific symptoms of depersonalization and derealization continued unabated. **Conclusion:** We have presented a case that emphasizes how repressed desires are unconscious and expressed physiologically in the form of bodily symptoms. Using Freud's Dora case, we have interpreted that the death of her cat triggered hysterical symptoms of derealization and depersonalization, as well as existential angst regarding her own mortality. Furthermore, per the Electra complex, this dynamic could be interpreted as fueling her desire to get rid of her mother so as to have her father to herself. Our proposed therapeutic focus is to develop an empathic understanding of her psychic experiences, thereby enhancing her ego strength to manage any emerging unconscious material into her consciousness to effect change.

No. 27

Movie Nights During Residency Training: A Learning Tool

Poster Presenter: Mallikarjuna Bagewadi Ellur, M.D.

SUMMARY:

Background: Psychiatry residents—in particular, international medical graduates (IMGs)—have diverse training needs during residency. While IMG residents get acquainted with a new culture and its values, the process of acculturation can be particularly challenging in the absence of supportive resources. This is particularly applicable to the care and treatment of special populations, in specific, the LGBT population. **Methods:** We aim to demonstrate that adopting a movie club and movie nights can be an effective training tool for IMGs during residency. We believe that this is a beneficial educational experience and plan to use a 10-item questionnaire

to evaluate the experience of residents attending movie nights in our program. Our aim is to demonstrate the benefit of using films as an educational tool to develop cultural sensitivity and enhance the cultural competency of internationally trained residents. **Discussion:** Literature indicates that movies can be a strong and effective medium of communication and education, in particular about the challenges faced by marginalized population such as LGBT populations. Group movie viewing followed by a discussion about the core psychological processes and challenges highlighted in the movie can be an effective tool to enhance resident understanding about specific issues. This method of learning has been adopted in our residency program. **Conclusion:** Utilizing film clubs and movie nights as an educational tool can be a vital training experience that enhances cultural sensitivity and smoothens the process of acculturation of internationally trained residents.

No. 28

New-Onset Psychosis in Chronic Neurocysticercosis: Related or Pure Coincidence?

Poster Presenter: Danielle Chang

Co-Author: Elena Ortiz-Portillo, M.D.

SUMMARY:

Mrs. V., a 40-year-old Hispanic female with no past psychiatric history and no history of seizures, presents to the psychiatric emergency room due to agitation, paranoid delusions and self-mutilating behavior. Per her husband's report, the patient had been acting bizarrely and exhibiting grandiose, hyper-religious delusions for a three-month duration prior to her initial presentation at the hospital. Upon evaluation, the patient was found to have punctate calcifications in the left frontal parietal region of her brain on MRI and CT. Initial EEG was negative for seizure activity. Urine toxicology screen was negative. Laboratory results were only significant for mild transaminitis. Neurology was consulted and determined that the etiology of the patient's abnormal brain imaging was due to chronic neurocysticercosis. She was started on oral antipsychotics to target psychosis. On day four, the patient had a witnessed tonic-clonic seizure and was started on lamotrigine for seizure prophylaxis. She was discharged home with a plan to follow-up with

neurology and psychiatry on an outpatient basis. However, two days later, the patient presented again to the psychiatric emergency room for exacerbation of psychosis and a new-onset rash. The patient disclosed that she had been hearing auditory hallucinations for two to three years, but had been able to ignore them in the past. Lamotrigine was discontinued, and she was started on divalproex, which was later discontinued due to neurology's assessment that seizure prophylaxis was not necessary. The patient was admitted to the inpatient psychiatric unit for one week for further evaluation and stabilization. In this poster, we review the existing evidence regarding neurocysticercosis and neuropsychiatric syndromes, and we discuss the possible correlation between new-onset psychosis and chronic neurocysticercosis, as well as the diagnostic and treatment considerations in patients with late-onset psychotic symptoms.

No. 29

Ethical Considerations and The Role of Capacity Evaluation in a Challenging Case of a Jehovah's Witness Patient

Poster Presenter: Sheldon Brown, M.D.

Co-Authors: Daniel Witter, M.D., Ph.D., Mahdi Razafsha, M.D.

SUMMARY:

The evaluation of decision making capacity is a critical yet challenging assessment. Psychiatrists are often called to render an opinion when a patient's capacity to make decisions becomes equivocal. Capacity evaluations are potentially more difficult in patients with specific religious beliefs that affect their health care decisions. In this poster, we present a 35-year-old patient requiring surgery for an unintentional surface burn covering 50% of his body. Surgery to treat the burns was likely going to cause a significant loss of blood and require multiple blood transfusions. The patient was heavily sedated due to intubation and was unable to communicate his decision regarding blood transfusion. The patient, however, became briefly more alert. He communicated during that time to a nurse that he is a Jehovah's witness and is not supposed to receive a blood transfusion. He became obtunded again immediately following this conversation. The primary team was not convinced the patient really

belonged to Jehovah's witnesses, as this has been a single report during the patient's confusional state. Unfortunately, there was no document or collateral information available to confirm the patient's faith and his belief system on blood transfusion. A subsequent trial of weaning the patient off pain medications did not make the patient alert enough to communicate his choices and belief system. In this poster, we discuss ethical dilemmas involved in this case and the role of capacity evaluation in determining the conclusion.

No. 30

Salvia-Induced Psychosis

Poster Presenter: Sarah Sheikh, M.D.

Co-Authors: Srinkanth Reddy, Asghar Hossain

SUMMARY:

Background: Salvia divinorum (Salvia) is a recreational drug used by adolescents and adults; the active component, Salvinorin A, acts as a κ opioid receptor agonist in the brain, altering senses of perception and causing dissociative symptoms such as depersonalization, derealization, spatiotemporal dislocation, and various hallucinogenic effects. It can also be responsible for the development of persistent psychotic disorders. It is necessary for physicians to be cognizant of Salvia's potential pathologic effects in high-risk populations.

Objective: Report a case of Salvia-induced psychosis and to review the available literature from PubMed and Google. **Case:** M. T. was an unemployed 49-year-old single Caucasian female. The patient was admitted to the ER with police escort for altered mental status accompanied by symptoms of paranoia and delusions. On initial evaluation, the patient expressed paranoid thoughts that she was being followed by her "ex-friends." She reported feeling uncomfortable and had recently moved to a hotel to escape from them. Past psychiatric history revealed a diagnosis of schizophrenia–paranoid type with two prior psychiatric hospitalizations, medication noncompliance and a suicide attempt in 1998. Familial psychiatric history is unknown. The patient admitted daily cannabis use since 1998 and an extensive 10-year history of smoking Salvia; however, she denied use of other illicit drugs. Past medical history included hypothyroidism, SLE and fibromyalgia. The patient appeared of stated age,

with increased psychomotor activity, angry and irritable mood, and a labile affect. The patient denied suicidal and homicidal ideation, as well as auditory and visual hallucinations, at time of her examination. She was awake, alert and oriented to person, place and date, with limited judgment and insight. The patient was admitted with differential diagnosis of schizophrenia–paranoid type, schizoaffective bipolar disorder, and cannabis and Salvia abuse (Salvia-induced psychosis). The patient was admitted involuntarily, and appropriate pharmacotherapy was initiated, after which improvement of symptoms was shown. **Discussion:** Review of available literature has indicated that the use of Salvia can induce psychosis within adolescent and adult patients. Similarities exist between Salvia divinorum and other recreational drugs inducing psychotic disorders. Our patient disclosed chronic use of Salvia via smoke inhalation before experiencing symptoms of paranoia and delusions. Other symptoms included dysphoria and anxiety. The symptoms are likely due to Salvia's effect on different neurotransmitters. **Conclusion:** We have discovered that there is a likelihood of experiencing Salvia-induced psychosis within patients who have a history of substance abuse and a predisposition to psychiatric illness. Psychiatric awareness of Salvia's effects is significant, considering different treatment modalities.

No. 31

To Flip or Not to Flip? the Effect of a "Flipped Classroom" on Medical Students' Learning of Child Development

Poster Presenter: Cory Johnson

Co-Authors: Erica Shoemaker, Cha-Chi Fung

SUMMARY:

Background: The positive effect of "flipped classroom" in the K-12 education system has been well documented. This effect has also been found in studies of college courses. Although many medical schools have started making lecture attendance optional as their interpretation of "flipping" the classroom, the effect of such a teaching method on the learning of medical content is still sparse. The aim of this study is to examine if medical students learn and retain knowledge content better when it is taught in a flipped classroom model. We asked the

following questions: Do year 1 medical students perform better on a knowledge test after attending a lecture-based classroom session than their baseline performance before the session? Do year 1 medical students perform better on a knowledge test after attending a case-based flipped classroom session than their baseline performance before the session? Does the case-based flipped classroom module have a larger effect on learning than the traditional lecture-based module? **Methods:** This is a prospective crossover single-subject study design. The entire span of child development was divided into two equal parts by content volume and difficulty. Module 1 (age 0–5) was delivered in a case-based format including a pre-session assignment of a 15-minute video on the fundamentals of child-development. Module 2 (age 6–18) was delivered in a lecture-based format. Both modules were part of the standard year I medical school curriculum. Participation in the study was voluntary. A knowledge test was given to examine their content knowledge right before and right after the lesson. A six-month follow-up test was scheduled to assess knowledge retention in April of 2015. IRB approval was obtained. **Results:** Eighty-two of the 189 students volunteered to participate. Paired sample t-tests were conducted to examine differences in performance between the pre-test and post-test on modules 1 and 2. Students scored significantly higher on module 2 post-test (mean=3.16, SD=0.92) than pre-test (mean=1.80, SD=1.04) ($t=9.575$, $df=81$, $p<0.001$). The difference achieved a large effect ($d=1.39$) as measured by Cohen's D. Students also scored significantly higher on module 1 post-test (mean=2.87, SD=0.91) than pre-test (mean=1.93, SD=0.86) ($t=7.209$, $df=81$, $p<0.001$). Although the difference has also achieved a large effect ($d=1.06$), it was slightly smaller than module 2. **Discussion:** It is not surprising that the lecture-based module achieved higher effect than the case-based module, as the tests were given immediately after the lesson. We speculate that content learned in the case-based flipped classroom module will retain better than content learned in the lecture-based module when measured six months out.

No. 32

A Novel Comprehensive Quality Improvement and

Patient Safety Curriculum Within Psychiatry Residency Training

Poster Presenter: Alison M. Duncan, M.D.

Co-Authors: Pamela Arenella, M.D., Caitlin Armijo, M.D., Heather F. Cumbo, M.D.

SUMMARY:

Background: Quality improvement (QI) has become a vital part of practicing medicine. There are few QI curricula tailored to the unique challenges of psychiatry. **Objective:** Quantify the current understanding of basic QI concepts in a psychiatry residency program, introduce a didactic and experiential QI curriculum to the psychiatry residents, calculate the educational impact of the implemented QI curriculum, and assess the challenges facing the UNM Department of Psychiatry Residency Training Program with regard to QI.

Methods: The psychiatry residency program consisted of six hour-long sessions held during regular didactic time. In accordance with adult learning models, experiential learning was incorporated into each session. Material covered included the importance of QI, the QI landscape, department priorities in QI, resident hopes and fears about QI didactics, how to identify a project, writing an aim statement, analyzing a problem with process maps and fishbone diagrams, stakeholder analysis and building a team, designing the intervention, PDSA cycles, and publishing. Department mentors were identified for each of the projects, and a group progress report and feedback session was incorporated into the regular didactic schedule. Primary endpoints were increased resident participation in QI and increased resident comfort with QI concepts. Systems Quality Improvement Training and Assessment Tool, survey of barriers to implementation and success of QI projects, and number of residents involved in QI before and after the program were used to measure the success of the program. Learners were assessed before the curriculum was presented and after the last didactic session. **Results:** Survey response was variable. In the pre-intervention survey, five of 24 respondents were involved in a QI project. In the post-intervention survey, 12 of 13 respondents were involved in a QI project. Four of 24 residents believed that they could implement a QI project before intervention compared to 10 of 12 after

intervention As of the most recent progress report and feedback session, all residents are involved in a QI project.

No. 33

Hemiballistic Movements: A Case Study!

Poster Presenter: Smit Shah, M.D.

Co-Authors: Pooja Shah, M.D., Stacy J. Doumas, M.D., Ramon Solhkhah

SUMMARY:

Case: The patient is a 60-year-old wheelchair-bound Caucasian male with a past medical history significant for neuroleptic-induced Parkinson's disease with increase BLE weakness and frequent falls, remote CVA, hyperlipidemia, ETOH abuse, BPH with neurogenic bladder, PTSD, and depression transferred for worsening of his movements. The movements can be described as episodes of dyskinetic storms that leave him in an almost paralyzed state each time they occur. The patient has a long history of PTSD with alcohol abuse. An army sniper by profession, he reports having flashbacks while intoxicated. He allegedly shot both his parents and was determined to be not guilty by reason of insanity. Head CT shows volume loss proportionate to his age and a falx meningioma 2 by 1.3cm. Spinal MRIs were significant for DJD throughout and chronic deformity at T8, with a bulging disc at T7–T8 without mass effect. The patient reports to getting weaker during the wearing-off phenomenon periods, which start within 35 minutes of taking 4:00 AM Sinemet. The patient has been on PRNs of Sinemet (25/100) in addition to the standing dose, ropinirole 6mg by mouth three times daily, rasagiline 1mg by mouth and amantadine 100mg twice daily by mouth. He has been tried on a number of strategies by PADREC. In addition, he has movements that were initially Parkinsonian in nature but are now flailing and almost hemiballistic, along with dementia. He is on Seroquel 100mg and amitriptyline 100mg.

Discussion: Hemiballistic movements are described as flailing or flinging movements of the upper or lower extremities, depending on the etiology. For instance, multiple case reports in the past have demonstrated multiple interesting causes: MCA stroke, either ischemic or hemorrhagic, hypoperfusion secondary to carotid artery occlusion,

metabolic causes like hypoglycemia and HIV, and possible medication-induced side effects, which could possible alter the intrinsic firing rate of the subthalamic nucleus. In our patient, it is possible that multiple vascular risk factors like CHD, CAD and DM could have possibly contributed to hypoperfusion to the subthalamic nucleus, which could have led to initial Parkinsonian tremor and, in turn, converting into hemiballistic movements. In addition, it would be interesting to see if there was expansion of the infarcted area from the MCA distribution from perforators of lenticulostriate vessels to large vessel disease that covers the subthalamic nucleus. Another possibility is the presence of hydrocephalus ex-vacuo in this patient due to age-related degeneration of the periventricular area, including the subthalamic nucleus, which could lead to his symptomatology. In terms of treatment, a case report by Mukand et al. demonstrated the use of olanzapine, which is an atypical antipsychotic. It will be interesting to see how this patient progresses throughout the course of treatment.

No. 34

Neurofibromatosis and Psychopathology:

Schizoaffective Disorder Bipolar Type in a Geriatric Patient

Poster Presenter: Sameerah Akhtar, M.D.

Co-Authors: Natalie Seminario, Asghar Hossain

SUMMARY:

We report a case of a 65-year-old Caucasian female with a long history of neurofibromatosis type I and schizoaffective disorder, bipolar type, who presented to the emergency room with complaints of paranoid delusions worsening since her last discharge one month ago. The patient had paranoid delusions toward her son, as she believed he stole her identity and her social security checks. The patient exhibited verbal aggression toward and physically threatened her son. The patient also had a history of multiple suicide attempts and recent suicidal ideations. Screening services were contacted, and the patient was admitted involuntarily to the hospital. The patient's psychopathology is multifactorial, as she described high expressed emotions in the household as a child, family history of neurofibromatosis, chronic

psychiatric illness, and tumultuous relationships. The patient reported a history of chronic depression, chronic mania, anorexia nervosa restricting type, and recurrent psychosis. She denied any childhood developmental delays, autism spectrum disorder, intellectual disabilities, seizure disorders, or learning disabilities. Neuropsychopathology in patients with neurofibromatosis has commonly been recorded as involving seizure, global cognitive impairment, ADHD, and learning disabilities present from a young age, which indicates that this patient's mood disorders and psychosis are likely a product of both genetic and environmental stressors. In NF1 mutations, P13K-mTOR has been found to be overactive. The overactivity commonly leads to defects in synaptogenesis, which have been linked to early neurodevelopmental issues seen in mood disorders and as seen in our patient. This likely correlation indicates that not only does NF1 create predispositions to psychopathology, but is perhaps a target for future treatment. Further research is necessary to better understand the effects of NF1 mutations on the development of psychopathology and develop treatment plans that encompass medical and psychiatric treatment.

No. 35

Psychiatric Manifestations With Unbalanced 9p and 10p Chromosome Translocation

Poster Presenter: Sameerah Akhtar, M.D.

Co-Authors: Sohi Gobind, Asghar Hossain

SUMMARY:

Case: The patient is a 13-year-old male with a history of aggression, including hitting, spitting on and biting family members. On observation, the patient is preoccupied with repetitive playing with objects in his hands and is nonresponsive to verbal communication. He has no control over his bowel and bladder movements. His current diagnosis includes unspecified intellectual disability, impulse control disorder and unspecified ADHD. He has a past medical history of a seizure disorder and was diagnosed with a 9p 10p unbalanced chromosomal translocation at birth. The patient had delayed cognitive and motor milestones. He has a nine-year-old brother who also has developmental delay, but no other family history of mental illness was reported. **Discussion:** Our patient is only the second

case ever presented with unbalanced 9p 10p chromosomal translocation. Phenotypic abnormalities observed in such patients are due to breakage of DNA at point, which leads to disruption of successful gene transcriptions, causing loss of genetic material. Unbalanced translocations can occur by two mechanisms. They can either be due to a de novo rearrangement or can be familial, where one of the parents is a carrier of a balanced translocation, leading to unbalanced transfer of chromosomes. Most patients of unbalanced translocation can present with either physical or intellectual disability or both. Our patient most likely had a de novo rearrangement of chromosomes, as the chromosomal analysis of his younger brother showed no translocations. Due to the rarity of such translocation, we were unable to verify the similarity of symptoms among other patients with such translocation. The diagnosis of the only other case was made through amniocentesis, and the pregnancy was subsequently terminated as a result. Fetal ultrasound and postmortem analysis showed signs of nose anomalies, cleft lip palate, low-set ears, club feet, lung anomalies, cystic kidneys, aplasia of the uterus, and depression on the base of the cerebellum. Our patient in this case showed symptoms of hypotonia and tight heel cords shortly after birth, blocked tear ducts, recurrent ear infections probably due to structural ear abnormality, developmental delays, seizure disorder, intellectual disability, and extremely aggressive behavior. **Conclusion:** Due to the rarity of some chromosomal translocations and the vast number of possible combinations, reporting of such rare cases and their symptoms is paramount in helping other families with similar diagnosis know the course of disease.

No. 36

The Impact of PTSD on the Development of Psychosis

Poster Presenter: Sameerah Akhtar, M.D.

Co-Authors: Natalie Seminario, Asghar Hossain

SUMMARY:

We report a case of a 19-year-old Hispanic female who presented to the emergency room after four months of psychotic symptoms following one episode of sexual assault that occurred one month

prior to the onset of symptoms. The patient reportedly began an online relationship with a male individual who drugged and sexually assaulted her. After her mother's interference and confrontation of the male individual, the patient became withdrawn, unable to care for herself and delusional. The patient's delusions included the imminent arrival of hurricane Katrina and that it was the year 2020, the food in her house was expired, her entire family was dead, and "shadow people" surrounded her. In the case of our patient, her separation from her parents was the initial trauma in her life. At the age of three, the patient was left in Peru with family and reunited with her mother at age 13. This separation likely led to proximity-avoiding behavior in conjunction with contact-maintaining behaviors toward her mother, accumulation of stress and increased vulnerabilities. The high expressed emotion in following years, along with poor social support and interpersonal skills, contributed to the patient's psychosocial stressors, as well as hindered the potential for the development of proper coping skills. These deficiencies in her coping skills and protective factors, which were a result of her preexisting PTSD, left her more susceptible to the aftermath of this trauma. While the precipitating factor for this patient's decompensation is clear, the role PTSD played is complex and compelling. A variety of studies show that PTSD is a common comorbid disorder in severe mental illness that tends to be minimized in psychiatric clinical environments and correlated with a worse prognosis and outcomes. Further research and emphasis is needed on identifying and understanding the catalytic effects of PTSD on the development of psychopathology.

No. 37

Is Blood Inevitably Thicker Than Water? The Impact of Genetic and Environmental Factors on the Development of Schizophrenia in a Man With a Strong Family

Poster Presenter: Sameerah Akhtar, M.D.

Co-Authors: Natalie Seminario, Asghar Hossain

SUMMARY:

We report the case of a 21-year-old Hispanic male with a strong family history of schizophrenia who, after one inpatient hospitalization one week prior, presented to the ER with two months of symptoms

of religious and political preoccupations about his homeland El Salvador, auditory hallucinations command type, paranoid and persecutory delusions, and depression. The patient reported medication compliance, but his paranoia worsened. The patient's paranoid delusions led to isolating behaviors. He became newly obsessed with the idea that people were trying to poison his food. The patient reported good relationships within his family, but he denied having friends, romantic relationships, hobbies, employment, or stable course of education. The patient was born without delivery complications and had no childhood developmental delays. At the age of three, the patient's mother passed away due to cancer. After this tragic loss, the patient lived alone with his schizophrenic father in El Salvador until the patient himself emigrated to the United States at the age of 20. The patient's father, older brother and older sister were diagnosed with schizophrenia, but are currently stable on medications. The patient's symptomatology was not only predisposed by his strong family history, but also precipitated by his environment of high-stress situations such as the loss of a parent, separation from siblings, living alone with a mentally ill parent, and relocation from his home country. The dynamic between nature and nurture as the cause of mental illness has been long debated, but there is a clear influence of environmental factors that contribute to protecting, predisposing or perpetuating the genetic vulnerabilities of the disease. While approximately one percent of the general population suffers from schizophrenia, the percentage of inheritance increases to 10% with a first-degree relative and to 48% with identical twins. Even though identical twins share 100% of their genes, their concordance rate is only 50%, which indicates that the risk of having the disease is only partially genetic and that other components, like environmental factors, affect outcomes. Studies continue to investigate the relationship between these factors and their influence on the development, severity and course of schizophrenia.

No. 38

Antipsychotics in Pregnancy and Lactation

Poster Presenter: Naeema Noor Hassan

Co-Authors: Yassar Odhejo, Arturo Archila, Asghar Hossain

SUMMARY:

The first generation of antipsychotic was developed in the 1950s. Although effective, they can have serious adverse effects, including extrapyramidal symptoms and hyperprolactinemia. Second-generation antipsychotics (SGAs) first came on the market in 1990. SGAs accounted from zero percent of prescriptions in early 1990 to 78% to in 2005. The clinical profiles of SGA drugs have improved, specifically the decreased risk of hyperprolactinemia, which means that women have increased opportunities to conceive. An American population-based study of 585,615 deliveries from 2001 to 2007 showed a 2.5 times increase in SGA treatment among pregnant women during the study period. Depression was the most common indication for treatment in pregnant women (63%), followed by bipolar disease indication (43%) and psychosis (13%). Since a large number of pregnancies in mentally ill women continue to be unplanned, the chance of fetal exposure to psychotropic drugs, especially in the first trimester, is high. It is estimated that about 80% of women treated for psychotic disorder are on multiple psychotic drugs, which may represent a concern for reproductive safety. The choice of antipsychotic treatment during pregnancy remains subject to controversy, mainly due to lack of exposure and outcome data. None of the antipsychotic medications hold a licensed indication during pregnancy. Use of SGA in polytherapy was associated with adverse pregnancy outcome for both mother and neonate. Exposure to SGA monotherapy represented lower risk to the fetus. Evidence regarding antipsychotic safety in pregnancy is still insufficient to provide adequate support for clinical practice, creating increasing concern. Professionals of related fields (psychiatrists, obstetricians-gynecologists, primary care physicians) often provide patients with contradictory information due to their lack of sufficient knowledge. Breastfeeding carries many health advantages and is described as the only nutrition necessary during the first four month of life. Drug excretion into the breast milk of less than 10% of maternal dose is unlikely to lead to dose-related events in the infants, according to the American Academy of Pediatrics Committee on Drugs in 1994. FGAs appear safe, evidenced by lactation studies

that have consistently reported milk/plasma ratios of less than 1. SGAs, olanzapine, quetiapine, and risperidone achieve very low levels in infant plasma, with no evident adverse effects, suggesting that these agents may be safe. Clozapine achieves relatively high concentrations in breast milk and infant serum; agranulocytosis and somnolence have been reported. Psychiatrists are required to participate in shared decision making about medications as well as provide knowledge on the benefits and risks of antipsychotics.

No. 39**Swept Under the Rug: The Impact of the Social Graces of Asian Culture on Schizophrenia Diagnosis, Treatment and Prognosis**

Poster Presenter: Natalie Seminario

Co-Authors: Kathleen De Wyke, Rubina Sharief, Jaya Gavini

SUMMARY:

We report a case of a 13-year-old Asian male who recently immigrated with his family from China to New Jersey with complaints of audio hallucinations, visual hallucinations, paranoid delusions, suicidal ideations, and homicidal ideations, which had been present since age five. The patient reported that he and his parents were aware of his symptoms, yet never sought help for fear of "bringing shame to the family." This was his first psychiatric inpatient hospitalization after multiple episodes of aggression and intense homicidal ideations toward his father. Even in his psychotic state, the patient maintained the insight of what was culturally acceptable of him and refused to divulge any information that could potentially be shared to bring light to scandal or dysfunction in his family. Over the course of the hospitalization, the patient came to share more, but was very anxious when refusing to answer questions involving sexual indiscretions. Asian-American families traditionally function as one unit that strives to bring honor, avoid shame and exist in harmony. As society continues to evolve, fundamental codes and expectations continue to stand the test of time and geographic location. While the Asian culture brings a sense of belonging to many in the United States, the constraints have been noted to create obstacles when seeking health care. One study reported that 15% of a 2,000-person group of Asian

Americans sought mental health help for emotional distress. This was only further reinforced by a 20-year study indicating that the Chinese-American population was found to have the most unmet mental health needs. While other studies indicate that the most sought out type of help was informal, this can be an issue in illnesses like schizophrenia where medications are the standard of care. Due to the stigmas associated with mental illness within Asian culture, mental illness is often left mismanaged or entirely untreated. Studies show that Asian Americans are less likely than many other groups to seek help with psychiatric illnesses, even when having access to mental health services. Further outreach and public education in the Asian-American community is essential to provide a better understanding of mental illness for better outcomes and prevent suicide, as we can only treat those who seek help.

No. 40

Clonidine: The State of Evidence in Treatment of Mania

Poster Presenter: Shahana Ayub, M.D.

SUMMARY:

In numerous case reports and some small studies, clonidine was effective in treating manic and mixed states of bipolar disorder. Why has the research stopped? Why develop atypicals? Clonidine is a viable consideration for adjunct treatment in mania and mixed states with rapid response and less monitoring. In this poster, we review a case when clonidine was used in a patient with bipolar disorder type 2 in a mixed state with rapid response and improvement of symptoms.

No. 41

Chronobiology of Recurrent and Bipolar Depression

Poster Presenter: Sergejus Andruskevicius, M.D.

Co-Authors: Violeta Meiner, Giedre Vindasiene

SUMMARY:

Objective: Study circadian rhythms of the parameters of spectral analysis of heart rate variability in the treatment of recurrent and bipolar depression. **Methods:** Sixty-eight patients have been studied (ICD-10: F 31.3–31.4, F 33.0–33.2). Mean patient age was 43.8 ± 10.4 years. The patients have

been divided into two groups: group 1 consisted of 32 patients with recurrent depressive disorder, and group 2 included 36 patients with bipolar affective disorder. Severity of depression was determined in accordance with HAMD-17 and the level of anxiety in accordance with HAMA. Assessing the autonomous regulation of the cardiovascular system the spectral analysis of heart rate variability was applied. The power spectrum density (PSD) of low frequency (LF) and high frequency (HF) range was established. The patients were examined at 1 a.m., 7 a.m., 1 p.m., and 7 p.m. prior to the beginning of treatment, at the end of the first week of treatment and at discharge from the hospital. In order to determine the daily curve of changes in the indices under investigation, the control group (15 mentally healthy people, mean age 44.9 ± 9.3 years) was examined at 1 a.m., 4 a.m., 7 a.m., 9 a.m., 11 a.m., 1 p.m., 3 p.m., 4 p.m., 5 p.m., and 7 p.m. in summer. **Results:** Prior to the therapy, desynchronization of the circadian rhythms of the parameters of spectral analysis of heart rate variability and the “sleep-wake” rhythm has been observed. This manifested itself in the shift of the phase of the circadian rhythms of the parameters under study toward the earlier time of the day. Prior to the beginning of treatment, desynchronization of the circadian rhythms under study was more pronounced in the night/morning hours in group 1 and in the day/evening hours in group 2. This difference persisted in the course of positive therapeutic dynamics. **Conclusion:** Depressive patients diagnosed with recurrent depressive disorder had more pronounced circadian disorders in the night/morning hours. Depressive patients diagnosed with bipolar affective disorder had more pronounced circadian disorders in the day/evening hours.

No. 42

Electroconvulsive Therapy (ECT) in Treatment-Resistant Depression (TRD): A 12-Month Cohort Study in the City of Milan, Italy

Poster Presenter: Dario Delmonte

Co-Authors: Silvia Brioschi, Federica Milandri, Massimiliano Nuzzi, Barbara Barbini, Cristina Colombo

SUMMARY:

Background: Despite appropriate treatment, 30–

40% of patients with a depressive episode don't achieve improvement. Depression is associated with high morbidity and mortality. Pharmacological treatment is the first choice; other approaches are widespread. In Milan, we treat about 20 inpatients per year with ECT for TRD (Thase and Rush criteria). Although ECT is considered one of the most effective antidepressant therapies, the maintenance strategy and the relapse prevention still remain an open topic. We performed an observational study for responsiveness, tolerability and long-term outcome of ECT, analyzing main predictors. **Methods:** The sample was recruited between 2005 and 2015—54 inpatients undergoing bitemporal ECT twice/week with MECTA spectrum device. We collected main demographic and clinical data. Hamilton Rating Scale for Depression (HAM-D) and Mini Mental State Evaluation (MMSE) were administered before and after the treatment to assess the course of illness. Follow-up evaluations were conducted at the first, third, sixth, and 12th month after the treatment. Clinical response was defined as 50% reduction of HAM-D score at the endpoint from baseline and remission as HAM-D score at the endpoint under 8. T-Test, χ^2 and survival analysis were performed. **Results:** Participants were 33 (61.1%) female and 21 (38.8%) male, mean age 59.1±11.4. Primary diagnosis included 40 (74.0%) bipolar and 14 (25.9%) major depression. Mean age at onset was 40.2±13.8years. Mean number of episodes was 4.6±3.5. Mean duration of current episode was 47.6±36.9 weeks. Mean HAM-D basal score was 30.6±4.9. Twenty-three patients (42.5%) had severe delusional depression; 13 (24.1%) attempted suicide. Each patient underwent a cycle of ECT (mean N°=7.0±2.9). Pharmacological treatment was administered upon clinical need. We had a response rate of 92% and a remission rate of 44%. No patient discontinued the treatment for side effects. During the follow-up period, we had the following relapse rates: 5.5% within the first month, 3.7% within the third month, 16.6% within the sixth month, and 14.8% within 12th month. At the end of the follow-up period, 32 of 54 patients (59.4%) had achieved well-being. Predictors of higher relapse rate were longer period of depression (T-value=3.9; p=0.00), basal MMSE score under 25 ($\chi^2=2.9$; p=0.08), concomitant cerebrovascular abnormalities (Kaplan and Meier survival analysis, p=0.06). Predictor of lower relapse

rate was remission ($\chi^2=2.5$; p=0.1). **Conclusion:** Our Italian experience confirms that ECT is a powerful antidepressant, especially in patients with severe long-lasting depression refractory to treatment. ECT is also a safe procedure—no adverse effects were reported in our sample. After the 12-month observation period, 60% of patients were still well, treated with pharmacotherapy. Mild cognitive impairment and/or structural abnormalities (atrophy, vasculopathy) together with a longer period of illness were the main variables associated with worse response rates and higher relapse rates. Early intervention and full acute remission are predictors of better outcome.

No. 43

Risk of Postpartum Depression in a Public Hospital in Nicosia, Cyprus

Poster Presenter: Philippos Gourzis

Co-Authors: Giannos Andreou, George

Charalambous, M.D., Konstantinos Argyropoulos,

Eleni Jelastopulu

SUMMARY:

Background: Postpartum depression (PPD) is a serious mental health condition with severe consequences affecting the health and well-being of the mother and her child. Appropriate screening for and prompt recognition and treatment of depression after the birth of a child, are essential for maternal and infant well-being. **Objective:** The purpose of this study was to estimate the prevalence of PPD in the first five days after the birth of a neonate and to investigate associations with several risk factors. **Methods:** A cross-sectional study was conducted among 150 mothers in a public obstetric hospital in Nicosia, Cyprus. A questionnaire was administered, including sociodemographic characteristics. The Greek version of the Edinburgh Postnatal Depression Scale (EPDS), a 10-item questionnaire to identify women who are at risk of PPD, was used to estimate depression among the participants. **Results:** According to the EPDS, 42% of the mothers screened positive for risk of developing PPD. Higher risk was observed in very young mothers (under 20 years old; 66.6% vs. 15%), in women with history of psychological disorders (86.95% vs. 33.85%), in single mothers (71.69% vs. 22.8%), in women with serious problems during the pregnancy (74% vs.

23.95%), and in mothers with an unhealthy neonate (75.7% vs. 32.4%). **Conclusion:** The study reveals a high prevalence of PPD and identifies various risk factors associated with developing PPD. The use of maternal depression screening programs such as the EPDS may help recognize an elevated risk of postpartum depression and ensure a healthier mother-child relationship.

No. 44

Diffusion Tensor Imaging in Psychotropic Drug-Naïve Pediatric Patients With First-Onset Major Depressive Disorder

Poster Presenter: Eunsoo Suh

SUMMARY:

Background: Development of neuroimaging techniques such as fMRI, MRS and DTI demonstrated changes in the function and the structure of brain in patients with major depression. Diffuse tensor imaging (DTI) is a technique that quantifies diffusion of water molecules in fiber bundles and provides axonal integrity and bundle coherence. In previous studies of pediatric depression using DTI, decreased neural connectivity in several regions of the brain, including the amygdala and anterior cingulate cortex, has been reported. We will compare neural connectivity of the psychotropic drug-naïve pediatric patient with first onset of major depressive episode to the healthy control using DTI. **Methods:** Twenty-six psychotropic drug-naïve adolescent patients (10 males, 16 females, age range 13–18) who visited Korea University Guro Hospital and were diagnosed with first-onset major depressive disorder were registered. For the healthy control, 27 participants (6 males, 21 females, age range 12–17) were recruited. Psychiatric interviews, full psychometrics including IQ, HAM-D and MRI, including diffusion weighted image acquisition, were done prior to antidepressant administration for the patient group. Fractional anisotropy (FA) and radial (RD), mean (MD) and axial diffusivity (AD) were estimated using DTI. FMRIB Software Library (FSL) Tract-Based Spatial Statistics (TBSS) were used for statistical analysis. **Results:** Comparison of FA, RD, MD, and AD between the patients and the healthy controls did not show statistically significant difference. However, there was a tendency of lower FA and higher RD in the left anterior cingulate cortex region in the patient group,

which is consistent with many previous studies in which pediatric major depressive disorder patients have structural abnormalities in regions such as the left anterior cingulate cortex and amygdala.

Conclusion: There was no statistically significant difference in DTI-based structure between pediatric major depressive disorder patients and healthy controls. There was a tendency of lower FA and higher RD in the left anterior cingulate cortex, but decreased connectivity is not yet prominent in drug-naïve pediatric patients with first-onset major depressive disorder

No. 45

Depression Among Patients With Diabetes Mellitus in North India Evaluated Using the Patient Health Questionnaire-9

Poster Presenter: Amit Thour, M.B.B.S.

Co-Authors: Poorvanshi Alag, M.D., Yashdeep Gupta, M.D., Raman Marwaha, M.D.

SUMMARY:

Background: Depression is common among diabetes and is associated with poor outcomes. However, the data on this important relationship are limited from India. **Objective:** Estimate the prevalence of depression in patients with diabetes and determine the association of depression with age, sex and other related parameters. **Methods:** The study was cross-sectional, carried out in the endocrinology clinic of a tertiary care hospital in North India. Cases were patients with type 2 diabetes mellitus (T2DM) above 30 years old. Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9). The relationship with sociodemographic profile, duration of diabetes, hypertension, and microvascular complications was also analyzed. **Results:** Seventy-three subjects (57.5% females) with mean age 50.8 ± 9.2 were evaluated. The prevalence of depression was 41%. Severe depression (PHQ score of 15) was present in three (4%) subjects, moderate depression (PHQ score of 10) in seven (10%) subjects and mild depression in 20 (27%) subjects. Depression was significantly more prevalent in rural subjects (57%) when compared to urban ones (31%, $p=0.049$). Depression increased with presence of microvascular complications, fasting plasma glucose and hypertension, but the differences were not statistically significant. **Conclusion:** Our study

demonstrates higher prevalence of depression in patients with type 2 diabetes. Apart from belonging to the rural area, no other factor was significantly associated with depression. Therefore, depression should be assessed in each and every patient, irrespective of other factors.

No. 46

On/Off and/or Life/Death Fight/Escape

Poster Presenter: Assunta Lepri

SUMMARY:

The human living system, more than any other complex living organism, lives in a kind of whole immersion in its own physical and mental surroundings and is completely dependent on its own relations with others. It's an iper-complex system that lives, every moment and possibly in an automatic way, counterbalancing the rising, falling and changing of the framework that can change its own homoeostatic and over-refined balance. Such a delicate balance can easily be "upset" by any chance, novelty or element both inside or outside the system. The brain is appraised to contain about one hundred thousand million neurons, each one connected to other neurons by an average of ten thousand synapses for a total of one million of thousand millions of interneuronal connections. According to the French neurobiologist Jean Pierre Changeux and the American Gerald Edelman, the still growing neurons continually create temporary connections with each other in a completely random way, and such connections are quickly destroyed unless some outside influence causes their usage so that they settle. At the beginning, the neuronal net is so organized by its own usage and so goes on for the whole life through learning.

No. 47

Mental Health Consequences of a Major Social Protest

Poster Presenter: Michael Ni, M.P.H.

SUMMARY:

Background: Social movements are becoming more frequent around the world and could have a profound impact on population mental health, yet their mental health consequences remain sparsely documented. **Objective:** Examine the longitudinal

patterns and predictors of depression trajectories before, during and after the 2014 "Occupy Central/Umbrella Movement" (OCUM) in Hong Kong. **Methods:** We conducted a prospective study of 1,170 adults randomly sampled from the population-representative FAMILY Cohort. We administered interviews at six time points from March 2009 to November 2015: twice each before, during and after OCUM. The Patient Health Questionnaire-9 (PHQ-9) was used to assess depressive symptoms and probable major depression (PHQ=10). We investigated pre-event and time-varying predictors of depressive symptoms, including sociodemographics, general health status, resilience, family support, family harmony, and neighborhood cohesion. **Results:** Four trajectories were identified: "resistant" (22.6%), "resilient" (37.0%), "mild depressive symptoms" (32.5%), and "persistent moderate depression" (8.0%). Baseline predictors that appeared to protect against "persistent moderate depression" included higher household income (OR=0.18, 95% CI [0.06, 0.56]), greater psychological resilience (OR=0.62, 95% CI [0.48, 0.80]), more family harmony (OR=0.68, 95% CI [0.54, 0.86]), higher family support (OR=0.80, 95% CI [0.69, 0.92]), better self-rated health (OR=0.30, 95% CI [0.17, 0.55]), and fewer depressive symptoms (OR=0.59, 95% CI [0.44, 0.79]). **Discussion:** Depression trajectories following a major protest were comparable to those in the wake of natural disasters or terrorist attacks. Clinicians should be vigilant of the mental health consequences during and after social movements, particularly among individuals lacking social support.

No. 48

Normative Data and Psychometric Properties of the Connor-Davidson Resilience Scale (CD-RISC) and the Abbreviated Version (CD-RISC2)

Poster Presenter: Michael Ni, M.P.H.

SUMMARY:

Objective: Examine if the two-item version (CD-RISC2) of the Connor-Davidson Resilience Scale (CD-RISC) has adequate internal consistency and construct validity, as well as significant correlation with the full scale, and provide normative data for the CD-RISC and the CD-RISC2 in a Chinese general population in Hong Kong. **Methods:** 10,997

randomly selected participants, aged 20 years, completed the Chinese version of the CD-RISC (including the two items of the CD-RISC2), Patient Health Questionnaire, Family Harmony Scale, Family APGAR, and CAGE Questionnaire. Internal consistency and convergent and discriminant validity of the CD-RISC and CD-RISC2 were assessed. **Results:** Cronbach's α for CD-RISC and CD-RISC2 was 0.97 and 0.79, respectively. CD-RISC2 was associated with the 25-item version of the CD-RISC ($r=0.88$), depressive symptoms ($r=-0.18$), family harmony ($r=0.20$), and family functioning ($r=0.27$), but was not associated with alcohol consumption ($r=0.05$). The mean score for the CD-RISC and CD-RISC2 was 59.99 (SD=13.92) and 5.03 (SD=1.37), respectively. Men, younger individuals, and those with higher education or higher household income reported higher resilience levels. **Conclusion:** The Chinese version of the CD-RISC2 was demonstrated to be a reliable and valid measure in assessing resilience among the general population in Hong Kong.

No. 49

Does Where You Live Matter for Mental Health in One of the World's Most Densely Populated Cities?

Poster Presenter: Michael Ni, M.P.H.

SUMMARY:

Background: Neighborhood influences on health can be categorized as compositional effects ("the difference that people make to places") and contextual effects ("the difference that places make to people"). Using the FAMILY Cohort, we aim to identify the contextual and compositional influences of neighborhood cohesion and population density on health-related quality of life (HRQoL). **Methods:** A territory-wide random sample of households was surveyed from 2009–2011 in Hong Kong. We defined a neighborhood as a district council constituency area, which consists of about 17,000 residents. Using multilevel models, we examined the adjusted association of neighborhood cohesion and population density with HRQoL, measured by the mental (MCS) and physical (PCS) component score of the SF-12. Multiple imputation was used for missing values in socioeconomic position (household income, education, occupation, housing type). **Results:** We conducted multilevel analyses on 17,441 participants aged 15 years nested within

7,886 households and 388 neighborhoods (94.2% of all neighborhoods in Hong Kong). Neighborhood cohesion was significantly associated with MCS (regression coefficient of 1.57, 95% confidence interval [CI] [1.00, 2.15]), but not with PCS (0.16, 95% CI [-0.30, 0.62]), adjusting for age, sex, marital status, nativity, socioeconomic position, and neighborhood-level attributes (median household income, income inequality, population density). The association for MCS was attenuated (0.90, 95% CI [0.32, 1.50]), after additionally adjusting for individual-level perceived cohesion. High population density (200,000/km²) was significantly associated with MCS (-0.88, 95% CI [-1.69, -0.06]) after adjusting for individual and neighborhood-level factors, whereas population density between 100,000 and 200,000/km² was not significantly associated with MCS or PCS. **Conclusion:** Our findings demonstrate specific contextual influences on the mental component of HRQoL, where neighborhoods with higher cohesion and lower population density reported better individual mental HRQoL. Future studies could identify how urban policies can improve neighborhood cohesion and moderate the impact of population density on health-related quality of life.

No. 50

The Danger of Overlooking a Diagnosis of Delirium

Poster Presenter: Sabeen Haque

Co-Author: Natalia Ortiz

SUMMARY:

Delirium is a common preventable syndrome that is characterized as an acute decline in attention and cognition. The syndrome can be life-threatening, especially when the diagnosis is missed or not properly treated. In this poster, we discuss the danger of overlooking a diagnosis of delirium in the setting of substance use, as well as how commonly delirium can be missed if the patient is alert and oriented. This case involves a 36-year-old African-American gentleman with no past psychiatric history who presented to the psychiatric consultation-liaison service for a capacity consult. The patient was originally admitted to the hospital for multiple bilateral lower extremity gunshot wounds. He was initially intubated due to severe agitation and an inability to cooperate and stabilized in the

emergency department, after which he was transferred to the trauma bay unit. Shortly after this transfer, he began to develop symptoms of compartment syndrome in the right thigh, including an extravasation of blood and tense lateral and posterior compartments. He was taken to the operating room immediately for an emergent fasciotomy, after which he became noticeably agitated and combative with fluctuations in his mental status exam. He removed his Foley catheter and refused the closure of his fasciotomy. At this time, his urine drug screen came back positive for phencyclidine and cannabis; as a result, the primary team cleared him medically for discharge. The patient displayed multiple signs of delirium, including an altered level of consciousness, disorientation, psychomotor agitation, an inability to maintain focus and concentration, memory deficits and fluctuating emotional disturbances. He was also febrile, tachycardic and diaphoretic and had an elevated leukocyte count since admission. However, he was alert and oriented to person, place and time with the surgical team. The psychiatric consultation service recommended a thorough series of laboratory work, as well as low-dose psychiatric medications to control his behavior. He was found to have multiple medical illnesses that could have caused his delirium. This case emphasizes how easily a delirium diagnosis can be missed in the setting of substance use and the importance of a complete medical workup when signs and symptoms indicate a possible delirium diagnosis in order to avoid a medical emergency.

No. 51

Screening for Vitamin D Deficiency in a Public Mental Health Clinic: Is It Beneficial?

Poster Presenter: Janet Charoensook, M.D.

Co-Authors: Tiffany Seto, Christopher Fichtner, Jesus Bucardo, M.D.

SUMMARY:

Background: Recent research has generated increasing evidence that vitamin D (VitD), known for its role in calcium homeostasis, bone formation and maintenance, is activated and metabolized in the central nervous system and important in its functioning. Although possible links between VitD deficiency and brain dysfunction are still unclear, low

VitD levels have been reported in association with mood disorders and to be consistently low in multiple studies of patients with schizophrenia. Whether such findings reflect only the compromised general health status of persons with chronic mental illness, a subset of the broader problem of VitD deficiency in the general population, or indicate a more specific and possibly causal relationship between VitD deficiency and psychopathology remains to be determined. Given the widespread finding of VitD deficiency in the general population and the often marginal access to and/or utilization of primary care providers (PCPs) by persons with serious mental illness, the question arises as to the potential utility of including serum VitD levels among the laboratory studies commonly ordered in connection with psychiatric diagnosis and medication management in public mental health clinics. We discuss the utility of measuring serum VitD levels in this context and illustrate the significant findings from a public clinic that treats patients with psychotic, mood, trauma, anxiety and other disorders. **Methods:** VitD status is best determined by serum concentration of 25-hydroxyvitamin D, 25(OH)D, also known as calcidiol. 25(OH)D levels were analyzed for 102 patients over the 16-month period from August 1, 2011, through November 30, 2012. **Results:** Of 102 patients, only 22 (21.6%) had serum VitD levels that were within the normal range (30–100nmol/L), with 80 (78.4%) having evidence of VitD deficiency or insufficiency. Mean 25(OH)D level (N=102) for the sample overall was 23.4nmol/L±8.78nmol/L. The mean for the low 25(OH)D subset (N=80) was 20.0nmol/L±5.95nmol/L, compared to 35.6nmol/L±6.19nmol/L for those (N=22) who had levels in the normal range ($p<0.00001$). **Discussion:** The results of this initial study suggest that screening for VitD insufficiency in the public mental health setting can be fruitful, inasmuch as a high percentage of the patients sampled were low in VitD and would benefit from supplementation. The implications of these results demonstrate an opportunity to address a health issue that may have psychiatric ramifications. Patients in this study often did not have a PCP, rarely followed up with their PCP or were not screened for low VitD at those visits. Future analyses will provide the opportunity to examine whether there are differences across diagnostic groups in this

population. Whether the pervasive problem of VitD deficiency in this population will prove to have an underlying role in the expression of psychopathology, as has been hypothesized for schizophrenia, remains to be seen.

No. 52

WITHDRAWN

No. 53

“First, Do No Harm” Practicing Safe Patient Management

Poster Presenter: Raja Mogallapu, M.D.

SUMMARY:

Background: Utilization of benzodiazepines (BZDs) in the elderly accounts for 20 to 35% of the whole prescription treatment, whereas elderly persons represent only 12 to 16% of the total population. Epidemiological studies show that about 25% of patients over 65 living in old-age homes are treated with BZDs. Use of hypnotics was more prevalent among women than men and increased significantly with age. **Case:** An 80-year-old female presented with history of hypertension, GERD and possible cerebrovascular accident and was admitted to hospital with history of multiple falls and syncopal attacks, a significant one being three days prior to admission. On further investigation, the patient was found to have a third-degree heart block and had a pacemaker placed. Psychiatry was consulted for ongoing depression. On evaluation, the patient affirmed decreased need to sleep, decreased appetite, depressed mood, and feelings of hopelessness and loneliness. She denied suicidal/homicidal ideation or auditory or visual hallucinations at the time of evaluation. Stressors include loss of her son and two brothers within the last year. The patient was diagnosed with depression and started on Zoloft 50mg by her PCP. Later, she had followed up with her psychiatrist. She was prescribed Welbutrin 150mg twice daily. Her first dose of Welbutrin contributed to her accidental fall. Following that incident, she stopped both her medicine (Wellbutrin) and outpatient visits, but suffered multiple falls, even after stopping Welbutrin. At multiple cardiac visits in the last three months, all investigations were found to be within normal until this visit. On further questioning, the

patient stated that she was prescribed 2mg of Ativan for sleep four years ago following the death of her husband. She had no psychiatric family history or substance use and lived alone with good social support. Her MSE was significant for depressed mood and irritability. The side effects of Ativan were explained to her, and she agreed to Ativan taper.

Discussion: We should always obtain a detailed history about a patient’s current medications. We should routinely aim to educate patient about the side effects, interactions and tapering of psychotropic medications. A lifetime use of more than 90 doses of benzodiazepines, equivalent to twice a week for one year, has been shown to confer a 50% higher risk of dementia and double the risk of death. The risk of hip fracture is greatest within the first two weeks of therapy, increasing with higher doses and concomitant administration of other centrally acting nervous system drugs. We should consider biopsychosocial factors of patients when prescribing medications for identification of risk factors associated with prescribing certain psychotropic medications in the elderly population.

No. 54

Musical Hallucinations Treated With Atypical Antipsychotics in a Geriatric Population: A Case Series

Poster Presenter: Adam H. Schindzielorz, M.D.

SUMMARY:

Background: Musical hallucinations can be likened to the auditory equivalent of Charles Bonnet syndrome and frequently take the form of hymns, Christmas carols and show tunes, suggesting a level of nostalgic influence in their presentation and content. They are reported to occur most frequently in geriatric populations and are strongly associated with progressive or sudden hearing loss, with some studies suggesting a prevalence of one to four percent in those with hearing impairment. Patients usually do not demonstrate psychiatric comorbidity. They are typically treated with anticonvulsant and anticholinesterase medications. Our case adds to the limited body of literature regarding the efficacy of atypical antipsychotics for this purpose. **Case:** 1) A 70-year-old African-American female with past psychiatric history of major depressive disorder was treated as an outpatient by a Marshall University

geriatric psychiatrist. Previously, she had been treated with venlafaxine 225mg daily by mouth and mirtazapine 30mg by mouth every evening at bedtime, but discontinued these medications several months prior for unexplained reasons. Following discontinuation, she became increasingly suicidal, stopped attending hemodialysis appointments, and ultimately required both medical and psychiatric hospitalization. During admission, she developed musical hallucinations, which she described as religious hymns. She was started on aripiprazole for mood and psychotic symptoms and, following titration to 10mg, experienced abatement of auditory hallucinations roughly 14 days later. 2) An 86-year-old Caucasian female, who complained of hearing gospel music and increasing paranoia with eventual onset of visual hallucinations after a fall at age 80, was treated as an outpatient by a Marshall University resident psychiatrist. She was diagnosed with a psychotic disorder due to a traumatic brain injury, major depressive disorder that predated her injury, and major neurocognitive disorder, vascular type. A head CT at the time of injury showed a large left frontal convexity scalp hematoma and laceration with no evidence of skull fracture. It also showed chronic microangiopathic changes of the periventricular white matter and chronic lacunar ischemic change at the head of the caudate nucleus bilaterally. The patient was treated with Seroquel 200mg every evening at bedtime, low-dose lithium 150mg every evening at bedtime, and Xanax 0.5mg every evening at bedtime, with additional 0.25mg daily as needed. Her psychotic symptoms largely subsided, with the exception of occasional voices when the patient felt anxious or upset. The patient was kept on a low dose of lithium, as attempting to discontinue resulted in worsening irritability and agitation. **Conclusion:** The presented cases add to the paucity of literature regarding utilization of atypical antipsychotics for treatment of musical hallucinations and demonstrate efficacy to this effect. This study lends further validity to the use of psychopharmacological agents for novel purposes that have yet to be fully explored.

No. 55

Influence of Psychosocial and Cognitive Factors on Positive and Negative Affect in the General Population: A Longitudinal Data Analysis.

Poster Presenter: Aleksandr Kaipov, M.D., Ph.D.

SUMMARY:

Background: Affectivity is an important part of individuals' emotional behavior. Although the general fluctuation in affectivity seems to change with age, the influence of psychosocial and cognitive factors have been poorly explored using a longitudinal approach. **Objective:** The goal of this study was 1) to examine affectivity, its rate of change and gender specificity through generations and 2) to explore the association between health self-rating, number of chronic diseases (morbidity), memory condition, mental stress from one side, and affectivity from other. **Methods:** Data obtained from a total of 2,024 participants (aged 16–99; 57% female) of the Longitudinal Study of Generations was used to assess participants in three-year intervals from 1985 to 2000. The 10-item Affect Balance Scale was used to measure affectivity, and a single-item four-point scale was used to measure health self-rating. Morbidity was assessed by the number of reported chronic conditions. Memory was assessed by four-point scale. Mental stress was assessed by the single question of whether or not the participant experienced severe mental distress over the last few years. **Results:** Linear growth models showed that both positive and negative affect decrease with age, which is expressed by negative slopes of 0.118 ($p < 0.01$) and 0.098 ($p < 0.01$) for positive affect and negative affect, respectively. There was a nonsignificant difference between genders for positive affect, but negative affect decreased in higher degree in females than in males. Health self-rating increased along the life span and was expressed by positive slope of 0.033 ($p < 0.01$) with no gender differences. Morbidity increased, but memory did not change over generation in both genders. Mental stress did not change over generation, but was higher in females. Positive and negative affect were controlling for health self-rating, morbidity, memory, and mental stress. Lower health self-rating was associated with higher negative affect and deeper drop of positive affect later in life. Higher morbidity was associated with lower positive affect. Morbidity is not a predictive factor for negative affect. Memory worsening was associated with decrease of positive affect over age and is not a predictive factor for negative affect.

Mental stress was a predictor for lower positive and higher negative affect. **Conclusion:** Current analysis demonstrates an ambivalent relationship of affect and morbidity, memory and mental stress. Possible unfavorable influence of decrease of positive affect with life progression is balanced with concomitant decrease of negative affect. Negative affect seems to be more independent from somatic morbidity than positive and has higher gender specificity by being lower in females. These data suggest an increase need for behavioral medicine and psychiatric care as the population ages.

No. 56

Inpatient Psychiatry Therapeutic Group on Depression

Poster Presenter: Anthony Kelada

SUMMARY:

Many patients suffering from depression know little about the predisposing, perpetuating, precipitating, and protective factors in depressive illnesses, nor about options to collaborate effectively with their clinicians and to optimize their response to treatment. It has been demonstrated that educating patients about these concerns will increase compliance to treatment and appointments in the outpatient setting, improve one's ability to maintain wellness, and enhance satisfaction with treatment. The purpose of this study is to evaluate the effectiveness of a weekly therapeutic depression group in an acute inpatient psychiatric unit with regard to improving patient understanding of depression and ways of managing their depressive disorders, as well as improving satisfaction with treatment on the unit. As a quality improvement project, a weekly therapeutic depression group led by a psychiatric resident and psychiatric social worker was started to educate patients about the signs and symptoms of depressive illness as well as the causes, prognosis, and available treatment options and associated risks and benefits. During the group, patients are also informed about personal techniques and strategies for maintaining wellness and working with their clinicians to optimize and contribute to their own well-being, such as mindfulness, exercise, good nutrition, sleep hygiene, and seeking out supports and activities. In addition to providing a psychoeducational platform, the

group also offers patients the opportunity to discuss and share their personal experiences with depression with their peers and professional staff and to benefit from group support and learning. By participating in the psychoeducational therapeutic depression group, patients reported learning more about factors contributing to depression, the role of medications, and strategies for maintaining wellness to prevent or delay further severe episodes. Patients will complete a survey before and after the group session asking about their ability to identify symptoms, causes, course, and strategies for managing depression, as well as the helpfulness of the group. Demographic and diagnostic information was collected, and after the group, patients are asked open-ended questions regarding what they did and did not like about the group. Patients showed a statistically significant improvement from the group in learning about the causes, course of disease, treatment options, and personal strategies for wellness. They benefited from both the therapeutic and psychoeducational aspects of the group and appear ready to use some of the information and techniques learned to better understand and manage their depression.

No. 57

Informing a Public Health Approach to Emotional Well-Being: Science- and Community-Defined Evidence

Poster Presenter: Sophie Feller, M.D.

Co-Authors: Enrico Castillo, M.D., Jessica Kaltman, M.D., Jared Greenberg, Ashley Lewis Hunter, Gauri Kolhatkar, Roya Ijadi-Maghsoodi, Richard Van Horn, M.Div., Sheryl Kataoka, Kenneth Wells, M.D., M.P.H., Community Translational Science Team

SUMMARY:

Background: The World Health Organization (WHO) defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Emotional well-being (EWB) is a priority in the National Prevention Strategy. However, there are diverse approaches to EWB based on parallel scientific areas of inquiry. Our aim is to inform a public health approach to EWB in the United States, similar to efforts in 55 countries, by addressing four issues: 1) definitions of EWB; 2) impacts on health; 3) drivers; and 4) interventions.

Methods: A team of physician trainees, faculty and community mentors used mixed methods combining rapid literature reviews and qualitative methods. We reviewed scientific and grey literature (e.g., policy briefs) using online search tools (e.g., MEDLINE via PubMed) in English. Key terms included “EWB,” “resilience,” “thriving,” and “positive mental health (PMH);” Interventions were evaluated using the Centers for Disease Control (CDC) Continuum for Evidence of Effectiveness, using data on effects, design, replication, and implementation to categorize studies from well-supported to harmful. We used purposive and snowball sampling to conduct semi-structured interviews (N=11) and two focus groups with community members, program leaders, policymakers, and research experts, with key issues defined through thematic analysis.

Results: We identified six research traditions related to EWB, including health related quality of life and PMH and identified evidence-supported drivers at multiple social-ecological levels, combined with less-studied, but testable, factors to form a driver diagram for a public health model of EWB. We identified 28 interventions at community, system, family, or individual levels that fulfilled the CDC guidelines and met inclusion criteria for a public health campaign, many of which concerned children and families. Semi-structured interviews and focus groups identified ten key definitions of EWB, including health of mind and spirit, fulfillment of basic needs, feelings of balance, resilience, and social connectedness. Seven themes were identified, including EWB as a process, basic needs as prerequisite for EWB, healthy relationships, and EWB as part of mental health. Strategies to promote individual and community well-being included volunteerism, meditation, resources to satisfy basic needs, and schools as wellness centers. **Conclusion:** We recommend a framework for EWB inclusive of scientific traditions within a socioecological framework including community, family, and individual factors such as social connectedness and resilience to trauma. A number of evidence-based interventions exist, some of which are scalable or may be promoted in communities with suitable resources. Community perspectives reinforced the importance of EWB and its meaning to diverse populations, reinforcing integration of scientific and community perspectives on EWB.

No. 58

Implementing and Improving a Resident Wellness Curriculum

Poster Presenter: Elle S. Cleaves, M.D.

Co-Authors: M. Jeanette Quiroga, Jason E.

Schillerstrom

SUMMARY:

Objective: The purpose of this study was to describe the findings from our resident wellness needs assessment and to describe the initial resident response during the first six months of implementation. **Methods:** The needs assessment was conducted using the Maslach Burnout Inventory (MBI). To determine initial resident impressions of the wellness activities, we developed a survey assessing resident satisfaction with the wellness program, resident-identified sources of burnout and the value of the wellness activities so far implemented. **Results:** Forty-six residents were administered the MBI. Baseline resident scores indicated moderate to high levels of emotional exhaustion (mean=22.3, SD=10.8), low to moderate levels of depersonalization (mean=9.6, SD=6.4) and moderate to high levels of personal accomplishment (mean=38.6, SD=5.8). Six-month follow-up after implementation of the wellness curriculum revealed no significant changes other than a slight reduction in feelings of personal accomplishment (38.6 [N=46, SD=5.8] vs. 34.3 [N=24, SD=9.3], $t=2.4$, $p=0.02$). At follow-up, only 36% of residents reported satisfaction with the wellness program. **Discussion:** Although many residents are satisfied with this new wellness program, 43% remain ambivalent and 21% are dissatisfied, and we were unable to detect meaningful changes in MBI reporting. Resident feedback indicated that most are interested in using small groups to discuss work/life balance and program concerns. **Conclusion:** We will continue our efforts to develop a wellness program that addresses both resident concerns and stress management.

No. 59

Resilience, Psychological Distress and Academic Performance Among Freshmen in a Sub-Saharan African University

Poster Presenter: Increase I. Adeosun

SUMMARY:

Background: Resilience is characterized by the capacity to cope successfully with adversities and everyday challenges, including periods of stressful transitions. Adjusting to the demands of tertiary education, in addition to the developmental stress of adolescence, could exert a significant toll on the mental health and functioning of students. There is a dearth of research on resilience and mental health among university undergraduates in Africa. This study assessed the level of resilience among first-year undergraduate students attending a Nigerian university. The relationship between resilience, psychological distress and academic performance was also determined **Methods:** A cross-sectional study was conducted among first-year undergraduates (N=1,200) of a pioneer private university in Nigeria, Sub-Saharan Africa. Participants completed previously validated instruments, including the Waldnig and Young Resilience Scale, the How I Deal With Stress Inventory, the General Health Questionnaire (GHQ12), and a sociodemographic questionnaire by self-report. The data were analyzed with the SPSS-IBM (version 20) software. **Results:** The mean age of the participants was 17.7±3.7 years, and 64.4% were females. The mean and median Resilience Scale scores of the students were 135.9±18.1 and 137 respectively. About a quarter (24.9%) of the students had high levels of resilience, while 17.1% and 58.0% had low and medium levels of resilience, respectively. High levels of resilience were significantly associated with problem-solving coping styles ($p=0.001$), engagement in religious activities ($p=0.043$) and university matriculation examination scores ($p=0.028$). Students with high levels of resilience were less likely to have psychological distress ($p<0.001$). **Conclusion:** The findings of a positive correlation between resilience, academic performance, positive coping strategies, and emotional well-being highlight opportunities to enhance mental health outcomes and academic functioning among university students through resilience-based mental health promotion interventions. Further longitudinal studies are required to confirm and extend the current findings.

No. 60**Violence Victimization, Coping Strategies and****Mental Health Profile Among High School Students in Nigeria**

Poster Presenter: Increase I. Adeosun

SUMMARY:

Background: Globally, children and adolescents are victims of various forms of violence, including physical, psychological and sexual violence perpetrated by peers or adults within the community, school or domestic setting. Violence victimization is associated with dire mental health consequences, including suicidal behavior. Coping strategies are important in predicting psychological adjustment and may modulate outcomes in abused individuals. There is dearth of research on violence victimization and mental health problems among adolescents in Sub-Saharan Africa. This study determined the association between exposure to violence and mental health problems in a sample of adolescent school students in Lagos, Nigeria. The coping strategies used by victimized children were also assessed. **Methods:** We performed a cross-sectional study of 430 secondary school students in Lagos, Nigeria. Participants completed a sociodemographic questionnaire, the Global School-Based Health Survey Questionnaire (violence and mental health modules) and the Kid Cope Questionnaire. **Results:** The mean age of the participants was 14.9±1.7 years, and females constituted 55.8% of the sample. In the past year, a fifth of the respondents were victims of weapon-related violence (22.3%) and sexual abuse (22.6%). More than half (56.4%) reported frequent peer-related violence/bullying, while 60.7% were exposed to domestic violence. Violence victimization was associated with emotional problems ($p=0.010$), peer problems ($p=0.002$) and suicidal behavior ($p=0.018$). Avoidance or self-distraction coping strategies and prayers/religious practices were used by the majority of the victimized students. Use of avoidance coping was associated with worse mental health problems ($p=0.043$). **Conclusion:** Violence victimization is highly prevalent and associated with mental health problems among secondary school children in Nigeria. This highlights the need for urgent interventions to protect children from violence, as well as improved access of victimized children to mental health care and other support services.

No. 61**Drop Out From Treatment of Schizophrenia: Comparison of Patients Using Typical Versus Atypical Antipsychotics**

Poster Presenter: Increase I. Adeosun

SUMMARY:

Background: The chronic nature of schizophrenia usually demands uninterrupted treatment in order to maintain optimal clinical and functional outcomes. It has been speculated that patients receiving atypical antipsychotics may persist longer in treatment than those receiving typical antipsychotics because of the lower risk of inducing extrapyramidal symptoms. This study compared dropout from treatment among patients with schizophrenia receiving atypical versus typical antipsychotics after discharge from a psychiatric hospital in Lagos, southwest Nigeria. **Methods:** This study employed a retrospective cohort study design. Clinical records of 162 patients with schizophrenia admitted to a public psychiatric hospital in southwest Nigeria were extracted to determine their persistence with treatment over a period of one year after their discharge to the outpatient clinic. Treatment persistence (time to all cause treatment discontinuation) was determined using the Kaplan-Meier Survival Analysis. The log rank test compared persistence in treatment between patients receiving atypical versus typical antipsychotic medications. **Results:** Only 27.1% persisted in treatment for six months, while 19.1% persisted for one year. The mean time to all cause treatment discontinuation was 17.3 ± 1.5 weeks (95% CI [14.4, 20.3]). The mean duration of treatment persistence for patients receiving typical antipsychotics was 16.7 ± 2.7 weeks (95% CI [11.5, 22.0]) and 17.7 ± 1.8 weeks (95% CI [14.2, 21.2]) for patients receiving atypical antipsychotics. There was no significant difference in treatment persistence between the two groups ($p=0.762$). **Conclusion:** There is a high rate of dropout from treatment among patients with schizophrenia, regardless of the class of antipsychotic received. Considering the negative consequences of non-persistence in treatment, including increased risk of relapse, rehospitalization and suicide, there is a dire need for interventions to facilitate treatment persistence in schizophrenia.

No. 62**Effectiveness of Home Treatment in Comparison to Standard Inpatient Hospital Care in a Rural Bavarian Catchment Area**

Poster Presenter: Karel J. Frasch, M.D.

Co-Authors: Thomas Becker, Reinhold Kilian

SUMMARY:

Background: In Germany, psychiatric home treatment (HT) is still in its infancy, although it is internationally considered a safe and effective alternative to standard inpatient hospital care, which is mostly due to political and reimbursement reasons. Since consequently very few papers deal with the effectiveness of HT in Germany and not a single investigation with regard to its cost-effectiveness exists, we conducted a corresponding study. **Methods:** In a prospective observational trial, 60 HT patients were compared to 58 patients who were eligible for HT but received standard inpatient hospital care (treatment as usual [TAU]) with regard to clinical outcome and cost-effectiveness. Clinical outcome was observed by use of the well-known PANSS, HAMD and HoNOS scales. Treatment costs were assessed on the basis of reimbursement data while effectiveness was estimated by means of mixed effects regression models. Cost-effectiveness was calculated via a net monetary benefit regression model. To control selection bias in the various models, we executed a propensity score adjustment. **Results:** Although the treatment duration in the HT group was significantly longer than in the TAU group, treatment cost raw values did not differ significantly. HT patients performed clinically worse at baseline (PANSS, HAMD), while both groups improved significantly from admission to discharge with the exception of HoNOS in the TAU group. With regard to additive differences in clinical outcomes, we found no difference between the groups concerning the PANSS but significant interaction effects for HAMD and HoNOS scores, indicating higher effectiveness of HT compared to TAU. The cost regression model, including propensity scores, revealed that HT was on average €7,151 less expensive per treatment episode than TAU. The net monetary benefit regression model implicates that, even if the value of a one unit improvement of the HAMD is assumed to be 0, HT is associated with a

monetary benefit compared to TAU. The net monetary benefit model for the HoNOS total score is also positive, but does not become significant until a one unit improvement of the HoNOS is rated at €1,000. For the PANSS, no significant net benefit could be demonstrated. **Conclusion:** In the studied catchment area, HT turned out to be effective and cost-effective in comparison to TAU. Due to methodological shortcomings (lack of randomization, small sample size, historical control group, restriction of the study to a single treatment episode) on the one hand and great regional disparities concerning provision of community mental health care on the other, our results cannot be generalized to the whole of Germany.

No. 63

Doctors' Attitudes Toward Becoming Mentally Ill in Saudi Arabia: Disclosure and Treatment Preferences

Poster Presenter: Ahmad Alhadi, M.D.

Co-Authors: Areej A. Alaman, Areej E. Alwehaib, Albatoul A. Alsuhaibani, Hala I. Alaskar, Nuha H. Alhomayed, Tariq Hassan

SUMMARY:

Background: One in four people in the world will experience a mental illness at some point in their lives. Compared to the general population, doctors are more likely to be affected. This study evaluated doctors' attitudes to disclosure and treatment preferences if they were to develop mental illness. It also examines the impact of some factors that might influence the construction of that attitude. Preliminary data from this ongoing study are presented here. **Methods:** A quantitative observational cross-sectional study was carried out at the College of Medicine at King Saud University in Riyadh. This study included all physicians (consultants, registrars and residents) of various specialties who work in Saudi Arabia and are registered in Saudi Commission for health specialties. A self-administered online questionnaire sent via SMS to about 90,000 physicians has received 823 responses so far. As the survey is still ongoing, the data have not yet been analyzed in depth. The results are based on an interim evaluation using SPSS version 22. **Results:** Nearly 572 (71.5%) respondents agreed that the incidence of psychiatric illness among doctors is higher than the general

population. Twelve percent of doctors in Saudi Arabia stated that they have experienced a mental illness that affected their lives; the majority of them were residents. In the context of disclosing a mental illness, approximately 364 (45.5%) respondents would disclose their mental illness in the first instance to a psychiatrist. Among the factors that influence disclosure preference, career implication appeared to be the most influencing factor (36.5%). In the case of a developing mental illness requiring inpatient treatment, the majority would select an out of area mental health facility (457; 57.1%). Their choice is affected by the issue of confidentiality. **Conclusion:** In these preliminary data, physicians showed positive attitudes besides the awareness of the high incidence of mental illness among themselves. Residents were more likely to experience mental illness and seek help.

No. 64

A Study for Link of Institution in Disaster Management: Ansan District Study

Poster Presenter: Seoyoung Yoon

Co-Authors: Young-Hoon Ko, Ho-Kyoung Yoon, Cheol Min Shin, Sang won Jeon

SUMMARY:

Background: Cooperation among existing organizations is important when managing and psychologically supporting disaster situations. In this poster, we investigate the cooperation that was carried out during the Sewol ferry accident in Ansan. **Methods:** A total of 121 workers in 25 organizations were surveyed on which organizations they worked with, frequency of meetings among organizations, type of activities that were carried out, the amount of satisfaction on activities, and factors associated with dissatisfaction on activities, both in a non-disaster situation and in the Sewol ferry accident disaster situation. The differences between the two situations were analyzed using paired t-test for continuous variables and Chi-square test or McNemar test for categorical variables. **Results:** The total number of liaisons among institutions were decreased (from N=397 to N=251) and the mean scores on rating satisfaction were significantly lower in most organizations in the disaster situation. The rigid policy concerning the evaluation of performance of individual organizations was more

likely associated with dissatisfaction on the cooperation among institutions in the disaster situation compared to non-disaster situations ($p=0.045$). **Conclusion:** For the effective cooperation among institutions in disaster situations, understanding the capability of each organization in the community and developing a protocol for future co-work in advance is important. The unnecessary and formal regimes regarding performance evaluation of individual organizations should be sublated. **Keywords:** Disaster, Psychological Support, Link of Institution, Preparedness

No. 65

Integrating Mental Health Into Primary Health Care in a Post-Earthquake Scenario: An Initiative From the Nepalese Government

Poster Presenter: Shree Ram Ghimire, M.D.

SUMMARY:

Background: The Nepalese community has recently experienced and been affected by a devastating earthquake. The earthquake has not only resulted in mental health problems in the affected community, but also exacerbated the preexisting mental health problems of those with ongoing and chronic mental illness. The objective of this study was to integrate mental health and psychosocial support into the existing health system to address the psychosocial and mental health needs of affected communities. **Methods:** A total of 14 psychiatrists from different parts of the country received training of trainer and supervisor (TOTS) in the post-disaster period. These trained psychiatrists were mobilized to train the medical officers of earthquake-affected districts. 114 medical officers (M.B.B.S. doctors) from different health care facilities of 14 earthquake-affected districts were trained in the diagnosis and management of common mental disorders at the primary health care level. The training was based on the WHO's mental health gap action program humanitarian intervention guide (mhGAP-HIG) manual. **Results:** A total of 114 MBBS doctors of 14 earthquake-affected districts received training on common mental health and psychosocial problems in the context of Nepal. They were able to treat patients independently after training in existing health facilities. The Enhancing Assessment of Common Therapeutic Factors (ENACT) tool was used

in the fifth day of training to measure therapists' competence and showed satisfactory result.

Conclusion: Integrating mental health services into primary health care helps to provide effective mental health care in countries like Nepal where there are inadequate resource to properly address the burden of mental disorders.

No. 66

Treatment Strategies for Clozapine-Resistant Schizophrenia

Poster Presenter: Riyang Hong

Co-Author: Ganesh Kudva

SUMMARY:

Treatment-resistant schizophrenia is a substantial problem in individuals with schizophrenia. For these individuals, clozapine is often suggested as a primary mode of treatment. However, 40–70% of treatment-resistant patients show limited response to clozapine. For these individuals, further treatment alternatives are limited. In our review, we systematically appraise the various pharmacological and nonpharmacological modalities to address this population of patients. We suggest that the ideal approach would be a combination of clozapine and an antipsychotic, with amisulpride showing the best response and with promising data emerging regarding newer antipsychotics such as asenapine. There is also substantial promise with neurostimulatory modalities.

No. 67

Metformin Use in Patients on Atypical Antipsychotics and Mood Stabilizers. a Literature Review

Poster Presenter: Kok Wei Lee

Co-Author: Ganesh Kudva Kundadak

SUMMARY:

Weight gain and the development of metabolic syndrome is a prominent side effect of atypical antipsychotics and is a common cause of distress in patients and their subsequent noncompliance to medications. Compared to their older (termed "typical") counterparts, atypical antipsychotics, such as olanzapine and clozapine, cause significantly more weight gain—at an estimated rate of weight gain of 0.40kg/week—and have an adverse effect on

glucose and lipid profiles. The exact mechanism of weight gain is unclear for now, but seems to be related to an increase in dietary intake and a reduction in energy usage. Apart from resulting in distress and noncompliance, this worsening of cardiovascular health also leads to a substantial reduction in life expectancy by about 15 to 30 years among those with severe mental illness.

Cardiovascular causes, alone, account for two-thirds of all deaths in individuals with schizophrenia. A far less commonly studied but significant issue is the metabolic effects of mood stabilizers such as valproate, which have also been demonstrated to cause weight gain. Metformin has been suggested as a potential option to reduce some of the metabolic side effects of atypical antipsychotics. In this poster, we evaluate the available research on this topic and offer suggestions pertaining to the use of metformin in individuals on atypical antipsychotics. Metformin, a dimethylbiguanide, is a commonly used medication in type 2 (non-insulin dependent) diabetes mellitus. Unlike other oral hypoglycemic agents, it has a low risk for causing hypoglycemia, and its common side effects include abdominal cramping, nausea and diarrhea. The most feared complication of metformin is the development of lactic acidosis, which, although rare at a frequency of one to five per 100,000 patients, carries a 30 to 50% mortality rate. In this poster, we shall look at the use of metformin in the prevention of weight gain in those who have just been commenced on atypical antipsychotics, the use of metformin to foster weight loss in individuals who have been on atypical antipsychotics, and whether the effect of metformin is dose dependent. We will also look at the evidence regarding use of metformin in managing weight gain in patients on mood stabilizers.

No. 68
Difficulties in Managing Sexual Problems in a Patient With a History of Schizophrenia

Poster Presenter: Tanjir Rashid Soron, M.D., M.P.H.

SUMMARY:

Mr. X., a 31-year-old married male with a history of schizophrenia, presented to the psychiatric hospital after a suicide attempt by hanging to escape the shame and guilt associated with his indecent sexual act with a family member. He was perplexed and

suspicious and seemed to be responding to hallucinatory voices by shouting “go away devil” frequently. His problem started around the age of ten at the hostel when the seniors abused him sexually. Later, he started to exploit other new students and develop sexual intimacy with a senior male student. When this student left the hostel, he showed notable social isolation, suspiciousness and self-muttering. Gradually, his suspiciousness became so intense that he refused to take food and drink to avoid poisoning. He was hospitalized and treated with haloperidol 30mg. His symptoms subsided. However, he failed to continue his study. He went to brothels to prove the hallucinatory voices of wrong regarding his poor sexual performance. However, the young man experienced lack of rigidity and ejaculated within 20–30 seconds most of the time. The problem of erectile dysfunction and premature ejaculation continued throughout his conjugal life; he was suspicious about his wife’s infidelity. Moreover, he believed that his wife was mixing poison into his food to reduce his sexual power. He took various herbal products to gain his desired sexual functioning. However, his erectile dysfunction and premature ejaculation never improved. The patient was admitted several times during the course of illness whenever his condition deteriorated. He was treated with haloperidol up to 30mg most of the time. However, whenever the symptoms subsided, he stopped medication. The disease followed a waxing and waning course, and sometimes, the family had to keep him in chains when symptoms went out of control. At the time of admission after the suicide attempt, his Brief Psychiatric Rating Scale (BPRS) score was 71. The most notorious part of his sexual activity came to light when he described his sexual acts with his biological daughter in subsequent interviews. The family members noticed these behaviors and kept it concealed among themselves. They kept him away from the girl. Unfortunately, the family refused any psychiatric assessment of the girl. The patient was treated with risperidone, and the dose was titrated to 10mg per day by mouth. Within four weeks of this dose, he began to experience a decrease in his auditory hallucinations and paranoid delusions. The family members were informed about the risk of sexual abuse of the child. He continued medication, and he was symptom free in the follow-up after five

months. The case will motivate psychiatrists to ask about sexual history, including incestuous behavior, among the patients with schizophrenia in the South Asian countries where people are shy of talking about sex.

No. 69

Formal Thought Disorder in Schizophrenia and Bipolar Disorder: A Systematic Review and Meta-Analysis

Poster Presenter: Koksai Alptekin, M.D.

Co-Authors: Berna Yalincetin, Berna Binnur Kivircik, Emre Bora, Halis Ulas, Tolga Binbay

SUMMARY:

Historically, formal thought disorder has been considered one of the distinctive symptoms of schizophrenia. However, research in last few decades suggested that there is a considerable clinical and neurobiological overlap between schizophrenia and bipolar disorder (BP). We conducted a meta-analysis of studies comparing positive (PTD) and negative formal thought disorder (NTD) in schizophrenia and BP. We included 19 studies comparing 715 schizophrenia and 474 BP patients. In the acute inpatient samples, there was no significant difference in the severity of PTD ($d=-0.07$, 95% CI [-0.22, 0.09]) between schizophrenia and BP. In stable patients, schizophrenia was associated with increased PTD compared to BP ($d=1.02$, CI [0.35, 1.70]). NTD was significantly more severe ($d=0.80$, CI [0.52, 0.1.08]) in schizophrenia compared to BP. Our findings suggest that PTD is a shared feature of both schizophrenia and BP, but persistent PTD or NTD can distinguish subgroups of schizophrenia from BP and schizophrenia patients with better clinical outcomes.

No. 70

Cannabis-Induced Psychotic Experiences Mediate Cannabis Discontinuation: Cannabis Experiences in a Large Online Questionnaire

Poster Presenter: Musa Basseer Sami

Co-Author: Sagnik Bhattacharyya

SUMMARY:

Background: Cannabis is the most frequent illicit drug of abuse in the United Kingdom. Over the last 15 years, the potency of available cannabis has

increased. Cannabis use has been identified as a component cause of developing psychosis with a dose-dependent effect. It has, however, been argued that there has not been a corresponding increase in prevalence of psychotic disorders in the population, which would be expected in a causal relationship. Psychotic-like features induced by cannabis have been associated with risk of psychotic disorder. We thus wished to examine trends of cannabis use and psychotic experience on use of cannabis in the adult population. **Methods:** We administered the modified Cannabis Experiences Questionnaire (EUGEI version) to an Internet sample. The survey was open to all adults who had previously used or not used cannabis over the age of 18. The survey included six items of psychotic-like experiences—fearfulness, feeling of going crazy, nervy, suspiciousness, seeing visions, and hearing voices—and three items of pleasurable effects—being full of plans, feeling happy and being able to understand the world better. These were scored on a Likert scale when using cannabis. Demographic variables, other substance misuse history, contact with local mental health service, and wish to stop were also collected. Participants were recruited through advertising on the study recruitment pages of King’s College London, the London Cannabis Club, cannabis advocacy sites such as CLEARUK, and social media, including Facebook, Twitter and Tumblr. The survey ran over a nine-month period from December 2015 to September 2016. **Results:** In total, 1,425 responded to the survey, of which 1,155 (81%) completed the survey in full. 1,249 of 1,377 (91%) had previous or current experience of cannabis use. 931 of 1,236 (75%), with previous exposure to cannabis, continued to use the substance. 167 of 912 (18%) current users agreed that they would like to stop in the future. In all, users’ pleasurable experiences were more frequently reported than psychotic or adverse experiences. Continued cannabis users were significantly more likely to report pleasurable experiences ($p<0.001$) than discontinued users, whereas discontinued users reported greater frequency of experiencing psychotic events ($p<0.001$). Significance remained in groups reporting consumption on monthly, weekly and daily basis and in males and females. Those who continued to use cannabis but indicated they may stop in the future indicated significantly more

psychotic experiences ($p < 0.001$) and lower pleasurable experiences ($p = 0.021$) than those who did not consider stopping. **Discussion:** This study demonstrates that individuals who have psychotic-like experiences on use of cannabis are likely to discontinue or consider discontinuing the drug. We postulate this may lead to psychotic-prone cannabis users deselecting themselves from continued use and thus act as a protective factor from developing psychosis.

No. 71

Modification of the Association Between Paroxetine Serum Concentration and SERT Occupancy by ABCB1 Polymorphisms in Major Depressive Disorder

Poster Presenter: Mirjam Simoons

Co-Authors: Hans Mulder, Eric van Roon, Eric Ruhé

SUMMARY:

Background: Selective serotonin reuptake inhibitors (SSRIs) exert their antidepressant effect by occupying the serotonin transporter (SERT).

Unfortunately, they show substantial variability in effectiveness, with up to 50–60% of patients not achieving adequate results. Elucidating pharmacokinetic factors that explain this variability is important to increase treatment effectiveness.

Objective: Our primary aim was to evaluate whether four ABCB1 (P-glycoprotein) single nucleotide polymorphisms (SNPs; rs1045642 [3435C>T], rs1128503 [1236C>T], rs2032582 [2677G>T/A], and rs2235040 [2505G>A]) modified the relation between paroxetine serum concentration (PSC) and SERT occupancy in paroxetine-treated patients with major depressive disorder (MDD). As a secondary aim, we investigated the relation of these SNPs and the rs1045642C–rs2032582G–rs1128503T haplotype with clinical response. **Methods:** General inclusion criteria were age 18–70 years, MDD, and drug-free status and/or no more than one non-paroxetine antidepressant treatment for six weeks for the present MDD episode. All patients received paroxetine 20mg per day. We measured PSC after six weeks and quantified SERT occupancy with [123I]β-CIT SPECT imaging at baseline and after six weeks. We genotyped ABCB1 at rs1045642, rs1128503, rs2032582, and rs2235040. Primary outcome was SERT occupancy after six weeks. Secondary

outcomes were percentage decrease in Hamilton Depression Rating Scale (HAM-D-17) and response (50% decrease of HAM-D-17). For our primary aim, we modelled mean SERT occupancy after six weeks by genotype in an Emax nonlinear regression model with PSC and assessed whether the model improved by subgrouping (genetic subgroups) using the Akaike information criterion (AIC; lower is better). For our secondary aim, we performed multivariate linear regression analysis for the absolute, baseline-adjusted decrease in HAM-D-17 score and logistic regression analysis for response rates. **Results:** Preliminary results indicate that genotype/carrier groups did not differ regarding SERT occupancies, irrespective of PSC ($N = 36$; all $p = 0.091$). However, carriers of the variant T-allele for rs1045642 and carriers of the wildtype G-allele for rs2032582 showed different PSC-SERT occupancy curves, indicative of increased intracerebral availability of paroxetine in these carriers. We found no significant differences between any of the genotype or the rs1045642C–rs2032582G–rs1128503T haplotype groups for response ($N = 80$; all $p = 0.11$). **Conclusion:** We are the first to investigate whether ABCB1 polymorphisms influence SERT occupancy at clinical paroxetine serum concentrations. Two SNPs showed modified PSC-SERT occupancy curves, indicative of clinically relevant intracerebral pharmacokinetic effects. We could not detect significant differences between any of the genotype or rs1045642C–rs2032582G–rs1128503T haplotype groups and response rates. ABCB1 genotyping for these four SNPs is not yet suited for individualizing psychiatric pharmacotherapy.

No. 72

Medication Discrepancies in Outpatients With Mood and Anxiety Disorders: Risks and Clinical Relevance

Poster Presenter: Mirjam Simoons

Co-Authors: Hans Mulder, Eric Ruhé, Eric van Roon

SUMMARY:

Background: Psychiatric patients may be more at risk for side effects as well as drug interactions than the general population because of their frequent co-use of psychiatric and somatic medications. A complete and accurate medication overview, as obtained by medication reconciliation with the

patient, is essential to evaluate the clinical status and allow correct adjustment of any pharmacotherapeutic treatment. An incomplete or erroneous medication overview may lead to prescribing errors and iatrogenic harm. Little is known about medication reconciliation quality at psychiatric outpatient clinics. This study intended to identify discrepancies between the medication overviews of outpatient clinics for mood and anxiety disorders and the reconciled drug usage by their patients as well as investigate the clinical relevance of those discrepancies. **Methods:** We conducted a cross-sectional study at four mood and anxiety disorder outpatient departments in the north of The Netherlands. We assessed discrepancies between the electronic medication list from the outpatient department and the actual medication use by outpatients over 18 years on the day of inclusion. Actual medication usage was determined by medication reconciliation with the patient. Primary outcome was number of discrepancies on the inclusion date. Secondary outcome was clinical relevance of the discrepancies, as assessed by an expert panel (a psychiatrist and a hospital pharmacist/clinical pharmacologist) who independently reviewed each discrepancy for its potential to cause patient discomfort or clinical deterioration. **Results:** At least one discrepancy in the medication overview was found in 348 of 367 patients (94.8%). The medication overview contained, on average, 3.9 ± 2.8 discrepancies per patient. Most discrepancies were omitted drugs that were regularly used by the patient. 22.7% of all discrepancies, present in almost half of all patients (49.3%), had the potential to cause patient harm. **Conclusion:** To our knowledge, this is the first study on medication discrepancies and their clinical relevance in psychiatric outpatients. We found, on average, 3.9 discrepancies in the medication overviews of the psychiatry outpatient departments. Furthermore, a substantial part of these discrepancies were considered to be a clinically relevant risk to medication safety in outpatients with mood and anxiety disorders.

No. 73
Brain Reward Circuit Structural Differences in Patients With Bipolar I Disorder: A Voxel-Based Morphometry

Poster Presenter: Jun Yong Lee
Co-Author: Byung-Joo Ham, M.D., Ph.D.

SUMMARY:

Background: Bipolar I disorder (BPD I) is often misdiagnosed, leading to inadequate treatment and devastating consequences. The identification of objective biomarkers, such as structural brain abnormalities of BPD I, might improve diagnosis and help elucidate its pathophysiology. The aim of this study was to identify brain structural abnormalities among patients with BPD I. **Methods:** Twenty-one BPD I patients and 21 healthy controls participated in this study. Structural magnetic resonance imaging was performed, and a voxel-based morphometry was applied to assess structural changes between BPD-I groups and control group. Neuropsychological tests were conducted on all participants. **Results:** Patients with BPD I had decreased gray matter volume in the left supramarginal gyrus, left superior-medial frontal gyrus, left posterior-medial frontal gyrus, left inferior frontal gyrus, and left precentral gyrus, as compared to healthy controls. There were no brain regions that were decreased in the healthy control as compared to patients with BPD I. This study was a cross-sectional design. **Conclusion:** Our results suggest that BPD I arises from characteristic neural abnormalities. The findings suggest that abnormalities in the brain reward circuit, especially multiple frontal lobe areas, may play an important role in the pathophysiology of bipolar disorder.

No. 74
Differences Between Internet Pathologic Gambling and Internet Gaming Disorder: A Resting-State fMRI Study

Poster Presenter: Doug Hyun Han
Co-Authors: Joo Hyung Youh, Jae Young Ahn, Sujin Bae, Sun Mi Kim

SUMMARY:

Background: Given the similarities of clinical symptoms, as well as excessive use and the potential harm associated with it, Internet gaming disorder (IGD) is thought to be diagnostically similar to pathological gambling (PG). However, there are positive effects of IGD and poorly established diagnostic criteria for IGD. In this study, we suggest that the two disorders may not be similar in

neurobiology. We assessed functional connectivity (FC) within three brain networks, including the default mode network, the cognitive control network and reward circuitry. The goal of the study was to compare subjects with PG to those with IGD. **Methods:** Fifteen patients with IGD, 14 patients with Internet PG and 15 healthy comparison subjects were included in the study. Resting-state functional MRI (fMRI) data for all participants was acquired using a 3.0 Tesla MRI scanner. Seed-based analyses within the three brain networks were performed. The symptom severity of PG and OGD were assessed with the Yale-Brown Obsessive Compulsive Scale for Pathological Gambling (PG-YBOCS) and Young Internet Addiction Scale (YIAS), respectively. **Results:** There were no significant differences in age, sex, education years, IQ, alcohol consumption, and smoking between the three groups. Both IGD and PG groups demonstrated decreased FC within the default mode network (FWE p <0.001) and increased FC within the reward circuitry network (FWE p <0.001), relative to healthy comparison subjects. However, the IGD group demonstrated increased FC within the cognitive network, compared to both the PG (p <0.01) and healthy comparison groups (p <0.01). In contrast, the PG group demonstrated increased FC within the reward circuitry, compared to both IGD (p <0.01) and healthy comparison subjects (p <0.01). FC coefficient values from right PCC to right precuneus in the IGD group were negatively correlated with YIAS scores (r =-0.77, p <0.01), and FC coefficient values from right PCC to right precuneus in PG group were negatively correlated with PG-YBOCS scores (r =-0.69, p <0.01) **Conclusion:** To the best of our knowledge, this study is the first comparison of brain functional connectivity between young adults with Internet gambling and Internet gaming disorder. Based on our findings, we suggest that the neurobiology of Internet game (cognitive enhancement, less reward dependence) may be different from the neurobiology of gambling (no cognitive enhancement, more reward dependence). However, members of both groups demonstrate excessive play patterns (human behaviors), which are associated with deficits of impulse control.

No. 75
Geriatric Patients With Depressive Disorders and

the Risk of Suicidal Drug Overdose

Poster Presenter: Chun-Hung Chang, M.D.

SUMMARY:

Background: Depression has been linked to an increased risk of suicide, but the long-term risk of suicidal drug overdose (SDO) among elder patients with depressive disorders remain unclear. This population-based study aims to assess the incidence and risk of SDO among elder (age 60 to 99) patients with depressive disorders. **Methods:** From January 2002 to December 2013, 35,716 newly diagnosed elder patients (age of 60 to 99 years) with depressive disorders were enrolled from the National Health Insurance Research Database (NHIRD) in Taiwan. Patients were observed for a maximum of 12 years to determine the incidence of new-onset SDO. Kaplan Meier and Cox regression analyses were used to evaluate the risk of SDO in elder patients with depressive disorders. **Results:** Of the total 35,716 elder (age of 60 to 99 years) patients with newly diagnosed depressive disorders, 1,374 patients (3.85%) developed suicidal drug overdose (SDO) during a mean follow-up period of 6.16 (SD=3.46) years. The risk of SDO increased with the severity of depression (major depression, hazard ratio (HR)=2.7568, 95% CI [2.4627, 3.0861], p <0.001). The Cox proportional hazards analysis showed that women (HR=1.5253, 95% CI [1.3681, 1.7005], p <0.001), substance use disorders (HR=3.5198, 95% CI [2.8857, 4.2933], p <0.001), insomnia (HR=1.6835, 95% CI [1.5143, 1.8717], p <0.001), and psychotic disorders (HR=2.0332, 95% CI [1.5833, 2.6108], p <0.001) were independent risk factors for developing SDO. **Conclusion:** Our study indicated a subsequent risk of SDO in elder patients with depressive disorders, and the risk increased for those with major depression, female gender, substance use disorders, insomnia, and psychotic disorders. Suicide prevention for drug overdose and psychological evaluation are critical issues in these elder depressed patients.

No. 76
The Risk of Severe Hepatic Outcome in Schizophrenia Patients With Viral Hepatitis: A Nationwide Population-Based Cohort Study
Poster Presenter: Chun-Hung Chang, M.D.

SUMMARY:

Background: Schizophrenia with comorbid viral hepatitis, including hepatitis B virus (HBV) or hepatitis C virus (HCV), is a growing concern. However, the long-term outcome of schizophrenia patients with comorbid viral hepatitis remains unclear. **Methods:** Using a nationwide database—the Taiwan National Health Insurance Research Database—subjects who had first been diagnosed with schizophrenia between 2002 and 2013 were identified. The schizophrenia patients with viral hepatitis, including HBV or HCV, were designated as the viral hepatitis group. A 1:2 ratio was used to select age-, gender- and index year-matched control without viral hepatitis. Patients who had severe hepatic outcome before enrollment were excluded. The two cohorts were observed until December 31, 2013. The primary endpoint was occurrence of severe hepatic outcome, including liver failure, liver decompensation, liver transplantation, and liver cancer. **Results:** Among 16,365 newly diagnosed schizophrenia patients, we identified 614 patients with viral hepatitis and 1,228 matched patients without viral hepatitis between January 2002 and December 2013. Of the 1,842 patients, 41 (2.22%) suffered from severe hepatic outcome during a mean follow-up period of 3.71 ± 2.49 years, including 26 (4.23%) from the viral hepatitis cohort and 15 (1.22%) from the control group. In schizophrenia patients, the Cox proportional hazards analysis showed that the risk increase with viral hepatitis 3.58 (95% confidence interval [CI] 1.862, 6.868; $p < 0.001$). Moreover, schizophrenia patients with HCV had higher risk than those without viral hepatitis (hazard ratio=5.07; 95% CI [1.612, 5.956]; $p = 0.0001$). Furthermore, in the viral hepatitis group, patients exposed to paliperidone treatment had reduced risk (hazard ratio=0.21; 95% CI [0.073, 0.592]; $p = 0.089$), while those exposed to chlorpromazine use had increased risk (hazard ratio=1.246; 95% CI [0.499, 3.115]; $p = 0.616$). Liver decompensation is most common among schizophrenia patients who developed severe hepatic outcome (76.92%). **Conclusion:** Schizophrenia patients with comorbid viral hepatitis, especially HCV, have higher risk of severe hepatic outcome. Patients receiving paliperidone treatment had reduced risk, although not significant. Further evaluation of hepatic function and antipsychotic use

in schizophrenia patients with viral hepatitis is needed.

No. 77**Electroconvulsive Therapy for Treatment of Parkinsonism With On-Off Phenomenon With Dementia: A Case Series**

Poster Presenter: Tak Youn, M.D.

Co-Authors: In Won Chung, Yong Sik Kim, Junghyun Kim, Hyong Sook Jun, Youngwook Jeong

SUMMARY:

During treatment of Parkinson's disease with L-dopa, an "on-off" phenomenon develops in many patients. Decreased receptor sensitivity in postsynaptic striatal dopamine (DA) receptors has been shown to developed an "on-off" phenomenon in Parkinsonian patients during L-dopa long-term treatment. The "on-off" phenomenon in Parkinson's disease (PD) refers to a switch between mobility and immobility in L-dopa treatment or a development of various psychotic symptoms by increasing of dopamine level. Moreover, many PD patients have cognitive dysfunction and can be diagnosed with dementia. Electroconvulsive therapy (ECT) has been shown to increase sensitivity in the DA receptors in PD in contrast to L-dopa treatment, but aggravated cognitive function during ECT procedures, especially in geriatric patients. Therefore, the anti-Parkinsonian effect of ECT is good to PD, but ECT is not an advantage to dementia symptoms for Parkinson's patients with dementia. In this cases series, the anti-Parkinsonian effect of ECT was investigated in three Parkinsonian patients with the "on-off" phenomenon and dementia. The first patient was diagnosed with Alzheimer-type dementia and PD and showed severe intractable dyskinetic movement. The second patient was also diagnosed with Alzheimer-type dementia and PD with severe psychotic symptoms such as paranoid delusion, auditory and visual hallucination, etc. The last patient was also diagnosed with complex of Alzheimer-type and vascular dementia, old cerebral infarction, and PD and showed severe psychotic symptoms. Before ECT, medications for PD and dementia were optimally adjusted. After acute phase of ECT, all subjects received maintenance ECT of right unilateral (RUL) or bifrontal (BF) electrodes with ultrabrief stimuli (0.3—0.5ms) every one to four

weeks with medications for Parkinson's disease and dementia. Continuous measures of mood, cognition and motor function were also performed. During acute ECT sessions, two or three times of ECT per week were applied for all patients. The "on-off" phenomenon improved within one to three weeks. One subject showed aggravation of cognitive function during acute-phase ECT; therefore, electrode placement for ECT was changed from bifrontotemporal electrodes to RUL. Other patients have been treated with RUL or bifrontal electrodes with ultrabrief stimuli without aggravation of cognitive function. All subjects have been treated with maintenance ECT and medication for PD and dementia, showing significant improvement of the "on-off" phenomenon without aggravation of cognitive functioning. Maintenance ECT is applied to all patients. Many cases about Parkinson's disease treated with ECT have been reported, but ECT treatment for patients who have severe Parkinson's disease and dementia symptoms together is rarely reported.

No. 78

WITHDRAWN

No. 79

Aripiprazole Long-Acting Injectable Combined With Clozapine

Poster Presenter: Josep Tarrago

SUMMARY:

Background: patients with schizophrenia treated with clozapine often experience a lack of adherence due to sedation and gain of weight. These patients could benefit from a long-acting injectable, like aripiprazole, in a monthly dose. These could help them decrease the dosage of clozapine. **Methods:** In this poster, we evaluate the decrease of clozapine dosage and the improvement in adherence when combination of aripiprazole with clozapine is used. **Results:** All of the eight patients included in our study show an excellent tolerability to this combination. We obtained lower clozapine doses, inferior to 200mg per day, which were associated with less adverse effects (mainly sedation and gain weight). Moreover, after a six-month follow-up period, we found complete adherence to treatment among four patients. **Conclusion:** Although it seems

that a good previous response to clozapine monotherapy is needed, the results obtained in this study suggest that this combination might be useful to improve treatment adherence by reducing its adverse effects. Larger-sampled and controlled studies are required in order to test and confirm this observation.

No. 80

Comparison of Bipolar Detection Instruments Among Patients With Mood Disorders and Cluster B Personality Disorders

Poster Presenter: Sergio D. Apfelbaum, M.D.

SUMMARY:

Background: Scientific literature has well established that bipolar disorder (BD) is frequently underdiagnosed. Studies have reported a ten-year breach between disorder onset and its proper diagnosis in a large proportion of BD patients. However, many authors highlight the bipolar spectrum disorders overdiagnosis in patients with personality disorders, particularly cluster B. This study compares the efficiency of several BD screening and assessment instruments to detect BD in a sample of clinical outpatients. **Methods:** The study included patients age 18 to 65 who gave written informed consent. They had to meet *DSM-IV-TR* diagnostic criteria for a mood disorder and/or cluster B personality Disorder. A sample of outpatients (N=81) were assessed and arranged in four diagnostic groups: major depression (MD N=24), bipolar disorder (BD N=18), cluster B personality disorders (PD-B N=19), and comorbidity of BD and PD-B (N=20). Patients who entered the study completed the Mood Disorder Questionnaire (MDQ) and Bipolar Spectrum Diagnostic Scale (BSDS) at the time of inclusion, and patients' therapists completed the Bipolar Index (BI) and Gahemi's Bipolar Spectrum Criteria. The *DSM-IV-TR* diagnoses were evaluated with two semi-structured interviews (MINI and SCID-II) for axis I and axis II disorders, respectively, rated by a psychiatrist or psychologist blind to the results of the screening questionnaires. The instruments were compared by their sensitivity, specificity, positive and negative predictive values, and positive and negative likelihood ratio. Results show good sensitivity and specificity values for the MDQ and BSDS (specificity 0.79 vs. 0.77; sensitivity 0.74 vs.

0.71, respectively) and similar positive predictive values (PPV=73%) for both instruments to identify BD. The BI, with an ad hoc 50 cutoff point, revealed excellent sensitivity and specificity values (0.84 and 0.90), with PPV of 87%. Finally, the simultaneous implementation of both the screening instruments (MDQ or BSDS) and diagnostic criteria of bipolar spectrum provided a notorious improvement in sensitivity detection with some decline in specificity values and a slight decline in PPV, but also expanded the bipolar spectrum detection regardless of identifying manic symptoms. **Conclusion:** The concurrent utilization of MDQ and the Gahemi's Bipolar Spectrum Criteria notably increased the sensitivity for detection of BD while still maintaining reliability. The development of a questionnaire that includes screening for manic symptoms (MDQ) plus symptomatic and evolutionary characteristic of the bipolar spectrum could significantly increase the sensitivity of screening for BD. A discussion explores the implications of the previous findings.

No. 81

Discrimination and Social Isolation in Refugees With Mental Illness: A Case Report

Poster Presenter: Christopher Morrow

Co-Authors: Michael S. Peroski, D.O., Marissa Flaherty, M.D., Nithin Krishna

SUMMARY:

We report the case of a young male refugee from Afghanistan admitted to inpatient psychiatry after a suicide attempt precipitated by discrimination and social isolation that he experienced after immigrating to the United States. Mr. H. is a 31-year-old Afghani male who immigrated to the U.S. as a refugee after being granted political asylum. Leading up to his immigration, he worked with the U.S. Special Forces as a translator. He decided to seek asylum in the U.S. in order to protect his own safety as well as that of his family after his involvement with the U.S. military became known to local Afghans who opposed U.S. involvement in the country. Once in the U.S., Mr. H. was placed at an unskilled evening shift job at an airport. Working in this setting was challenging, as he reported being culturally profiled by his coworkers and being accused of appearing suspicious. Over the course of a year, he became increasingly isolated and

depressed, with no social support or sense of community. This culminated in him sending checks amounting to his entire life savings to his family and attempting to commit suicide by stabbing himself repeatedly in the neck, chest and abdomen. He was found by a roommate after his suicide attempt and underwent emergency surgery at a level one trauma center. He was medically stabilized, seen by consultation-liaison psychiatry and transferred to the inpatient psychiatry service. He initially displayed significant depressive symptoms, including anhedonia, guilt, suicidal ideation, insomnia, and poor appetite. He was started on escitalopram 10mg with daily supportive psychotherapy, but showed little improvement on this regimen. Mirtazapine 15mg was added to target symptoms of insomnia and lack of appetite, to which he responded well. He was ultimately stabilized and discharged to the care of family members with the hope of reestablishing a more suitable career and living situation. This case presents the challenge many refugees face in reintegrating into a foreign society after coming to the U.S. Studies have shown that the experience of war trauma coupled with discrimination in a new country increase the risk of developing depressive symptoms in refugee populations. Equally worrisome are recent indicators that experiences of discrimination and marginalization in refugee populations may support the development of radicalism—an issue that is seriously challenging security around the world. With tens of thousands of refugees entering the United States annually, a standardized and validated method for screening patients for mental illness is essential in order to direct at-risk refugees into psychiatric treatment to help mitigate further psychiatric decompensation. Meeting this need is critical to the welfare of those individuals seeking refuge in this country.

No. 82

Attempted Suicide as the Most Significant Risk Factor for Completed Suicide: What Is the Evidence?

Poster Presenter: Simran Singh Chawa

Co-Authors: Deepak Prabhakar, M.D., M.P.H., Brian K. Ahmedani, Ph.D., M.S.W.

SUMMARY:

Background: According to the Centers for Disease

Control and Prevention (CDC), in the U.S., from 1999 to 2014, the age-adjusted suicide rate increased from 10.5 to 13.0 per 100,000 population; furthermore, the rise has been greater since 2006. As health providers and the broader public health community make concerted efforts to mitigate suicide-related mortality, it is pertinent to understand the underlying mechanisms leading to a completed suicide in order to better inform future preventive measures. Previous suicide attempts are understood to be one of the significant risk factors for completed suicide. However, most of the clinical data supporting the risk are confounded by the presence of other factors such as mental illness, while public health data are generally limited to epidemiologic studies from Europe. The objective of our study is to conduct a literature review investigating the risk of completed suicide attributable to suicide attempts independent of other confounding factors in the U.S. general population. **Methods:** We conducted a literature review using keywords “suicide attempts,” “completed suicide,” “suicide death,” “attributable risk,” and “risk assessment.” Additional search terms such as “psychological autopsy” and “population attributable risk” were added to the inquiry. Results were filtered primarily to studies that were published in English. Abstracts were reviewed independently for inclusion in the literature review. **Results:** We did not find previous studies reporting population-attributable risk of completed suicide for suicide attempts. The psychological autopsy literature revealed a risk range of odds ratio (OR) from 2.27 to 102.50, derived from a single meta-analysis conducted in 2007. This analysis included data from a single U.S. study. Generally, the risk of completed suicide among those with history of suicide attempt ranged from two percent to 17%, with the highest risk in the first year after the attempt; however, the risk of completed suicide is maintained through the adult lifespan. Additionally, the risk of completed suicide is particularly high in individuals with previous suicide attempt who also have history of bipolar disorder, unipolar depression and schizophrenia. **Conclusion:** There is a paucity of population-level U.S. epidemiologic data identifying the specific risk of completed suicide in those with a history of suicide attempt. Existing literature is confounded by the overall risk contribution from

other mediating factors such as comorbid psychiatric disorders, age and gender. Further studies are needed to examine this question; given the low incidence of completed suicides, a case-control study utilizing treatment access data may be a reasonable approach.

No. 83

The Rate of Death by Suicide in Medical Students: A Systematic Literature Review

Poster Presenter: Rebecca M. Zivanovic, M.D.

Co-Author: Christina Roston

SUMMARY:

Suicide is the ninth and tenth leading cause of death in Canada and the United States, respectively. Suicide is an even more common cause of death in young adults, the age-matched group for the majority of medical students. Suicide rates in physicians are known to be higher than rates in the general population, and it is well documented that medical students experience high rates of psychological distress, depression and suicidal ideation. A previous review has been conducted summarizing the prevalence of suicidal ideation and self-reported suicide attempts in medical students; however, no systematic review has been conducted analyzing the rate of completed suicide in this unique population. Therefore, our objective was to conduct a systematic review of the literature for reported rates of completed suicide in medical students. We conducted a literature search using Medline, Embase, PsycINFO, Psychiatry Online, and the Cochrane Database of Systematic Reviews from database inclusion dates (1946–1981) to August 31, 2016. Grey literature and reference lists of selected articles were also reviewed for relevant studies. Any study reporting prevalence, incidence or rate of medical student suicide as an outcome was included. We ultimately included six studies from three countries, which all reported a rate of suicide in medical student populations at various time periods between 1947 and 2014. Rates of suicide among medical students ranged between 2.3 and 39 per 100,000. Three studies reported male and female suicides separately with ranges of 2.96 to 16 per 100,000 and 1.63 to 18.9 per 100,000, respectively. Three studies included information about known psychiatric comorbidities in those who died. Four

studies compared their suicide rates to a current population-based statistic. Two of these found the rate to be lower than expected, and one each found the rate to be both comparable and higher than expected, based on population data. The overall trend in suicide rates suggests that rates of suicide in medical students may be decreasing over time. All the included studies had limitations including, but not limited to, survey response rates, which in some cases was suspected to be due to stigma. Our results provide a summary of the limited research done to date documenting rates of death by suicide in medical students. Although trends suggest that rates of suicide may be decreasing, any number of suicides is cause for alarm. Further research is needed into current rates of medical student suicide outside the United States and the predisposing factors that may be contributing to cases where deaths do occur. In our current technological age, it is surprising that no systemic, nationwide tracking of medical student deaths deemed to be suspicious or confirmed occurrences of suicide exists. The implementation of such a system would facilitate improved preventative programming and more targeted interventions.

No. 84

Relative Role of Entrapment vs. Other Clinical Factors With Regard to Suicidal Ideation in High-Risk Psychiatric Inpatients: A Mediation Analysis

Poster Presenter: Shuang Li, M.D., Ph.D.

Co-Authors: Zimri S. Yaseen, M.D., Jessica Briggs, B.A., Anna Frechette, Molly Duffy, Lisa J. Cohen, Ph.D., Igor Galynker, M.D., Ph.D.

SUMMARY:

Background: Prior research has validated the construct of a suicidal crisis syndrome, a specific psychological state that can precipitate suicidal behavior. The feeling of entrapment is a central concept of the suicidal crisis syndrome, as well as of several other recent models of suicide. However, its exact relationship with suicidality is not fully understood. In an effort to clarify the exact role of entrapment in the suicidal process, we have examined if entrapment mediates the relationship between other components of the suicidal crisis syndrome and suicidal ideation (SI). **Methods:** The suicide crisis inventory and a psychological test

battery were administered to 201 high-risk adult psychiatric inpatients hospitalized following SI or suicide attempt. The possible mediation effects of entrapment on the relationship of the other clinical factors assessed by the suicide crisis inventory—ruminative flooding, panic-dissociation, fear of dying, and emotional pain—with SI at admission were assessed using mediation analyses. **Results:** Entrapment significantly and fully mediated the relationship of ruminative flooding, panic-dissociation and fear of dying with SI; with no direct relationships existed between these variables and SI reaching statistical significance. Further, no reverse mediation relationships between these variables and SI were found. In contrast, while entrapment also mediated the association between emotional pain and SI, the direct relationship between them was also significant. Moreover, in reverse mediational analysis, emotional pain was a partial mediator of the relationship between entrapment and SI. **Conclusion:** Entrapment and emotional pain may have a more direct association with SI than the other components of the suicide crisis syndrome and represent important symptomatic targets for intervention in acutely suicidal individuals. Further research is needed to determine the relationship of these constructs to suicidal behavior.

No. 85

Psychiatric Consultation Referrals and Suicide Attempts at a Tertiary Care Teaching Hospital on the U.S./Mexico Border

Poster Presenter: Cynthia Garza

Co-Authors: Henry Weisman, Silvina Tonarelli, Roberto Flores, Mona Mojtahedzadeh

SUMMARY:

Studies examining suicidal inpatient and emergency department psychiatric referral patterns in the population along the U.S./Mexico border are scarce. The aim of this study is to investigate the annual rate of psychiatric consultations for suicide attempt in the inpatient and emergency department at University Medical Center, a tertiary care teaching hospital on U.S./Mexico border, and describe the demographic and clinical characteristics of this type of population. The data presented comprise one month of data collection, November 2015, examining all psychiatric consultations from both

inpatient and emergency departments. Of all patients, 42 were male (57%) and 31 female (42%), with a mean age of 52.5 (range 19–86). Twenty-seven percent of the sample were married (N=20); 41% (N=30) were single, and marital status was undetermined in 32% (N=23). One-third of the referrals were for suicide ideation with/without a plan (N=19, 35%), with the next largest percentage being referrals for depression (N=15, 20%). Consultation-liaison recommendations in 58% of the cases (N=43) was for psychiatric medications, with inpatient psychiatric hospitalization recommended for 26 patients (35%). Further analysis of the entire sample revealed the following: 22 out of 74 patients were referred for psychiatric consultation because of suicide attempt. Suicide attempters were mostly male (14 out of 22 patients). The rate of suicide attempters among Hispanic people was 59% (N=13), compared to 41% (N=9) in non-Hispanic. Suicide attempts were more frequent among patients with a history of psychiatric disorders at 73% (N=16). Analysis found that being married was protective and unemployment was a risk factor. Whether a subject lived with family, lived alone or was homeless was not a factor, nor was educational level. This study is the first investigation of its type at a tertiary care teaching hospital on the U.S./Mexico border. A better understanding of patients referring to the psychiatric consultation service due to attempted suicide may allow the identification of at-risk subjects and the implementation of targeted treatment approaches.

No. 86

Writing on One's Own Demise: Suicide Notes in the Age of the Internet

Poster Presenter: Jessica N. Cvetko, M.D.

SUMMARY:

One to two people out of six who attempt suicide will leave a note behind. In comparison to notes written on paper, Internet suicide notes may differ in a variety of characteristics, as they illustrate different degrees of real-time experiences. Given continuous Internet traffic, awareness, likelihood of rapid detection and discovery by potential readers is more likely online. Therefore, Internet traffic may change the communication dynamic of suicidal wish and intent. The question is then posed: are Internet

suicide note writers a different population of suicidal individuals compared to those who leave behind paper suicide notes? While some strides on suicide prevention on the Internet are emerging, we propose that four areas of exploration on cybersuicide could benefit from the development of safeguards and intervention: exploration of suicide sites, Facebook traffic on suicide, suicide blogs and bloggers, and personal communication via email and social media. While many unanswered questions remain regarding the feasibility of a unified approach, in the long run, the development of intervention strategies should become a priority in research. Such strategies would include the development of extended online professional networks. While these networks would create a major privacy challenge for the online community, they may also become a model for addressing health care issues online. In order to accomplish such an online community, allocation of significant resources, the development of specialized technology and the worldwide cooperation of mental health professionals would be necessary.

No. 87

Cortisol Response to the Trier Social Stress Test and Variability in Suicidal Ideation

Poster Presenter: Christina Michel

Lead Author: Sebastian Cisneros, M.D.

Co-Authors: Hanga Galfalvy, Barbara Stanley

SUMMARY:

Background: Suicidal behavior is a major public health problem. Around 804,000 individuals die each year worldwide. Hypothalamus pituitary adrenal (HPA) axis dysfunction results in maladaptive stress responses associated with the pathophysiology of suicidal behavior. Suicidal ideation can fluctuate rapidly over time; many individuals contemplate making a suicide attempt for a short time (minutes to a few hours) before actually making an attempt. This study evaluated the stress response to a psychosocial paradigm and the variability of suicidal ideation during a period of time. **Methods:** Participants who met *DSM-IV* criteria for borderline personality disorder were included. Baseline assessments included the Scale for Suicidal Ideation, Beck Hopelessness Scale, Hamilton Depression Rating Scale, Brown-Goodwin Lifetime Aggression

History, Buss-Durkee Hostility Scale, and Barratt Impulsivity Scale. Participants performed the Trier Social Stress Test (TSST), and five consecutive salivary cortisol samples were obtained. Cortisol level distribution was normalized using natural logarithmic transformation, and the primary measure of cortisol response was the area under the cortisol curve measured from the participant's baseline level. Fluctuation in suicidal ideation was explored using the Ecological Momentary Assessment (EMA), which consisted of carrying a personal digital assistant for one week and answering a series of questions about affects and suicidal ideation and behavior. Using median split of the within-subject standard deviations of the ideation score, participants were divided into low-variability and high-variability subjects. **Results:** This analysis included 43 subjects, 21 with low-variability ideation (mean age 30.19, 90% female) and 22 with high-variability ideation (mean age 32.63, 82% female). Subjects with high-variability ideation had higher cortisol response on the TSST than the low-variability group ($t=2.28$, $df=41$, $p=0.027$, $r=0.34$, high-variability group mean=5.01, low-variability group mean=-2.87, two-sample t -test=-1.96, $df=41$, $p=0.056$). The high-variability group had higher hopelessness and hostility scores on a trend level than the low-variability group ($p=0.058$; $p=0.087$). High- and low-variability ideators did not differ on point-evaluated suicidal ideation ($p=0.252$), aggression ($p=0.328$), impulsivity ($p=0.452$), and depression severity ($p=0.749$). **Conclusion:** Suicidal ideation and stress response are important factors to understand suicidal behavior. The results suggest that there may be at least two subtypes of suicidal individuals with different patterns of suicidal ideation with different neurobiological substrates: stress responsive and non-stress responsive. Individuals with an ideation pattern that fluctuates over short periods of time exhibit higher stress response. In contrast, individuals with a steady, unfluctuating pattern with elevated ideation do not have a heightened stress response.

No. 88

Literary Leitmotifs, or Love Letters to a Suicide Ensued

Poster Presenter: Kristen Anne Schmidt, M.D.

Co-Author: Kathryn Schak

SUMMARY:

Virginia Woolf, Ernest Hemingway and Sylvia Plath, while singularly gifted, share a significant commonality: a talent for writing, pervasive mental illness and eventual completion of suicide. Circumspect examination of their work suggests that art and psychiatric compartment colluded to communicate their employed method of suicide. Evocative imagery of sea and stone set amidst spoiled domesticity in *To the Lighthouse* intimates Virginia Woolf's drowning by overburdened pockets. Ernest Hemingway provides a prologue to his farewell by arms with resounding imagery of guns and game in "The Short Happy Life of Francis Macomber." And, in "Lady Lazarus," Sylvia Plath brazenly addresses her ability to slip suicide's grasp while challenging its eventual hold in language of fire and ash with her subsequent self-extinguishing by placing her head in an oven. Recurring themes in literature may be signs of an artist's preoccupation and eventual enamoration with a specific mode of self-destruction, resulting in a suicidal denouement. Psychiatrists should listen for repetitive motifs in patient narratives and explore the significance of echoed words. Exposure therapy may facilitate insight and allow rational detachment from sustained symbols to preserve a patient's self-mastery prior to self-destruction.

No. 89

High-Functioning Autism and Violence Risk

Poster Presenter: Lindsay Howard, D.O.

Co-Authors: Jeffrey Wagner, Stacy Gioia, M.S., Joseph Chien, D.O.

SUMMARY:

In this poster, we present a case where an adult with a preliminary diagnosis of autism spectrum disorder (ASD) presented to an inpatient psychiatric unit with suicidal and homicidal ideation (SI and HI). Mr. J. is a 52-year-old White male veteran with psychiatric history of major depressive disorder, adjustment disorder with mood disturbance and possible PTSD who presented to the ED requesting admission to the psychiatric ward due to suicidal ideation. He had also presented a few months earlier with HI in the setting of ongoing dispute with a family member. One month prior, his home situation had become

increasingly stressful, causing him to be depressed. He also endorsed increased alcohol intake of three to four drinks per night on average, with as many as nine at a given time. He was noted to only make occasional eye contact during interviews and was socially awkward with other patients in the milieu. He displayed repetitive patterns of behavior, completing daily puzzles by himself. He was noted to exhibit concrete thinking, often misinterpreting other's actions and then becoming upset by perceived slights. He displayed poor judgment and struggled to come up with adequate plans to address his home stressors, instead endorsing feeling trapped and having no options. His poor distress tolerance and inflexible and concrete thinking were likely contributing to his feeling that the only way out of the situation was to kill himself or "eliminate the problem." These observations were recognized as being consistent with characteristics of ASD, and attempt was made to collect further developmental history as well as administer the Autism Spectrum Quotient (ASQ). His score on the ASQ placed him right at the cutoff for probable autism. Prior to discharge, Mr. J. completed the standard suicidal risk assessment and safety plan. This case raises the interesting question of whether the presence of ASD, which often goes undiagnosed in adults, should alter the psychiatric approach to risk assessment and treatment of SI and HI. Previous studies have sought to characterize the relationship between ASD and violence. In 2016, of the eighteen prevalence studies included in a review by David Im, M.D., only one concluded there was no relationship between ASD and violence. Studies suggest that three factors are more likely associated with violence in ASD: comorbid psychopathology, deficits in social cognition and emotion regulation problems. The poster discusses risk factors for violence in people with ASD and the practical applications of how clinicians may use knowledge of this risk to perform more optimal safety assessments of their patients. We suggest that treatment approaches that focus on challenges specific to people with ASD—for example, social skills therapy—may be key in helping mitigate violence risk in this population.

No. 90
Risk Factor Analysis for Suicide in the Homeless

Population Necessitates Modified Screening Practices

Poster Presenter: Vedrana Hodzic, M.D.
Co-Authors: Rachel Steere, D.O., Andrea Naaum, M.D.

SUMMARY:

It has been demonstrated that homelessness positively correlates with increased emergency room visits for both medical and psychiatric complaints. In recent years, several programs across the country have been created to provide permanent housing services to homeless individuals with the goal of reducing ER visits and admissions. A review of the recent literature shows support for the implementation of these housing programs but brings up the question whether secondary gain is driving the initial presenting complaints. There is also evidence that suicide completion rates are higher for homeless individuals compared to domiciled ones. Our work explores the factors that increase suicide risk in the homeless population and the biases that may impact reporting of symptoms as well as evaluation and diagnosis. The characteristics that distinguish homeless suicide completers from the general domiciled population are explored and suggest that this population is younger and has a larger female composition. This correlation between homelessness and suicide completion, regardless of other symptoms or diagnoses, highlights homelessness as an independent risk factor for suicide and necessitates implementation of changes in suicide screening practices. It also encourages further discussion and research into risk reduction for these individuals.

No. 91
Permissiveness Toward Suicide According to Religion in a South Korean Population

Poster Presenter: Doeun Lee
Co-Authors: Soyoung Lee, M.D., Kayeong An, Jeewon Lee, Jin-wan Park, Hyeon-ah Lee, Shin-gyeom Kim, Se-Hoon Shim, M.D., Sang-woo Han, Han-Yong Jung, Hwa-Young Lee, Dr.P.H.

SUMMARY:

Background: South Korea has an exceptionally high suicide rate, as its recent three-year average suicide rate is 31.97 per 100,000 persons. Suicide occurs in a

cultural context, but that context, especially in terms of religion, has not been explored fully in the Korean population. The purpose of this study was to examine differences in attitudes toward suicide according to types of religion in a South Korean population. **Methods:** A total of 1,000 adults living in Bucheon, a city in South Korea, completed a self-questionnaire including sociodemographic variables, Attitudes Toward Suicide-20 (ATTS-20), Center for Epidemiologic Studies–Depression Scales (CES-D), and questions regarding the existence of suicidal ideation and prior suicide attempt. The ATTS-20 questionnaire is composed of four domains: acceptability and unpredictability, preventability, incomprehensibility and condemnation, and relation caused. **Results:** 404 (40.4%) participants had no religion, 317 (31.7%) were Protestants, 152 (15.2%) were Buddhists, and 113 (11.3%) were Catholics. Two-way ANOVA showed that differences in religion and age significantly affected the acceptability and unpredictability domain of the ATTS-20. In the adult group (18~59 years old), the scores of the acceptability and unpredictability domain of the ATTS-20 was 24.13 in Buddhists, 21.82 in non-religious, 20.82 in Protestants, and 19.53 in Catholics, showing significant difference. The scores of the remaining three domains of the ATTS-20, sociodemographic variables, clinical variables including CES-D score, existence of suicidal ideation, and prior suicide attempt showed no significant difference between the four groups of religion. **Discussion:** This study shows that Buddhists are most permissive toward suicide, compared to other religion groups. It has been reported that Buddhist countries have a distinctly higher total suicide rate compared to Muslim, Hindu and Christian countries. Possible explanation could be that Buddhism does not see death as the end of life, but merely as a transition, and identifies altruism as a motivation for self-harm or suicide and accepts certain forms of self-immolation. **Conclusion:** Understanding the Buddhist perspective of suicide and applying Buddhist approaches to suicide prevention and treatment could be important in the Korean population. Further exploratory and confirmatory studies are needed in different sites and demographics.

No. 92

Risk of Suicide in Depressed Patients With Body Dysmorphic Disorder

*Poster Presenter: Muhammad Navaid Iqbal, M.D.
Co-Authors: Minha Kim, Asghar Hossain*

SUMMARY:

A 16-year-old female was brought to the emergency department by her mother due to the patient cutting herself with glass on both forearms. The patient had been suffering from depression for at least a year with dramatic decline over the past eight months. She had never been on any antidepressant medication. For the past year, she began exhibiting body dysmorphic-like disorder. She had become obsessed with her appearance and attempted to lose weight by starving herself, taking weight loss pills and becoming vegan. Two days prior to her admission to the emergency department, the patient reported that she had become angry and upset, leading her to break glass to inflict vertical incisions on her forearms. There were many superficial and deep cuts on both forearms. At the moment, it remains uncertain whether the cuts were intended to relieve her emotional pain or a suicide attempt. Despite the motive of the patient's actions, this brings forth an important issue of suicide in patients suffering from depression along with body dysmorphic disorder (BDD). Studies have demonstrated that 24–28% of individuals with BDD have attempted suicide. Suicide completion rates are shown to be higher in both separate groups of BDD patients and major depressive disorder (MDD) patients than the general population. The indication of suicide risk should be increasingly higher in a patient suffering from both disorders. In this poster, we would like to raise concerns and suspicion for clinicians in monitoring and treating patients with MDD and BDD and discuss how to recognize and diagnose this often secret disorder.

No. 93

Quantifying the Risk Factors of Past Suicide Attempt(s) Between Bipolar I and II Disorder: Analysis Using the Gradient Boosting Machine (GBM) Models

*Poster Presenter: Peter J. Na, M.D., M.P.H.
Co-Authors: Susan L. McElroy, M.D., Jennifer R. Geske, M.S., Joanna M. Biernacka, Ph.D., Mark Frye, M.D., William V. Bobo, M.D., M.P.H.*

SUMMARY:

Death by suicide is a leading cause of premature mortality in patients with bipolar disorder (BP). While past suicide attempt(s) are robust predictors of eventual suicidal death, few studies have compared risk factors for attempted suicide between BP-I and BP-II patients. Data were analyzed from 1,465 patients enrolled in the Mayo Clinic Individualized Medicine Biobank for Bipolar Disorder. Demographic and clinical variables, including lifetime suicide attempts, were ascertained using standardized questionnaires. Logistic regression and Lasso method for variable selection were used to assess the risk of having a past suicide attempt with age, sex, BP subtype, patterns of adverse BP illness course, and comorbid psychiatric and substance use disorders as predictors. The relative influence (RI) of each of these variables on the risk of having a past suicide attempt was quantified using gradient boosting machine (GBM) models. BP-I subtype, female sex, early age of BP onset (defined as age 19 or younger), history of lifetime rapid cycling, increased mood episode severity or mood episode frequency over time, presence of binge eating behaviors, and current comorbid anxiety, eating and substance use disorders were associated with lifetime suicide attempt(s) based on the Lasso. Among 1,465 BP patients, 469 patients (32.0%) reported at least one suicide attempt in the past. There were no significant interactions between any covariates and BP subtype, but the association between rapid cycling and suicide attempt(s) was significantly higher for men (OR=3.1, 95% CI [2.0, 4.7]) than women (OR=1.5, 95% CI [1.1, 2.0], interaction effect $p=0.005$). For the entire cohort, the greatest relative contributor to the overall risk of lifetime suicide attempt(s) was female sex (11.1%), followed by rapid cycling (11.0%), nicotine dependence (9.9%), increased mood episode severity (9.8%), early age of BP onset (7.5%), comorbid anxiety disorder (7.4%), and binge eating disorder (6.2%). For subjects with BP-I, the RI was highest for rapid cycling (13.3%), followed by nicotine dependence (12.7%), self-reported increased mood episode severity (10.0%), female sex (9.2%), and comorbid anxiety disorder (9.1%). For subjects with BP-II, the RI was highest for binge eating disorder (10.3%), followed by rapid

cycling (9.6%), female sex (9.6%), comorbid alcohol use disorder (9.5%), and self-reported increased mood episode severity (9.4%). Our study has limitations due to its cross-sectional design, which does not allow us to infer a causal relationship between study variables and past suicide attempt(s). The RI of predictors did not demonstrate any significant difference between BP-I and BP-II subjects, and the absolute differences in RI between BP-I and BP-II subjects were small. Our results suggest that certain clinical and demographic characteristics of BP patients may have greater influence on the risk of lifetime suicide attempt(s) than others.

No. 94**The Results of Prevention of Suicidal Behavior in Belarus**

Poster Presenter: Sergey A. Igumnov

SUMMARY:

During the period of 1990 to 2013, the Republic of Belarus was a country with a high level of suicides—more than 20 cases per 100,000 population. The peak suicide rate in the general population was registered in 1996, when 3,632 suicides had been committed in Belarus, and the suicide rate was 35.8 cases per 100,000 population. The peak suicide rate in urban populations was registered in 1996, when the suicide rate accounted for 29.1 cases per 100,000 urban population. The peak suicide rate in rural populations was registered in 2003, when the suicide rate was 57.4 cases per 100,000 rural population. During the period 1995 to 2005, the suicide rate in general population had not reached numbers lower than 30 cases per 100,000 population. The marked and persistent tendency of suicide rate reduction occurred in 2004. The suicide rates fell below 30 in 2006 and accounted for 29 cases per 100,000 population. This tendency has become remarkably clear.

No. 95**Clinical and Psychosocial Features of Teenagers With Dependence on Synthetic Cannabinoids**

Poster Presenter: Sergey A. Igumnov

SUMMARY:

The aim of the study is to investigate clinical and

sociopsychological characteristics of adolescents, characterized by systematic excessive use of synthetic cannabinoids. The selection included 100 adolescents ages 16 to 19. Representatives of the main group (N=50, including 29 males and 21 females) were characterized by systematic excessive use of synthetic cannabinoids. The control group consisted of 50 adolescents (26 male and 24 female) characterized by a behavior without addiction. The results of the correlation analysis show an inverse correlation between the level of addictive relationship of identity and level of sociability ($r_s=0.278$; $p=0.05$), social presence ($r_s=0.367$; $p=0.01$), self-acceptance ($r_s=0.292$; $p=0.05$), responsibility ($r_s=0.391$; $p=0.01$), socialization ($r_s=0.414$; $p=0.01$), self-control ($r_s=0.354$; $p=0.05$), and intellectual efficiency ($r_s=0.292$; $p=0.05$).

No. 96

Mechanism of Methamphetamine-Evoked Release of 5-Hydroxytryptamine in Rat Brain

Poster Presenter: Byoung Jo Kim

Co-Authors: Jong Chul Yang, Hyun gi Kim

SUMMARY:

Background: Methamphetamine (MAP) is a well-known psychostimulant. MAP is a potent form of amphetamine that abusers of the substance inhale, smoke or inject intravenously. MAP produces its primary effects by causing the release of catecholamines, particularly dopamine, from presynaptic terminals. Activation of the reward circuit pathway is probably the major addicting mechanism. MAP causes the release of catecholamines (dopamine and norepinephrine) and serotonin. **Methods:** We examined the mechanism of MAP-induced [^3H]5-hydroxytryptamine ([^3H]5-HT) release in rat hippocampal slices. MAP induced the release of [^3H]5-HT in a dose-dependent manner (1-300 μM). At 10 μM concentration of MAP, [^3H]5-HT was released over 400% of resting period. In the presence of 1 μM yohimbine, MAP-induced [^3H]5-HT release was potentiated. MAP-induced [^3H]5-HT release was not inhibited by 1 μM tetrodotoxin, indicating the action site of MAP is located on the presynaptic terminal. MAP-induced [^3H]NE release was not altered by voltage-sensitive calcium channel blockers (nitrendipine, ω -conotoxin GVIA and, ω -agatoxin IVA). Data are expressed as mean \pm SEM. The

significance of differences between groups was determined by one-way ANOVA followed by Mann-Whitney U-test or Kruskal-Wallis test. **Results:** Influence of yohimbine (1 μM) on the 10 μM MAP-evoked release of [^3H]5-HT in rats. In the presence of yohimbine 1 μM , MAP 10 μM increased up to 35.9 \pm 2.4% (30% increased, $p<0.05$), which is, MAP stimulated [^3H]5-HT from rat cerebral cortex slices in a dose-dependent manner. Tetrodotoxin (TTX, 1 μM) did not influence the 10 μM MAP-induced [^3H]5-HT release. Fluoxetine (1 μM), a selective 5-HT transporter blocker, significantly inhibited MAP-induced [^3H]5-HT release. MAP-induced [^3H]5-HT release was inhibited by MK-801 (10 μM), but not by D-AP5 (NMDA receptor glutamate competitive inhibitor, 100 μM) or DNQX (non-NMDA receptor inhibitor, 30 μM), significantly different from the control value ($p<0.05$). Also, MAP failed to stimulate the release of [^3H] aspartate even in 100M. MAP-induced release of [^3H]NE was reduced by inhibitors of nitric oxide (NO) synthase, 7-nitroindazole (10 μM), L-NAME (N-nitro-D-arginine methyl ester, 30 μM), and L-NMMA (300 μM) and potentiated by cGMP phosphodiesterase inhibitor, zaprinast, methylene blue (30 μM) and ODQ (30 μM), significantly different from the control value ($p<0.05$). L-NAME had no effects on MAP-induced behavioral changes. NO synthase activates this enzyme to form cyclic guanosine monophosphate (cGMP). **Conclusion:** Our results suggest that MAP induces 5-HT release by reversal of transporter, which is located in presynaptic terminal, and that NO is involved in this process. Mechanism of methamphetamine-evoked release of 5-hydroxytryptamine in the rat cerebral cortex is mediated by selective 5-HT transporter.

No. 97

Alexithymia, Problematic Alcohol Consumption and Deficient Facial Recognition of Emotions

Poster Presenter: Michael Lyvers, Ph.D.

Co-Authors: Karrah McCann, B.Sc., Mark S. Edwards, Ph.D., Fred Arne Thorberg, Ph.D.

SUMMARY:

Background: Alexithymia, a trait involving difficulties in identifying and describing one's own emotions and an external thinking style, has been reported to be associated with alcohol dependence as well as

interpersonal difficulties. The externally oriented thinking (EOT) facet has specifically been linked to deficits in recognizing external cues of emotion, which likely contributes to the social difficulties reported by those with high levels of alexithymia. Previous work has found EOT to negatively predict facial emotion recognition and emotional empathy, deficits of both of which have also been linked to chronic heavy alcohol consumption. The association with alcohol has often been assumed to reflect an effect of chronic heavy drinking on the brain; however, recent findings that trait alexithymia is strongly associated with alcohol problems as well as deficient facial recognition of emotions may suggest that at least part of the association between chronic heavy drinking and deficient facial emotion recognition may be mediated by alexithymia as a pre-drinking trait rather than a consequence of chronic alcohol exposure. **Methods:** This study investigated the potential role of the EOT facet of alexithymia as a mediator in the relationship between alcohol consumption and impaired facial recognition of emotion. The study utilized a non-clinical sample of 191 participants, which included 85 males and 106 females who ranged in age from 17 to 63 (mean=22.60, SD=7.34). The participants completed an online survey, which included the Alcohol Use Disorders Identification Test (AUDIT), Depression Anxiety Stress Scales-21, Interpersonal Reactivity Index, Mindfulness Attention Awareness Scale, Reading the Mind in the Eyes Test (RMET), and the Toronto Alexithymia Scale. **Results:** A number of predicted relationships among measures were found. EOT (as well as overall alexithymia scores) partially mediated the relationship between self-reported typical alcohol consumption (as indexed by AUDIT) and impaired facial emotion recognition (as indexed by RMET). **Conclusion:** The link between chronic heavy drinking and impaired emotion recognition may not necessarily reflect chronic alcohol-induced brain damage but rather may reflect a trait factor that strongly predisposes to both. This research was funded by an internal university research grant.

No. 98

Use of Novel Psychoactive Substances and Induced Psychiatric Symptoms: Outcomes From the Eivissa Project

Poster Presenter: Giovanni Martinotti

Co-Authors: Mariangela Corbo, Fabiola Sarchione, Chiara Montemitro, Anna Pasquini, Eduardo Cinosi, Cristina Merino Del Villar

SUMMARY:

Background: Polydrug abuse and risk-taking behaviors seem to be especially popular in the nightlife scene of the Balearic Islands. Ibiza represents an open-air laboratory for drug dealers and one of the main market for new psychoactive substances (NPS). **Objective:** Evaluate the psychiatric symptoms induced by NPS and other club drugs, correlating the induced phenomena with the main classes of drugs and their pharmacodynamics pathways. **Methods:** A sample of 90 subjects (59 male; 31 female) was enrolled in the psychiatric unit of the Can Misses Hospital of Ibiza. Only patients reporting a recent intake of NPS, alcohol or other substances were admitted. The following scales were administered: Timeline Follow-Back (TLFB); Positive and Negative Symptoms Scale (PANSS); Symptom Checklist 90 (SCL-90); Young Mania Rating Scale (YMRS); Hamilton Depression Scale (HAM-D); Hamilton Anxiety Scale (HAM-A); Modified Overt Aggression Scale (MOAS); and Columbia Suicide Severity Rating Scale (C-SSRS). **Results:** Although multiple substance abuse was reported by 67.4% of the sample, a main preferred substance has been approximately considered. The three groups included THC, stimulant (cocaine, MDMA, mephedrone) and depressant (BDZ, barbiturates, alcohol) users. The majority of the sample reported a previous psychiatric history. Positive symptoms (PANSS) resulted to be higher among THC users ($p < 0.05$). SCL-90 results showed a prevalence of anxiety symptoms in the group of depressant users ($p < 0.05$). Other-directed aggression resulted to be significantly greater in the THC group, according to the scores of MOAS scale ($p < 0.01$) and the SCL-90 subscale for hostility/aggression. Suicidality was comparable in the three groups. **Conclusion:** Some specific psychiatric symptoms are characteristic of some classes of substances and may help to identify them when a urine sample is not available. The possibility to develop psychiatric symptoms after a recent drug use is more common in two situations: 1) patients with a previous psychiatric history and 2) subjects with a history of very strong substance use.

No. 99

Death Rates From Novel Psychoactive Substances and Polydrug Use in Ibiza 2000–2016: The Role of Psychiatric Comorbidities

Poster Presenter: Federica Fiori

Lead Author: Giovanni Martinotti

Co-Authors: Duccio Papanti, Gabriella Catalano, Maria Luisa Carenti, Claudia Ruiz Bennasar, Federica Angelini, Valerio Mancini, Gaia Baroni, Alessia Rondoni

SUMMARY:

Background: The physical and psychopathological risks of non-habitual drug consumption are frequently underestimated, and substance-related fatalities often involve first-time or sporadic clients. Moreover, in recent times, in addition to “classic” substances of abuse, novel psychoactive substances (NPS) have emerged, determining a further health issue of growing importance. There is currently a growing body of clinical evidence to demonstrate the potential acute and chronic health harms associated with the use of NPS, but often very little is known by both consumers and health care professionals. NPS-related deaths have been investigated mainly in the UK, but in this context, polysubstance use and behavioral risk taking seem to be particularly widespread in the Balearic Islands nightlife scene. The aim of study was to focus on the records of all drug-involving fatalities registered in Ibiza from January 2000 to December 2016, in order to analyze the characteristics of the sample, the identified substances, the psychiatric comorbidity, and the nature of deaths associated with their consumption. **Methods:** All the reports of fatalities directly related to drugs and analyzed by the forensic medicine unit in Ibiza were collected. A further addition regarded the collection of all the reports of fatalities that might involve drugs, such as suicides and traffic accidents. All reports included analysis of body samples. **Results:** 192 fatalities directly related to drugs have been registered in Ibiza, which represents a significant increase with respect to the previous four years. Most of the subjects were young males (mean age 30.5). Sixty-four subjects (33%) had a previous history of alcohol and drug abuse and/or psychiatric disorders, mainly in the mood spectrum. The most common causes of death

were acute pulmonary oedema/hemorrhage and acute respiratory failure. 112 traffic accident-related fatalities (car accidents) and 144 suicides were also registered. The most common substances in all fatalities included MDMA, alcohol, cocaine, THC, opiates, mephedrone, and prescription drugs.

Discussion: Although the use of NPS is rapidly increasing in Europe, according to the results from our sample, alcohol and well-known stimulants (MDMA and cocaine) are the substances of abuse mainly involved in the cases of drug-caused and drug-related fatalities. The growth in international travel associated with nightlife, the additional risks posed by clubbing in an unfamiliar country, the threats of new and often unknown psychoactive substances, and the changes in drug use and risk-taking among people visiting an international resort mean that both interventions and basic health and safety measures are now required on an international basis. The significant increase of fatalities in Ibiza in the last five years is an issue that must be taken into account.

No. 100

A Culturally Adapted Motivational Interviewing and Cognitive Behavior Therapy Intervention for Substance Misuse in Pakistan (CaMIAB)

Poster Presenter: Imran Bashir Chaudhry, M.D.

Co-Authors: Nadeem Gire, Ilyas Mirza, M.D., Haider Ali Naqvi, M.B.B.S., Karim Dar, M.B.B.S., Shafqat Huma, M.B.B.S., Yasir Abbasi, M.B.B.S., Fareed Minhas, M.B.B.S., Meher Husain, Chris Sutton, Ph.D., Hasan Sidat, B.A., Aasim Karbhari, M.Sc., Sana Farooque, M.Phil., Nusrat Husain, M.D.

SUMMARY:

Background: Substance misuse has become an increasing problem among individuals living in Pakistan. A survey carried out on drug use in Pakistan by the United Nations Office on Drugs and Crime in 2013 found that approximately six percent of the population, or approximately 6.7 million people, had used illicit substances in the past year. Of this 6.7 million people who had used illicit substances within the past year, an approximate four million were reported to be dependent on substances and required structured interventions for treatment of their drug use disorder. In addition, cannabis has been shown to be the most commonly

used drug in Pakistan, with a prevalence rate of 3.6% of the population, equivalent to almost four million users nationwide. Substance misuse in the Pakistani population can be understood from a biopsychosocial perspective; it is not merely a biological process but includes psychological elements (our thoughts, feelings and behaviors) and social elements (our interactions with our communities). The social perspective is particularly important in the Pakistani population, where family and community are often considered above and more important than the individual and where spirituality and religion also play an important role. Health interventions in Pakistani groups, therefore, are most likely to succeed if they incorporate culturally appropriate cognitive, behavioral, spiritual, and social components. **Objective:** Culturally adapt a motivational interviewing (MI) and cognitive behavior therapy (CBT) group intervention (CaMIAB) for substance misuse in Pakistan and to test the CaMIAB intervention in a feasibility randomized controlled trial. **Methods:** A mixed methods design will be used, consisting of both quantitative and qualitative components, in a group of 64 participants who will be randomized to either the CaMIAB group (N=32) or treatment as usual (TAU) (N=32). We will present the results of our qualitative work with service users. **Discussion:** Substance use disorders contribute to a significant burden on public health and the criminal justice system. The Pakistani patients are less likely to have access to or engage with the current services; this is possibly due to the lack of culturally sensitive psychological interventions not meeting the cultural needs of these individuals. Interventions developed in the west need to be adapted to meet the cultural needs of individuals from low- and middle-income countries. The results of this study will help inform the design of a larger definitive trial.

No. 101

Comparison of EEG Coherence Between Major Depressive Disorder (MDD) Without Comorbidity and MDD Comorbid With Internet Gaming Disorder

Poster Presenter: Young Sik Lee, M.D., Ph.D.

Co-Authors: Sun Mi Kim, Joohyung Youh, JaeYoung Ahn, M.D., Doug Hyun Han, Kyoung Joon Min, Baik Seok Kee

SUMMARY:

Background: Internet gaming disorder (IGD) has many comorbid psychiatric problems, including major depressive disorder (MDD). In this study, we compared the neurobiological differences between MDD without comorbidity (MDD-only) and MDD comorbid with IGD (MDD+IGD) by analyzing the quantitative electroencephalogram (QEEG) findings. **Methods:** We recruited 14 male MDD+IGD (mean age=20.0±5.9 years) and 15 male MDD-only (mean age=20.3±5.5 years) patients. The participants were assessed using Young's Internet Addiction Scale, Beck's Depression Inventory, Beck's Anxiety Inventory, Conners-Wells' Adolescent Self-Report Scale, and the Korean ADHD Rating Scale. The inter- and intra-hemispheric coherences were measured for delta, theta, alpha, and beta bandwidths using a 21-channel digital EEG system. Differences in inter- and intra-hemispheric coherence values for the frequency bands between groups were analyzed using the independent t-test. **Results:** Inter-hemispheric coherence value for the alpha band between Fp1–Fp2 electrodes was significantly lower in MDD+IGD than MDD-only patients ($t=-2.06$, $p<0.05$). Intra-hemispheric coherence values for the delta band between F7–T3, F3–C3, F3–Fz, and T3–C3 electrodes and the theta band between F7–T3 and T6–O2 electrodes were higher in MDD+IGD than MDD-only patients (all $p<0.05$). Intra-hemispheric coherence value for the alpha band between P3–O1 electrodes was higher in MDD+IGD than MDD-only patients. Intra-hemispheric coherence values for the beta band between P4–O2, F8–T4 and T6–O2 electrodes were higher in MDD+IGD than MDD-only patients (all $p<0.05$). **Conclusion:** There appears to be an association between decreased inter-hemispheric connectivity in the frontal region and vulnerability to attention problems in the MDD+IGD group. Increased intra-hemisphere connectivity in the frontal, temporal, parietal, and occipital areas may result from excessive online gaming. **Keywords:** Internet Gaming Disorder, Major Depressive Disorder, Quantitative Electroencephalogram, Coherence

No. 102

Mental Health Literacy of Psychiatric Outpatients and the Belief in the Supernatural in an Asian Hospital

Poster Presenter: Leslie Lim

Co-Authors: Justine Goh, Yiong Huak Chan, Shi Hui Poon

SUMMARY:

Background: The understanding of the causation, features and treatment of mental disorders affects treatment seeking and is termed mental health literacy (MHL). Attributing mental illness to demonic spirits and supernatural elements is prevalent in Southeast Asia. Unsurprisingly, some prefer to consult traditional healers rather than psychiatric professionals. We compare MHL levels of psychiatric outpatients diagnosed with anxiety disorders and depression and a control group of nonpsychiatric outpatients. We hypothesize higher levels of MHL among psychiatric patients than controls, with younger age and higher educational levels associated with better literacy. We also hypothesize that there would be an inverse relationship between educational level and the belief in the supernatural causality of mental disorders. **Methods:** Psychiatric outpatients and a control group of nonpsychiatric patients were shown two vignettes, each depicting major depression (MDD) and generalized anxiety disorder (GAD). Their opinions regarding diagnosis, etiology, treatment, and mental health services were ascertained by structured questionnaires. To assess recognition of MDD and GAD in the vignettes, participants were asked to identify whether the condition was psychiatric or spiritual and, if psychiatric, to identify the diagnosis. They were assessed on what they perceived as behaviors typical of persons with mental illnesses, the utility and side effects of psychiatric medications, and their knowledge of how to obtain a psychiatric referral. Demographic differences were accounted for using ANCOVA analyses. We also assessed their tendency to believe in supernatural causality of mental illness. **Results:** A total of 131 patients, comprising 70 psychiatric patients and 61 controls, gave consent to the study. Psychiatric patients did not demonstrate superior MHL compared to controls, with the exception of knowing where to obtain a psychiatric referral ($p=0.008$). Simple linear regression analysis suggested a significant inverse relationship between age and composite scores in psychiatric patients ($p=0.046$), although this was not significant for controls ($p=0.984$). There was significant negative

association between educational level and belief in the supernatural causation of depression and GAD ($p<0.001$), suggesting that the better educated were less likely to subscribe to supernatural attributions. However, older patients were not more likely to attribute depression ($p=0.748$) nor anxiety ($p=0.559$) to supernatural causes. **Conclusion:** Younger and better educated psychiatric patients had better MHL, whereas the lesser educated were more likely to attribute mental illness to supernatural elements. Belief in supernatural etiologies seemed independent of MHL. There is a need to address literacy deficiencies in patients and their relatives, taking into account prevailing cultural beliefs in the population. This study was supported by the Lee Foundation.

No. 103

Outcome of Naturalistic Pharmacological Treatment in Panic Disorder Patients With the Respiratory Subtype

Poster Presenter: Rafael C. Freire, M.D., Ph.D.

Co-Authors: Clarissa Valle, Marcos Fidry, Morena Zugliani, Antonio E. Nardi, M.D., Ph.D.

SUMMARY:

Background: According to the *DSM-5*, panic disorder (PD) is a unitary diagnosis; however, recent studies point to distinct PD subtypes. The respiratory subtype (RS) is the most studied subtype, and there is abundant evidence of its validity. Compared to non-respiratory subtype (NRS) patients, RS patients have more psychiatric comorbidities, more familial history of PD and higher sensitivity to carbon dioxide, hyperventilation and caffeine. **Objective:** Ascertain if RS patients have a more severe form of PD and respond poorly to pharmacological treatment, compared to NRS patients. **Methods:** Sixty PD patients without treatment were recruited for this study. Clinical evaluation and administration of scales and questionnaires were made in the first hospital visit. The clinicians chose the medications freely and started the treatment; after four weeks, doses were adjusted and medications were switched if necessary. All subjects were evaluated again with the same instruments after eight weeks of treatment. The instruments used were the Mini International Neuropsychiatric Interview (MINI), Panic and Agoraphobia Scale (PAS), Clinical Global

Impression–Severity and –Improvement (CGI-S and CGI-I), Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), and Diagnostic Symptom Questionnaire (DSQ). **Results:** Only 33 patients concluded the study. At baseline, RS patients had more comorbidities with agoraphobia ($p=0.02$) and higher scores in PAS ($p=0.03$), BAI ($p<0.01$), BDI ($p=0.05$), and DSQ ($p<0.01$) compared to NRS patients. In the comparison between baseline and eight-week evaluations, with all patients, there were significant improvements in CGI-S, PAS, BAI, and BDI (all with $p<0.01$). 56.4% of the patients responded to treatment. There were no statistically significant differences between RS and NRS regarding improvement and response to treatment. **Conclusion:** RS patients presented initially a more severe form of PD, but they had a good response to treatment, indistinguishable from the response of NRS patients. This poster demonstrates the clinical importance of the RS.

No. 104

Clinical Utility of Heart Rate Variability During Head-Up Tilt Test in Subjects With Chronic Posttraumatic Stress Disorder

Poster Presenter: Sukhoon Kang

Co-Authors: Joo Eon Park, Hae Gyung Chung, Jin Hee Choi, Tae Yong Kim, HyungSeok So

SUMMARY:

Background: Heart rate variability (HRV) is known to reflect autonomic nervous system (ANS) activity. Individuals with posttraumatic stress disorder (PTSD) are reported to have lower HRV, but the measurement methods used to obtain these findings are inconsistent. We investigated differences in HRV in the supine position with HRV in the head-up tilt position in subjects with PTSD. **Methods:** Sixty-seven patients with PTSD and 72 patients without PTSD were assessed using the PTSD Checklist for *DSM-5* (PCL-5), the Beck Depression Inventory, the Beck Anxiety Inventory, and the Pittsburgh Sleep Quality Index. HRV was measured in the supine position and afterward in the head-up position. We collected data regarding heart rate (HR), standard deviation of the NN intervals (SDNN), the square root of the mean squared differences of successive NN intervals (RMSSD), log low-frequency (LF), log high-frequency (HF), and LF/HF ratio. **Results:** PCL-5 scores were

significantly lower in the PTSD group than in the non-PTSD group. Seventy-two non-PTSD subjects and 67 PTSD subjects were examined in the head-up position using a tilt table about 30 minutes after measurements in the supine position were carried out. HR ($F=5.711$, $p=0.021$), SDNN ($F=11.252$, $p=0.001$), RMSSD ($F=7.868$, $p=0.007$), and log HF ($F=11.137$, $p=0.001$) differed significantly between the two groups. When comparing positional changes, HR ($F=32.423$, $p<0.001$) and RMSSD ($F=3.995$, $p=0.037$) were significantly different within subjects. Comparing HRV between the two groups in the head-up position, the PTSD group had a significant elevation in RMSSD ($F=4.296$, $p=0.031$) after adjusting for age, sex and CVD and considering an interaction effect with position and group. HRV indices in the supine position were not related to PTSD symptoms, except that RMSSD correlated with hyperarousal symptoms. However, measurements performed after adoption of the head-up tilt position showed that negative alteration in cognition and mood and hyperarousal symptoms in PTSD were associated with various HRV indices. **Conclusion:** PTSD may be more related to changes in parasympathetic tone than to responses of the sympathetic nervous system (SNS). In particular, in the head-up tilt position, subjects with PTSD had parallel changes in the SNS and the parasympathetic nervous system (PNS), as opposed to reciprocal alterations. Additionally, SDNN and HF indices appeared to have greater values as objective neurophysiological markers in representing PTSD symptoms. Our findings indicate that the measurement of HRV in the head-up tilt test may be used as an objective method for evaluating symptoms of PTSD. Further systematic research with large samples may provide more data on changes in the ANS following treatment for PTSD.

No. 105

Disordered Eating Screen for Athletes (DESA-6): A Proposed Self-Report Brief Screening Tool for Disordered Eating in Athletes

Poster Presenter: Samantha F. Kennedy, D.O.

SUMMARY:

Disordered eating is a growing problem among athletes that adversely affects physical and mental health, as well as sport performance. Eating

disorders are associated with increased risk for many mood, anxiety, impulse control, and substance use disorders and have the highest mortality rate of all mental disorders. There are screening tools for athletes currently available, but these tools are designed only for female athletes or female college athletes. Additionally, these screening tools are lengthy and consist of 29 to 51 items. One screening tool has only 18 items, but also requires four physiological measurements, including body fat percentage, which can be difficult to obtain. There is no brief screening tool available for use in both male and female adult athletes of all ages to identify athletes at risk for disordered eating. The objective of this study is to develop a screening tool that consists of only six items and is designed to identify adult athletes of both genders and all ages who are at risk for disordered eating. With only six items, the DESA-6 potentially offers physicians and athletic trainers a quicker alternative for screening that the athlete can complete prior to seeing the clinician. Male and female athletes were recruited through the MSU Sports Medicine Clinic in East Lansing, Michigan, and response rate was 94%. Participants completed a survey that included demographic information including age, primary sport, height, current weight, and training hours. The survey also included the DESA-6 and the EAT-26. The EAT-26 is a validated and reliable self-report questionnaire assessing the risk of disordered eating and was used to assess the validity of the DESA-6. Preliminary results from N=157 athletes show the DESA-6 has an acceptable sensitivity (75%) and specificity (73.1%) for a brief screening tool. The DESA-6 is easy to administer and takes less than five minutes to complete. Further data collection is necessary, but preliminary results suggest the DESA-6 may be a useful tool that can be used to screen all adult athletes for risk of disordered eating.

No. 106

Orthorexia: A Case Report and Literature Review

Poster Presenter: Rebecca Olufade

Co-Authors: Tanya Mital, Walter J. Kilpatrick III

SUMMARY:

Background: Many changes have been made to the *DSM-5* with regards to feeding and eating disorders, as it has been recognized that many people did not

fit into the former dichotomous categories of bulimia and anorexia nervosa. Eating disorder diagnoses are commonly seen in female patients, but presumably there are eating disorders that remain undiagnosed in males. **Case:** A 54-year-old male with history of major depressive disorder and prior suicide attempts presented to the emergency room due to weakness, nausea and bilious emesis occurring in the setting of a three-day water fast to “cleanse out my body.” In the emergency department, the patient was found to have an anion gap metabolic acidosis and received intravenous fluids along with medications for symptomatic treatment of nausea. The patient began a three-day water fast after performing extensive research regarding the fast. He had hoped it would help alleviate his chronic pain and constipation. He reported preparing for a few months, eating only fruits and salads. He began experiencing nausea, which did not improve, and the patient called the ambulance. He denied this fast as being a suicide attempt. He reported that he had fasted multiple times in the past, mentioning that he believed in “health stuff, herbs and a super-healthy diet.” The patient also detailed the importance of spirituality in his life. Upon arriving to the hospital and realizing the severity of his physical health, he vowed not to attempt fasting of this nature in the future and stated, “I’m going to have to live with an imperfect body.” **Discussion:** Orthorexia has been defined as “a fixation on eating healthy foods in order to avoid ill health and disease.” At this time, it is not currently recognized by the *DSM-5*. A diagnostic criterion for this condition includes preoccupation with eating healthy foods, focusing on quality and composition of meals, which causes impairment of physical health or social functioning. **Conclusion:** Although uncommon for males to present with eating disorders, it is something to be cognizant of. This case brings to light a male patient with a rare eating disorder, orthorexia, which is still being characterized in the literature and an eating disorder that may have been overlooked as being an intentional suicide attempt given his past psychiatric history. Psychiatrists need to recognize newer types of eating disorders in order to provide proper assessment and treatment.

No. 107

A Comparative Review of International Hospitalization Indications (Medical and Psychiatric) for Patients With Eating Disorders

Poster Presenter: Daniel Gih, M.D.

Co-Author: Shumaila Younas, M.D.

SUMMARY:

Background: Eating disorders are associated with significant morbidity and mortality due to psychiatric and medical complications. As such, acute hospitalization may be needed to stabilize the patient and often proves to be lifesaving by preventing further decompensation. Various groups have formulated guidelines related to hospitalization for patients with eating disorders. This review analyzes the currently available guidelines and makes a case for the need for a uniform standard.

Methods: A systematic literature search was conducted in PubMed, Embase and the Cochrane Library using key terms “eating disorder,” “hospitalization,” “admission criteria,” “medical,” and “psychiatric.” Inclusion criteria were articles available in English, involving human subjects, and guidelines from professional organizations published between 2005 and 2015. Within each article, criteria for hospitalization were categorically divided into psychiatric or medical. **Results:** Five guidelines were found from the United Kingdom, Finland, United States of America, Australia, and New Zealand. All suggested bradycardia (under 40 beats per minute) as a criterion for medical hospitalization. Four contained hypotension (systolic BP<70mmHg), hypokalemia (less than 3.0 meq/L), weight under 75–85% of expected body weight, and any acute electrocardiography (ECG) changes. Failure of outpatient treatment, rapid weight loss and other electrolyte abnormalities had been indicated as admission criteria in three of the guidelines. On other hand, suicidal ideation or attempt, acute psychosis, severe depression, and extreme family dysfunction comprised psychiatric indications for admission in all guidelines. Worsening of comorbid conditions such as substance abuse, extreme anxiety, obsessive-compulsive disorder, or extreme agitation were listed in three as reasons for psychiatric admissions. **Discussion:** Despite some commonalities, we found marked variability among criteria across different countries. More differences were noted when considering medical

hospitalization compared with psychiatric. There was a paucity of literature involving children or adolescents in these guidelines and a lack of specificity for what constitutes EKG changes or standard cutoff for blood pressure changes. There was no uniform process of calculating estimated body weight. Also, there was no clear definition regarding failure of outpatient treatment or family dysfunction. The Australian and New Zealand guidelines were found to be closely related and were consistent with guidelines published by the Society for Adolescent Health and Medicine, with some minor differences. **Conclusion:** There is limited literature about when to hospitalize, especially for a child or adolescent with eating disorders. Differences in each guideline may reflect practices or resources within each country. Given the increasing prevalence of eating disorders over the last decade, there may be a need for a universally recognized standard to guide clinicians.

No. 108

“What I Think I Look Like”: A Photographic Study of Perceived Body Image in Patients With Eating Disorders

Poster Presenter: Martha Peaslee Levine, M.D.

Lead Author: Michael Nakhla

SUMMARY:

Background: Eating disorders, such as anorexia nervosa, bulimia nervosa and body dysmorphic disorder are conditions in which patients exhibit some degree of body image distortion. This study visualizes the degree of perceived body image disturbance and dysmorphia in patients struggling with eating disorders and correlates this with measures of body dissatisfaction, body preoccupation and self-esteem. **Methods:** Twenty participants with previously diagnosed eating disorders were photographed. Their full-body images were digitally altered using Adobe Photoshop, as directed by the patients, to render photo representations of their perceived body image (what they think they look like) as well as their idealized body image (what they want to look like). The differences between the perceived body image and the idealized body image were measured in pixels, and this measurement was compared to scales the patients completed, which measured self-

esteem, body shame or guilt, and degree of dysmorphia. Eleven healthy controls completed the same steps as above to provide comparison data.

Results: The patient group exhibited a statistically significant greater percent pixel change between perceived and idealized body image in all measured body areas—face, shoulder width, neck width, hip width, and thigh width. The patient group exhibited significantly more body shame, worse self-esteem and a higher degree of body dysmorphia. Thirteen of the 20 patients exhibited a severe degree of body dysmorphia, and five of the 20 exhibited a moderate degree of body dysmorphia, as measured by their responses on the Body Dysmorphic Disorder Modification of the Yale-Brown Obsessive Compulsive Scale. Eighteen of the 20 patients exhibited moderate or severe body dysmorphia, and of these, 18 patients demonstrated significantly greater measured differences between perceived and ideal body image in all body groups, as compared to the two remaining patients who displayed a mild degree of body dysmorphia.

Conclusion: Patients with eating disorders exhibit varying degrees of body dysmorphia. Those who exhibit a more severe degree of dysmorphia demonstrate a greater difference between their perceived and idealized body image and proportionally lower self-esteem and greater body guilt or shame. These results support the overlap of symptomatology between BDD and ED and may suggest comorbidity or dual diagnosis in eating disorder patients.

No. 109

Anorexia Nervosa During Pregnancy

Poster Presenter: Joana Jerónimo

SUMMARY:

Background: Anorexia nervosa (AN) is a mental health disorder primarily affecting female adolescents and young women. It is characterized by restriction of energy intake, intense fear of gaining weight and a distorted body image. The incidence of AN is increasing mainly because of cultural pressures on the drive for thinness. AN is responsible for neuroendocrine changes, irregular menstruation and amenorrhoea, leading to fertility problems. However, women with AN succeed in conceiving spontaneously or using a fertility clinic for those who

have difficulties. Pregnancy is a challenging period for women with AN, and the adaptation to motherhood can be very complex. **Objective:**

Perform a literature review of diagnosis, complications and treatment of anorexia nervosa during pregnancy and the postpartum period.

Methods: Studies were searched from the PubMed database with the following keywords: eating disorders, anorexia nervosa, pregnancy, and postpartum. A comprehensive manual search, including search from the reference lists of included articles, was also performed. **Results:** Signs suggestive of AN in pregnant women include lack of weight gain in two consecutive visits in the second trimester, hyperemesis gravidarum and a history of eating disorders. The food restriction or compensatory behaviors (excessive exercise; self-induced vomiting; and the use of diuretics, laxatives, enemas, and appetite suppressants) may improve, remain stable, or worsen during pregnancy and the postpartum period. Many inappropriate compensatory behaviors are adopted or intensified in order to control the normal progression of weight during pregnancy. Clear explanations about the potential consequences of inadequate weight gain should be communicated to patients in an atmosphere of care and concern. Discussing the importance of nutrition for the development of the fetus might offer the woman an incentive to eat, with less focus on her own increasing weight. Pregnancy in anorectic patients increases the risk of complications. Potential negative consequences include higher rates of spontaneous abortion, cesarean delivery, preterm delivery, low birth weight, small for gestational age, growth retardation, and postpartum depression. The postpartum period is a period of increased vulnerability for women with AN, registering a high incidence of relapses. **Conclusion:** AN is a chronic disease. A multidisciplinary team approach offers the most effective treatment for the woman with AN during and after pregnancy. Relapse of the disorder and inadequate compliance with prenatal care are harmful factors for both mother and child. Cognitive behavior therapy is important to change the woman's perception of her body image to a more realistic one. In moderate to severe cases, pharmacotherapy may be necessary.

No. 110
WITHDRAWN

No. 111
WITHDRAWN

No. 112
Persistence and Comorbidity of Mood, Anxiety and Eating Disorders Among Preoperative Bariatric Patients

Poster Presenter: Bruno Mendonça Coêlho, M.D.

Lead Author: Leorides S. D. Guerra

Co-Author: Yuan-Pang Wang

SUMMARY:

Background: Non-standardized assessment and small size samples hamper conclusions on the patterns on course and comorbidity of psychiatric disorders among patients with class III obesity. **Methods:** For 393 treatment-seeking severely obese patients (79.1% women, mean age 43.0 years, mean BMI 47.8kg/m²) from a bariatric center, we ascertained their psychiatric diagnosis through the Structured Clinical Interview for *DSM-IV* (SCID-I). Following this, the frequency, persistence and comorbidity pattern of psychiatric disorders in this sample were determined. **Results:** The rate of current psychiatric disorders was 57.8%, with anxiety disorders being the most frequent diagnosis (46.3%). The rate of lifetime disorders was 80.9%, with mood disorders being the most frequent diagnosis (64.9%). Over 60% of the sample presented two or more concurrent lifetime psychiatric disorders. Although mood and eating disorders were frequent conditions, anxiety disorders were the most persistent conditions (one month-to-lifetime prevalence rate of 84.7%) and were significantly correlated with bipolar, depressive and eating disorders. **Conclusion:** Psychiatric disorders are frequent and enduring conditions among patients looking for bariatric surgery. Comorbid anxiety, mood and eating disorders are remarkable features in patients with obesity. Prognostic implications of the recognition and treatment of psychiatric disorders on surgery outcome should be demonstrated prospectively in intervention studies.

No. 113

Psychiatric Disorders Among Obese Patients Seeking Bariatric Surgery: Results of Structured Clinical Interviews

Poster Presenter: Bruno Mendonça Coêlho, M.D.

Lead Author: Leorides S. D. Guerra

Co-Author: Yuan-Pang Wang

SUMMARY:

Background: Obesity and mental disorders are burdensome health problems commonly observed in the general population and clinical samples. However, non-standardized assessment and small sample size might hamper conclusions of the investigations. **Objective:** Estimate, through standardized interview, the frequency of mental disorders and correlated factors among obese patients seeking bariatric surgery. **Methods:** Using a cross-sectional design, the sample was composed of 393 treatment-seeking obese patients (79.1% women; mean age 43.0 years; mean BMI 47.8kg/m²) who were recruited from a university-based bariatric center. Trained clinicians assessed the participants through the Structured Clinical Interview for *DSM-IV* Axis I Diagnosis (SCID-I/P). **Results:** The rate of current frequency of any mental disorder was 57.8% (57.6% men vs. 58.5% women). Anxiety disorders were the most frequent diagnosis (46.3%) among those participants with a current disorder. Age, education level and global functioning were associated with the likelihood of presenting current mental disorders. The lifetime rate of any mental disorder was 80.9% (81.7 men vs. 80.7% women). Lifetime affective disorders were the most frequent diagnosis (total 64.9%; bipolar disorders 35.6%; depressive disorders 29.3%). Among those respondents presenting any lifetime mental disorder, about half of the sample presented three or more concurrent disorders. **Conclusion:** Mental disorders are frequent conditions among obese patients before bariatric surgery. High rates of mental disorders suggest both disorders might exert mutual causal relationships or share common etiological factors. Prognostic implications of mental disorders on surgery outcome should be demonstrated in follow-up studies.

No. 114
The Role of Liaison Psychiatrist in the General Hospital: Most Frequent Reasons of Consultation in

an Argentinian Service

Poster Presenter: Leonardo E. Hess, M.D., M.Sc.

Co-Authors: Jaime M. Kuvischansky, Manuel Francescutti, M.D., Julia Javkin, M.D., Antonela Nasello, M.D., María Jimena Matacín, M.D., Romina Martinangeli, M.D., Yanina Tejera, M.D., Ezequiel Rodenas, M.D., Carla Graziadei, M.D.

SUMMARY:

Background: Consultation-liaison psychiatry involves the study, practice and teaching of the relation between medical and psychiatric disorders. It is vital to have a wide view of the patient; this could be reached by a biopsychosocial approach. The psychiatrist should take into consideration various aspects of the patient such as the psychodynamic, psychopathological and psychotherapeutic conditions and medical history. The psychiatrist should implement an appropriate treatment in the context of the general hospital, raising effective communication with all the members of the treatment team and with the patient's family as well. The comprehension of the particular needs of special populations with psychiatric and psychosocial morbidity in general hospital must be emphasized.

Objective: The purpose of this study is to describe the most frequent reason for consultation, the symptomatology and the treatment administered in each case in the context of a general hospital.

Methods: This is a retrospective, descriptive and observational study based on 256 patients hospitalized in "Sanatorio Parque," Rosario, Santa Fe, Argentina. The information was collected over a period of 12 months (January 2015–December 2015) through medical records using a new template created by the psychiatric liaison team. The data collected were analyzed through the PSPP-Linux software. The patients with delirium met Confusion Assessment Method (CAM) criteria. **Results:** The main diagnoses were delirium (N=113), suicidal behavior (N=42) and adjustment disorder (N=39). There was a wide age range: delirium (median=53 years; SD=19), suicidal behavior (median=27 years; SD=12) and adjustment disorder (median=41 years; SD=23; $p \leq 0.01$). There were more data collected with non-statistical significance, but that was used to describe the symptoms and singularity of each mental illness. **Conclusion:** The main diagnoses in liaison psychiatry are described in this analysis.

Consultation-liaison psychiatry should flourish because the substantial presence of this subspecialty means better medical care through the direct clinical work of its practitioners along with teaching and research activities. This research would be useful for further studies.

No. 115

Short-Term Treatment of Agitation in Delirium With Second-Generation Antipsychotics: A Review of Cases

Poster Presenter: Jaime M. Kuvischansky

Co-Authors: Leonardo E. Hess, M.D., M.Sc., Julia Javkin, M.D., Manuel Francescutti, M.D., Ezequiel Rodenas, M.D., Antonela Nasello, M.D., Romina Martinangeli, M.D., Carla Graziadei, M.D., María Jimena Matacín, M.D., Yanina Tejera, M.D.

SUMMARY:

Background: Delirium is a neuropsychiatric syndrome characterized by acute change in arousal and cognition arising from an underlying medical injury; it is associated with poor clinical outcome, including personal suffering, cognitive decline, institutionalization after hospitalization, economic costs, and risk of death. Agitation is a frequently occurring symptom in the context of this clinical situation, and it is often associated with the worst prognosis. The always controversial issue of a psychopharmacological approach to agitation associated with delirium and the often contradictory literature motivate us to describe our experience so it can be used by those colleagues linked to the subject who are interested in improving treatment and, consequently, the prognosis of this complex clinical situation. **Objective:** Describe our experience in the treatment of agitation associated with delirium with second-generation antipsychotics, measure the response to treatment by using scales and report side effects. **Methods:** This is a prospective and observational study based on 102 patients hospitalized in the emergency department of "Sanatorio Parque," Rosario, Santa Fe, Argentina. The information was collected in a period of 18 months (January 2015–July 2016). All patients met Confusion Assessment Method (CAM) criteria for delirium. The agitation associated with delirium was measured with the Richmond Agitation-Sedation Scale (RASS). The antipsychotics used were

olanzapine, quetiapine and risperidone, olanzapine in a range dose of 5–20mg per day, quetiapine from 25–200mg per day and risperidone from 0.5–3mg per day. The criteria of selection were the severity of the agitation, administering olanzapine for more agitated patients or for those with the need of a higher level of sedation due to the clinical condition, and risperidone and quetiapine for less severe patients. **Results:** The results demonstrate a significant decrease in agitation symptoms after the antipsychotic administration. The RASS was administered on two different days over a span of 24 hours. Baseline measurement mean was 2.8 ± 0.9 , and the follow-up measurement mean was 0.52 ± 1.6 , showing a significant difference ($p < 0.01$).

Conclusion: Short-term treatment with second-generation antipsychotics demonstrates effectiveness for agitation symptoms. Minor side effects were reported. We found that our experience in short-term treatment with second-generation antipsychotics of agitation associated with delirium is a representative sample of our population.

No. 116

Adult ADHD Patients and Their Competencies

Poster Presenter: Luis Javier Irastorza, M.H.C.

SUMMARY:

Background: In patients with ADHD, executive functions such as everyday attentional and memory problems are affected. But what kind of competencies do ADHD patients have? They are able to have child custody (parental capacity), manage their property, make a will or start a business, consent to treatment, or go to trial. At first, it may seem that ADHD is not a serious condition that inhibits general competencies, but there is a high level of comorbidity in adults with ADHD, such as depressive disorders, anxiety, substance abuse, personality disorders, and bipolar disorders, which can reduce functional capacity. **Methods:** Forty-one adult patients with ADHD were studied. We found a high level of neuroticism dimensions, low levels of conscientiousness and low agreeableness. Relocating these dimensions of personality to a hypothetical competence assessment capacity, we have made several comments on whether these patients would be suitable when exercising certain

powers. **Results:** Having a low level of conscientiousness (lower competence, sense of duty, self-discipline, and achievement need) can lead to lower motivation and less ability to do business (to manage property), conservatorship (guardianship of affairs), whereby a court appoints a substitute decision maker and manager for finances (i.e., managing assets and financial transactions).

Conclusion: Parental capacity and possession of assets may be depleted. Comorbidity with borderline personality disorder and substance disorders may limit these patients' abilities, and if comorbid depression is associated with severe TDAH, then these patients will face further difficulties. It is necessary to assess, along with the patient's competencies, the existence of adult ADHD and possible comorbidities and also see if there is some positive illusory bias.

No. 117

"Delusional Empty Nose Syndrome" as a Presentation of Somatic Symptom Disorder? Case Report and Review of Literature

Poster Presenter: Juliano Victor Luna, M.D., M.Sc.

Co-Author: Clezio Leitao

SUMMARY:

Empty nose syndrome (ENS) is a rare complication of inferior turbinate resection (ITR) characterized by a paradoxical nasal obstruction sensation despite decreased nasal resistance. There are few data on the pathophysiology and diagnostic features of ENS. In this poster, we report the case of a 29-year-old policeman with no prior psychiatric history who developed a delusional conviction of having ENS two weeks after undergoing ITR. Symptoms began after the patient took a short walk in a park and felt "no air flow" through his nose. After a web search, he found a blog about ENS and felt sure of his "condition" and began a "medical quest" by consulting five otorhinolaryngologists, one pulmonologist and one internist, who found no abnormalities in his physical exam. He attributed the medical conclusions to a conspiracy in order to protect the surgeon who had performed his operation and cover up the real diagnosis (ENS). These symptoms escalated to a suicide attempt, after which he was admitted to a psychiatric facility. After release, he was followed by a multidisciplinary

team, including consultation-liaison psychiatrist, psychotherapist, otorhinolaryngologist, and internist, and our diagnosis is of somatic symptom disorder with delusional beliefs. His current prescription is escitalopram 30mg per day and olanzapine 15mg per day. He went back to work, but still complains of “strange sensations” while breathing and refuses to attribute these feelings to a psychiatric condition. Empty nose syndrome (ENS), a term first coined by Kern and Stenkvist in 1994, is a rare yet potentially debilitating complication of inferior turbinate resection (ITR). Although the ENS pathogenesis remains unknown, it is sometimes assumed to merely result from anatomical changes, leading to proposals of nasal augmentation for refractory cases. ENS maybe correlated with psychiatric disorders such as anxiety and depression, but the literature on the subject is scarce. In a PubMed/Embase search across the last ten years, there is no record of delusional phenomena related do ENS or ITR. There is only a case report of ENS being treated as a somatic symptom disorder, but with no psychotic features. This case appears to be the first report of delusional symptoms associated with ENS so far.

No. 118

Psychotic Break After Low-Voltage Electrical Injury(EI): Case Report and Review of Literature

Poster Presenter: Mariana Mello

Co-Author: Juliano Victor Luna, M.D., M.Sc.

SUMMARY:

Background: Electric injury (EI) may lead to behavioral changes and even psychiatric disorders, mostly posttraumatic stress disorder, conversion disorder, adjustment disorders, and depression. Psychotic symptoms are rare and poorly understood consequences of an EI. In this poster, we report the case of a patient with no prior psychiatric history who developed schizophrenia-like symptoms after a low-voltage electrical injury. **Case:** This otherwise healthy 26-year-old male, a married, Protestant, plastic factory worker, suffered a low-voltage (220V) electric shock in his right hand while handling an industrial machine. Immediately after the shock, he didn't lose consciousness or have any focal neurological changes. After three days, he developed auditory hallucinations of persecutory

content, as well as delusions, psychomotor agitation, social isolation, motor stereotypies, and food refusal. He was then admitted to a psychiatric facility and treated with haloperidol 15mg per day, promethazine 50mg per day and chlorpromazine 150mg per day, besides PRN intramuscular haloperidol, diazepam or promethazine. Four days after admission, he presented tachycardia, profuse sweating, and elevated CK, AST/ALT and creatinine levels. He was then transferred to our teaching general hospital due to possible neuroleptic malignant syndrome (NMS). There, he underwent supportive measures and suspension of all antipsychotics. After six days, psychotic symptoms were back and intense. Olanzapine 5mg per day was started, and after six days increased to 10mg per day. MRI was normal. Creatinine and CK levels came back to normality, as well as his heart rate. After 17 days of hospitalization, he was discharged for outpatient follow-up without any psychotic symptoms. So far, our patient remains asymptomatic, still in use of olanzapine 10mg per day. **Discussion:** Time-relation between EI and the onset of psychotic symptoms is well established in this case. One can argue that EI was an organic source of the psychiatric symptoms. On the other hand, the emotional stress caused by EI may have triggered a psychotic episode. Psychiatric morbidity rates following EI vary between 57% to 87.5%. There are, so far, two previous case reports similar to this one. A third case of simple and complex visual hallucinations after a lightning strike in a 23-year-old female has been described as well, but she developed neurological focal involvement due to an occipital lesion. As an altered dopaminergic response to stress may have a role in the onset of psychosis, one may argue that EI was a stressful trigger in a person “vulnerable to psychosis.” Our patient also developed some signs of neuroleptic malignant syndrome NMS, but there was no muscular rigidity or hyperthermia. Maybe it was a milder or atypical case of NMS.

No. 119

Evaluation of a Four-Year Community-Based Mental Health Pilot Project in the Republic of Niger

Poster Presenter: Alison R. Hwang, M.D., Ph.D.

Co-Authors: Julian Eaton, M.B.B.S., M.Sc., Blaise Brou N'Guessan, M.D., Soumana Zamo Pate, Salifou

SUMMARY:

From 2012 to 2015, a pilot project was implemented in two health districts of the Republic of Niger that focused on increasing access to mental health services via existing primary care infrastructure. The project consisted of six major activities: 1) stigma reduction and community education about mental illness (including collaborations with traditional healers); 2) training primary care providers about diagnosis and treatment of psychiatric disorders; 3) epidemiologic data collection on neuropsychiatric disorders; 4) psychotropic medication supply at health facilities; 5) supervision at local, regional and national levels; and 6) formation of a steering committee for ongoing oversight. To evaluate the pilot project, a consulting psychiatrist conducted an annual review, and a multi-day workshop of stakeholders was held in October 2015 to compile the final report. Successes included stigma reduction education, media messaging and increased patient access to care. Trainings were attended by 389 nurses, midwives, physicians, community health workers, traditional healers, primary school teachers, and consumers. Radio broadcasts were circulated in two local languages on 10 stations over two months. The number of new patients diagnosed with neuropsychiatric disorders at health care facilities more than doubled between 2012 and 2014, from 855 to 1,850. Challenges in the project included the need for more qualified staff to train providers in mental health services, medication shortages, data collection, and consumer participation. There are four psychiatrists in the whole country and a high turnover of trained providers outside the capital. Data collection at all levels (local, regional, national) was incomplete; creative ways to ensure data recording in the context of an overextended primary care system will need to be explored. Shortages of psychotropic medications in both pharmacies and at health care facilities led to interrupted treatment for patients. Finally, the formation and training of consumer groups was limited by concerns about stigma in the community. We discuss recommendations based on this evaluation and consider how this project fits into Niger's long-term public health goals.

No. 120

Neuroleptic Malignant Syndrome vs. Syndrome of Neuroleptic Impregnation: A Case Report

Poster Presenter: M. Marta Jalon Urbina

Co-Authors: Leticia Gomez de Segura Iriarte, Carlos M. Rodriguez Mercado, Laura Perez Gomez, Alicia Gonzalez Fernandez, Lara Garcia Gonzalez

SUMMARY:

Background: Neuroleptic malignant syndrome (NMS) is a tetrad of clinical features (fever, rigidity, mental status changes, and autonomic instability) associated with medications that block dopamine transmission. NMS is a rare but potentially life-threatening event that can be seen with all antipsychotic drugs (AD) with a reported incidence rate of less than one to three percent of patients taking these medications. **Case:** A 33-year-old Asian male patient with a past history of multiple traumatic brain injury and diagnosis of epilepsy and organic personality disorder presented to the emergency room with decreased level of consciousness, muscular rigidity and inability to eat. The patient was admitted to the inpatient psychiatric unit with the clinical suspicion of NMS. Prior to the admission, the patient was treated with conventional doses of long-acting paliperidone palmitate and valproate for epilepsy. The patient required intensive care because of the severity of his initial condition. During the admission, the patient suffered a new convulsive episode and was evaluated by neurology. The CT scan of his brain confirmed the chronic brain injury, and neurology recommended treatment with levetiracetam. Long-acting paliperidone palmitate was discontinued without worsening of the psychiatric symptoms. After the washout period, the psychiatric team considered the initiation of antipsychotic treatment with very low doses of oral aripiprazole. The patient was stable and was discharged and followed in the ambulatory setting. **Discussion:** NMS is a rare but serious condition and must be considered when a patient treated with AD presents with mental status changes and muscular rigidity. In the presented case, the patient improved with the discontinuation of long-acting paliperidone palmitate and did not experience hyperthermia or any other typical symptom of NMS. **Conclusion:** The patient did not meet the criteria for NMS, so the final diagnosis was

syndrome of neuroleptic impregnation in possible relation to a different metabolism of AD due to the race of the patient.

No. 121

Fear-Related Behaviors in the 2013–2016 West Africa Ebola Virus Disease Outbreak

Poster Presenter: Zelde Espinel, M.D.

Co-Author: James Shultz, Ph.D.

SUMMARY:

Background: The 2013–2016 West Africa Ebola virus disease (EVD) pandemic was the largest, longest, deadliest, and most geographically expansive outbreak in the 40-year interval since Ebola was first identified. The outbreak qualified as a pandemic, a “natural biological disaster” and a public health emergency of international concern (PHEIC). Two “contagion” processes were operating simultaneously: 1) disease transmission and 2) fear propagation. Fear-related behaviors (FRBs) played an important role in shaping the EVD outbreak. FRBs are defined as “individual or collective behaviors and actions initiated in response to fear reactions that are triggered by a perceived threat or actual exposure to a potentially traumatizing event. FRBs modify the future risk of harm.” **Methods:** A team composed of professionals from the fields of psychiatry, psychology, medical anthropology, global health, public health, complexity sciences, and infectious disease modeling is collaborating to model the contribution of FRBs to infectious disease spread based on retrospective analyses of the 2013–2016 EVD outbreak. This is a critical endeavor because behavioral risks for infectious disease transmission may be prevented or significantly mitigated. **Results:** In the 2013–2016 EVD outbreak, FRBs were implicated in 1) accelerating the spread of Ebola (viral transmission and EVD illness/mortality); 2) impeding the utilization of lifesaving EVD treatment centers; 3) curtailing the availability of medical services for treatable conditions (Preventable deaths from HIV, TB, malaria, and infant/maternal mortality equaled EVD deaths.); 4) increasing the risks for psychological distress and psychiatric disorders; and 5) amplifying the downstream cascades of social problems. FRBs such as avoiding or fleeing treatment units, harboring and caring for patients at home, and performing secret burial ceremonies facilitated

direct contact viral transmission. Preliminary analyses indicate that a high proportion of EVD cases were precipitated by FRBs. The serial nature of person-to-person infectious disease transmission amplified the effects of FRBs on the dynamics of viral spread. Modeling results will be presented that estimate the proportion of the 28,600 cases that were either directly triggered by FRBs or occurred downstream from FRB transmission cases.

Conclusion: This multidisciplinary exercise, incorporating spatiotemporal modeling of disease spread, on-scene observation of behavioral contributions to the risk of viral infection and the “lens” of complex systems thinking, contributes to elucidating the role of FRBs. Infectious diseases generate fear of contagion and amplify FRBs that may increase transmission risks. The 2013–2016 EVD outbreak serves as a laboratory for examination of FRBs in relation to the potential for prevention and mitigation. The team plans to explore the role of FRBs across complex health emergencies and situations of mass threat.

No. 122

Global Mental Health Outreach, Screening and Intervention for Highly-Traumatized Colombian Women “Victims of the Armed Conflict”

Poster Presenter: Zelde Espinel, M.D.

SUMMARY:

Background: As Colombia, South America, transitions to “post-conflict” status following five decades of armed insurgency, eight million citizens are officially designated as “victims of the armed conflict,” including six million internally displaced persons (IDPs). IDPs have been exposed to violence, trauma and loss throughout all phases of forced migration. The Outreach, Screening, and Intervention for Trauma (OSITA) pilot project introduced a three-tiered, stepped-care mental health intervention model for women IDPs in Bogotá. **Methods:** At baseline, 279 women IDPs were recruited and screened for three common mental disorders (CMDs)—major depression, generalized anxiety and PTSD. They were assessed for 43 exposures to trauma and loss stressors during three phases of displacement (12 pre-, 18 peri-, and 13 post-displacement exposures). Participants received psychoeducation tailored to CMD symptom

levels. Women IDPs with moderate/severe symptom elevations on at least one CMD were referred to interpersonal psychotherapy/counseling (IPC). Women with suicidal thought or intent were referred for emergency psychiatric consultation.

Results: Fully 63% of 279 participants had moderate or severe symptom elevations for at least one CMD. Participants endorsed a mean of 24 of the 43 trauma/loss stressors. The total number of trauma/loss exposures had a main effect and predicted higher overall symptom elevations. For women IDPs receiving the IPC intervention, the overall CMD symptom levels decreased over time across three time points: baseline, final IPC session and follow-up. All participants showed significant improvement over time and maintenance of changes through follow-up. Even participants who attended only the baseline screening/psychoeducation session showed significant symptom decreases at follow-up. Participants experienced progressive symptom-level reductions over the course of multiple IPC sessions. Participants with elevated symptoms of depression at baseline displayed significant symptom decreases from baseline to last IPC session and from last IPC session to follow-up. “Task-shifting” of women “victims” hired to serve as OSITA outreach workers/counselors proved to be highly effective. Important study limitations were 1) logistical problems with subject recruitment; 2) high rate of attrition; and 3) high rate of “loss of follow-up.”

Conclusion: For this highly-traumatized population of Colombian women IDPs, all of whom experienced multiple losses due to forced migration, the cumulative burden of trauma/loss exposures predicted the severity of psychopathology. Pilot results for the use of IPC with Colombian women IDPs demonstrate consistent and significant decreases in CMD symptoms. Innovative and multifaceted approaches to outreach are necessary to successfully engage and recruit a geographically dispersed and protectively shielded population of IDP victims of armed conflict. Women survivors of internal displacement proved to be highly effective counselors.

No. 123

Beliefs About Mental and Somatic Illness From the Perspective of Liberian Traditional Healers: Implications for Integrating Etic and Emic

Approaches

Poster Presenter: Samuel J. Pullen, D.O., M.S.

SUMMARY:

Background: The West African country of Liberia has pledged to modernize its health care infrastructure after enduring two brutal civil wars spanning 1989 to 2003 and the subsequent 2014 Ebola outbreak. Liberia has limited internal health care capacity, and modern mental health resources are even scarcer, with only one fully-trained psychiatrist available to serve the country. Thus, traditional healers fill an important gap, especially in areas of the country lacking access to modern health care resources, or areas where they are woven into the fabric of the local population’s cultural belief system. The interface between Westernized (etic) approaches to health care and anthropologic (emic) approaches to health care—particularly mental health care—was the principal theme of this study. We were especially interested in learning about attitudes and beliefs specific to mental and somatic illnesses from the perspective of Liberian traditional healers. **Methods:** A qualitative research design was used to collect data from 24 Liberian traditional healers and 11 native Liberians who sought treatment from a traditional healer. Participants were interviewed using a semi-structured format and were queried about common health problems in Liberia, problem attributions and treatments rendered/received. Content analysis was used to evaluate and aggregate results. **Results:** Recurring problems identified included depression/sadness, “craziness,” hallucinations, epilepsy, open mole, African signs/science, “heart problems,” malaria, infection, injuries, and socioeconomic distress. Spiritual and socioeconomic causes were often attributed to mental health conditions and cultural idioms—African signs, epilepsy, “craziness,” and depression. Symptom clusters attributed to the open mole cultural idiom of distress may represent a mental illness, but did not neatly fit into predetermined diagnostic criteria. Treatments often consisted of herbal remedies and removing curses. Traditional healers used counseling to treat symptoms of depression and sadness. Traditional healers often reported that they would go to the hospital themselves if they were ill, but there was variability in responses as to whether they would refer a

utilizer of traditional medicine for modern health care treatment. Utilizers of traditional medicine described important barriers to accessing modern health care, including travel distance, cultural beliefs about traditional medicine, and lack of access to hospitals and health care providers. **Conclusion:** As Liberia and other developing countries seek to modernize their health system infrastructure, an understanding of traditional beliefs about health care, and mental illness in particular, are necessary, as etic and emic approaches increasingly intersect and are integrated with one another.

No. 124

Advocating Change in the Liberian Mental Health Policy: Challenges and Advantages to Integrating Traditional and Western Medical Practices

Poster Presenter: Augusta Herman

SUMMARY:

Background: Due to violent civil wars spanning 14 years and other sources of trauma, the Liberian government developed a National Mental Health Policy in 2009 to address the mental health needs of Liberians. The policy was developed based upon a rapid needs assessment and uses a Western biomedical framework. However, Liberians receive care from both biomedical hospitals and traditional healers, revealing a gap in the policy and mental health care delivery system. This study sought to understand traditional healing techniques in mental health and the role of traditional medicine in the Liberian health care system, determining that both traditional and Western biomedical traditions need to be integrated in order to develop a robust and all-encompassing health care delivery system.

Methods: Thirty-five semi-structured qualitative interviews with Liberian traditional healers and patients were conducted, asking questions about common health problems, treatments, beliefs, and personal preferences. The interviews were analyzed using NVivo software and a codebook developed and informed by six interview transcripts. Intercoder reliability was established by reviewing one of every five interviews between two coding team members. A content analysis approach was used to extract themes and constructs from the coded data, which were further discussed by the research team.

Results: Many traditional healers specialize in

mental health and treat patients seeking mental health care, particularly for the culturally bound “open mole.” However, traditional healers face several challenges in the current health care system. First, there is little collaboration, though desired by traditional healers, with Western doctors; second, traditional healers feel their practice is considered inferior by physicians. This is corroborated by both patients’ and healers’ personal preferences for hospital treatment, regardless of strong beliefs in traditional medicine due to African culture. Despite these challenges, healers recognize that collaboration is necessary because some diseases are better treated with biomedicine while others are best cared for traditionally, emphasizing that patient safety is of the utmost concern. Additionally, patients felt that accessibility issues, such as money and distance, led patients to traditional medicine. **Conclusion:** Policymakers should consider expanding the Liberian National Mental Health Policy to reflect the role of traditional medicine in the broader health care system. Despite the challenges to integrating traditional and Western practices, such as general preferences for Western medicine and professional tensions, the advantages of cultural synchronization, accessibility and utilization are clear. Considering the evidence, including traditional medicine may help achieve the policy’s goals of providing high-quality, culturally appropriate, equitable, and cost-effective mental health care.

No. 125

Mental Health Care in the Republic of Zambia

Poster Presenter: Anatolii Tsarkov, M.D.

Co-Author: Petro Petlovanyi

SUMMARY:

The Republic of Zambia is a landlocked country in Southern Africa, neighboring the Democratic Republic of the Congo to the north; Tanzania to the northeast; Malawi to the east; Mozambique, Zimbabwe, Botswana, and Namibia to the south; and Angola to the west. The capital city is Lusaka, in the south-central part of Zambia. Zambia’s population in 2015 was 16,212,000. Zambia is significantly ethnically diverse, with a total of 73 ethnic tribes. In 2010, the World Bank named Zambia one of the world’s fastest economically reformed countries. Zambia is officially a Christian nation according to

the 1996 constitution, but a wide variety of religious traditions exist. Traditional religious thoughts blend easily with Christian beliefs in many of the country's syncretic churches. About three-fourths of the population is Protestant, while about 20% follow Roman Catholicism. The official language of Zambia is English, and the total number of languages spoken in Zambia is 73. Zambia offers universal health care to all its citizens. By Western standards, this health care is very basic, and Zambia's public health care system is chronically underfunded. Many Zambian doctors leave the country or work only for the private health system, meaning that public health is subject to a skill drain. HIV/AIDS prevalence rate stands at 14.3%, and it is estimated that between 60% and 70% of TB patients in Zambia are also co-infected with HIV. TB notification rate stands at 353 per 100,000 population. The overall rates for first lifetime contact with mental health outpatient services for all mental disorders has been reported to be 489.7 per 100,000 inhabitants. Almost 32% of treated mental disorders were classified as organic disorder; substance misuse disorders were the second most commonly treated conditions in the inpatient setting (25.5%), followed by mood disorders (22.5%) and schizophrenia spectrum disorders (20%) in 2015. Zambia has no laws specific to mental health care, and there is no monitoring of the quality of care. Several independent bodies monitor human rights in general and some nongovernmental organizations address the human rights of those with mental illness. The professionals involved in mental health care may be classified as follows: medical doctors—medical officers (nonspecialist), psychiatrists (only general division), clinical officer psychiatry—non-degree medical professionals, nurses—general nurses with a specialization in psychiatry, nurses with a bachelor's degree, other health professionals with a degree—psychologists, social workers, physiotherapists, and health workers without a degree—social workers and counseling psychologists. In recent years, Zambia has achieved important results in the organization of its mental health services, but there is still a lot to do in order to achieve sustainability. Developments will focus on the following areas: training, prevention, adequate resources, community-based care, local participation, and integration.

No. 126

Treating Foreign Travelers With Mental Health Crises: A Case Report and Literature Review

Poster Presenter: Phillip H. Dunn

Co-Authors: Therese Ungriano, Benjamin K. P. Woo, M.D.

SUMMARY:

Background: Foreigners with mental disabilities often are not granted access to the United States, which has resulted in a lack of policies and knowledge regarding the treatment of mentally ill patients who are traveling into the country. The noted lack of awareness of this issue brings into question the standardized protocol when dealing with foreign psychiatric patients who may not be able to provide information about their illness. To date, there are few case studies examining foreigners who travel to the United States and face mental health emergencies. **Case:** A 24-year-old male on a travel visa from Mexico was admitted to the emergency room after a violent outburst at Universal Studios. As the patient's family waited in line for a ride, the patient ran away from his family, unprovoked. It took security guards 25 minutes to chase and apprehend the patient to prevent the patient from inflicting harm on others. While being evaluated by the treatment team in the emergency room, the patient was found to be nonverbal, withdrawn, and responding with echolalia, making it difficult for the treatment team to obtain clinical information directly from the patient. Therefore, the patient's medical history was obtained from his mother and family. The patient has a history of autism spectrum disorder and has violent outbursts, which have increased in frequency from once every three months in the past to daily within the past month. The outbursts appear to be random and do not have an identifiable trigger. While the patient did not meet most of his developmental milestones, he was able to feed and clothe himself. At times, he would expose his genitals in public areas due to a lack of impulse control. Due to the patient's continued aggressive behavior, he was transferred to a psychiatric inpatient unit for further management and stabilization. **Discussion:** Physicians treating foreign psychiatric patients face novel challenges that may impede treatment and

outcome. Obstacles to treatment include the lack of medical history, language barriers, involuntary treatment due to psychiatric issues, and a lack of resources to pay for treatment. These barriers can be removed through implementation of policies that suggest foreigners with mental illnesses to purchase health insurance that covers psychiatric and emergency services, as well as recommending travelers to carry medication and information regarding their illness on their person while they are within the country. Additionally, emergency contacts should be included to provide collateral information about the patients.

No. 127

Therapeutic Use of Vodoo/Religion Versus Scientific Therapeutic Use in the Modern Era: Study Conducted From July 1st to August 31st 2016

Poster Presenter: Marie-Ange Jean-Fils

SUMMARY:

Background: Traditional Haitian medicine has been used to treat psychosis throughout the country. We aimed to determine how patients or caregivers decided about where to seek mental health care in Haiti and create a scientific study able to demonstrate the current state of mental health in Haitian society in order to learn how to improve it.

Methods: A descriptive cross-sectional study has been conducted in adult patients (N=70) seen for their first consultation. Via a semi-structured interview, we used a questionnaire designed accordingly and the McGill Narrative Interview (MINI) to collect data from all patients, as well as audio-recorded sessions with a consent form signed.

Results: The majority of patients had prayer sessions in a church or at home (13); a few were hospitalized in a sanctuary; evaluated by ougans, healers or naturalist doctors; and practiced self-medication or use of cultural practices (11). Some had seen doctors (12), but only two went to a private psychiatrist and to Beudet hospital, respectively, while others have done nothing at all (5). The rest of the population has at least been to a doctor after their religious choice and/or cultural. However, 29 people found any result with their different therapeutic choice, 27 found an improvement in symptoms and nine were reported to have had a good result after treatment. Regarding mental health and mental illness, 22

patients/relatives had no idea, 28 did not have an idea in regard to mental health, three said nothing about mental illness, and 12 gave a definition of mental health and mental illness. **Conclusion:** The level of academic training, belief and religious training, economic and social status, social environment, and the absence or lack of knowledge in mental health and mental illness justified the therapeutic choice for patients/relatives having passed the interview during the period mentioned in CHUPNMK. It is only in cases of treatment failure, the reference from a third party or institution, and sometimes after having spent all the savings when they make available recourse to the use of psychiatry as therapy.

No. 128

American Dream Leading to Social Asylum: Darkness in the Valley of Hope

Poster Presenter: Harjasleen B. Yadav

Co-Author: Jacob Sperber, M.D.

SUMMARY:

This is a cogent example of the way traditional arranged marriage combined with immigration to a faraway country with a radically different culture can increase the risk of psychiatric illnesses with tragic consequences. Within traditional cultures in India and Pakistan, arranged marriages have often functioned well to create new generations of family life. There are a variety of ways that such arranged marriages are enacted, with the personal feelings of the two parties having varying degrees of impact. The occurrence of arranged marriage in conjunction with immigration from South Asia to the United States sometimes results in tragic consequences, particularly for the wife. The motive to have dowry can take on exaggerated impact. This case brings to our attention the still existent social inequality being faced by many women in traditional cultures. This report presents the case of a young, educated South Asian immigrant who fell victim to spousal abuse in a complex social and legal situation, thus pushing her into impulsively attempting suicide, in the context of PTSD and a first episode of major depressive disorder. The risk factors include 1) unfamiliarity with spouse; 2) separation from family and community supports in the country of origin; 3) dependence on in-laws for housing and financial

support in the country of arrival; 4) lack of cultural support for individual expectations, aspirations and rights in the new country; 5) unfamiliarity with social and legal support agencies in the new country; 6) racism and discrimination in the new country; and 7) language barrier. Spousal abuse by husband and in-laws in the new country accelerates undetected and uninhibited by the host community, with tragic, traumatic results for the wife. The treatment approach for such patients requires specialized training in terms of cultural sensitivity. In this case, the treatment team put in special efforts to provide counseling and family support during her hospital course. The patient was made aware of the community resources available to her by the social worker at the time of discharge, which included Southeast Asian women's organizations actively working in the United States for welfare of the women. Social rehabilitation and close follow-up by a psychiatrist or counselor is very important in such cases, as these patients are much more prone to developing more depressive episodes, posttraumatic stress disorder, difficulty forming relationships, and risk of future suicide. The Violence Against Women Act passed by the Congress in 1994 has done much in liberating the victims of abuse in terms of their immigration status; however, the burden of reaching out to such victims lays with the social organizations.

No. 129

Mental Health Among Bhutanese Refugees Presenting to University of Virginia Hospital

Poster Presenter: Aditi Giri, M.B.B.S.

SUMMARY:

Nepal and Bhutan, two small countries in South Asia, are among the economically poorest in the world and, as a result, have been linked to emigration of indigenous populations. In the past, citizens of Nepal had settled in Bhutan for several generations but thereafter were systematically driven out due to interethnic conflicts. As of April 8, 2014, about 75,000 Bhutanese refugees of Nepali origin have moved to the U.S. and another 13,770 in other countries, including Australia, Canada, the UK, and Scandinavian countries, with the second largest resettlement being in Canada. Among the Bhutanese refugees of Nepali origin who have settled in the U.S., most have sought refuge or have moved to

larger cities including New York City, Chicago, Syracuse, and St. Louis. Some others have been sent to states such as Texas, Arizona, Maryland, and Virginia. In Charlottesville, VA, a small college town, there are currently around 650 Bhutanese refugees per a census by IRC done in 2013. From 2009 to 2012, there were 16 reported suicides among the 49,010 such Bhutanese refugees resettled throughout the United States, most of them by hanging. Depression, social isolation, domestic violence, substance abuse, and resettlement issues are likely culprits behind suicide attempts and other mental health-related issues. Several studies are underway by the CDC and other partners to better understand why the suicide rate is so high among these refugees. It has been well documented that some of these individuals may have been tortured prior to fleeing Bhutan. Interestingly, while men are more likely to report having been tortured compared to women, tortured women are more likely to report mental health conditions than tortured men. According to the Institute of Medicine (IOM), of the 55,604 refugees examined from December 2007 to December 2011, 1,694 (3.0%) were referred for psychiatric evaluation. Of these, mood disorders, including bipolar depression and major depression, were found to be the most prevalent disorders. Further studies are needed to investigate the role of trauma. A consideration of cultural and religious factors in the understanding of mental illnesses in this population is important and has been studied both in Nepal and the U.S. and provides insight into the perception of mental health and psychiatric illnesses among them. At UVA, a large portion (18%) of the refugee population that is seen at the psychiatric branch of the International Family Medicine Clinic is made of Bhutanese refugees. The most common diagnoses are mood disorders, alcohol abuse, somatic disorder, and PTSD. Compared to other refugee populations, their rate of PTSD is lower, and alcohol abuse is higher. The most common comorbid somatic disorder is chronic pain. The Bhutanese are the refugee population with the least number of missed appointments and also show the most therapeutic improvement. A new qualitative-quantitative study has been started to understand this population further.

No. 130

A Factor Analysis of Hedonic Response Among Mexican Patients With Cardiovascular Disease: REDECAR Study

Poster Presenter: Alvaro Camacho, M.D., M.P.H.

SUMMARY:

Background: Anhedonia, or the loss of capacity to experience pleasure, is a core component of depression. There is a well-known bidirectional association between depression and cardiovascular disease (CVD). Additionally, anxiety is considered a predictor for the development and progression of CVD. Little is known to what extent hedonic capacity and anxiety are present among Mexicans with CVD. Our aim is to determine if anhedonia is an important latent construct present among Mexican patients with cardiovascular disease (CVD). **Methods:** 1,194 participants with CVD from different states in Mexico received the Hospital Anxiety Depression Scale (HADS), which has items that tap into depression, anhedonia and anxiety factors. Exploratory factor analysis (EFA) was used to explain measures of covariance among latent variables of hedonic capacity, depression and anxiety derived from the HADS. Factor loadings in each latent variable were used to interpret construct validity and the degree to which hedonic capacity represents a valid indicator in this sample. Confirmatory factor analysis (CFA) was used to determine the degree to which hedonic capacity represents a valid construct in this sample. **Results:** The mean age of the sample was 57.3 (SD=13.1), and 46% were female. Forty-nine percent had ischemic and five percent had hypertensive CVD. Eighteen percent of women had a HADS-anxiety score of more than 11 (clinically significant), compared to 10% of men ($p<0.05$); eight percent of women had a HADS-depression score of more than 11, compared to four percent of men ($p<0.05$). The EFA scree-test yielded a two-factor solution (eigenvalue >1), accounting for 49% of the total variance (Kaiser-Meyer-Olkin=0.9) of this sample. The two main factors tapped into an anxious and predominantly anhedonic constructs. CFA showed an adequate fit of the two factors, anxious and anhedonic (CFI=0.95; RMSEA=0.05; $\chi^2=331.79$). **Conclusion:** This cross-sectional analysis showed that Mexican patients with cardiovascular disease endorsed predominantly anxious-anhedonic symptomatology. Knowing these constructs helps in

tailoring the necessary psychiatric and psychosocial interventions to improve functionality and rehabilitation targeting a specific spectrum of symptoms.

No. 131

Association of Anxious Depression Symptomatology With Cardiovascular Disease Among Patients From Different States in Mexico: REDECAR Study

Poster Presenter: Alvaro Camacho, M.D., M.P.H.

SUMMARY:

Background: Anxiety and depression are considered independent risk factors for the development of cardiovascular disease. Hispanics have considerable risk factors for cardiovascular disease (CVD) and the development of anxious depression. The association of anxious depression with CVD has not been widely studied in Mexico. **Methods:** Data were collected from 1,180 participants, ages 18–75, from different states in Mexico and classified by the presence (yes/no) of ischemic or hypertensive heart disease as diagnosed by the patient's treating cardiologist. Anxious depression symptomatology was measured by the Hospital Anxiety and Depression Scale (HADS). Other variables collected were demographic (age, gender, level of education), behavioral (physical activity, use of alcohol and tobacco) and biological (BMI, glucose, blood pressure, triglycerides, and cholesterol). **Results:** The mean age was 57.0 (SD=13.5), and 51% were female. The mean scholarship was two years of education (SD=1.24). The mean HADS-anxiety was 5.74 (SD=4.19) and HADS-depression was 3.99 (SD=3.64). Ischemic heart disease was present in 42% of men and 58% of women; hypertensive heart disease was present in 36% of men and 64% of women. Patients with high anxiety were more likely to have hypertensive heart disease (OR=1.03; 95% CI [1.00, 1.07]) relative to those without hypertensive disease. The association remained significant after controlling for demographics, behaviors, BMI, glucose, blood pressure, and triglycerides, yet attenuated after controlling for cholesterol. Depressive symptoms were not associated with hypertensive heart disease. There was no significant association of anxiety and depression symptomatology with ischemic heart disease. **Conclusion:** This cross-sectional study showed that

anxious but not depressive symptomatology is associated with hypertensive heart disease. This association attenuated after controlling for cholesterol. Contrary to other studies, anxious depression is not associated with ischemic heart disease in this sample. Longitudinal studies are needed to further examine the association of anxious states with cardiovascular risk factors among Mexicans living in different states in Mexico.

No. 132

Identifying Factors for Repeat Presentation to the Emergency Department and Readmission to the Psychiatric Unit for Mental Health Needs

Poster Presenter: Rajasekar Basker, L.L.M., M.B.B.S.

SUMMARY:

Background: Multiple factors have been identified that could be the cause for repeated emergency department (ED) presentations and hospitalizations. A pilot study was completed at Windsor Regional Hospital in August 2016 to identify the factors that may have been contributing to repeat presentation to the emergency room and hospitalization.

Objective: Identify the factors that contribute to repeat presentation and readmission rates at Windsor Regional Hospital, which serves a population of about 300,000; the Appropriate Pragmatic Service Provision has to be redesigned to address the multiple contributing factors. **Methods:** The initial pilot study involved 20 patients with the highest presentation to the ED with mental health needs. Most of them were male patients with an average age of 37.8. The patients presented an average of 16.85 times during the period of April 2015 to June 2016. When presenting to the ED, patients had a high utilization of ambulance transport. Following a pilot study, this study was proposed to be conducted in two phases. During the phase 1, a retrospective cross-sectional study will be done during the period of September 2015 through August 2016 to assess the number of repeat presentations at the emergency room and readmitted patients to psychiatric units. A cross-sectional study will be conducted to understand the common contributing factors for such presentations. Individual patient health records will be studied in detail to confirm the same. Following the completion of phase 1, a mapping exercise will be held to stratify

the multiple factors and identify the responsible professional agencies that can be partnered. Responsible agencies and professionals will be involved to design the most pragmatic strategies, which will involve an integrated and collaborative approach. Patients who are high service users will be proactively contacted to discuss the comprehensive care plan and engage with appropriate services. Once the new service provision changes are operational, phase 2 of the study will be completed to study the impact of such strategies. **Results:** A review of hospital records from the pilot study indicated that the highest presentation to the ED for mental health revealed a history of psychological trauma and abuse, comorbid substance abuse, homelessness, lack of access to community support and resources, financial constraints, noncompliance with treatment, and resisting or disengaging treatment recommendations. **Conclusion:** Complex care intervention clinical services have been proposed to proactively assess individual patients, families and other relevant service providers in the community, who will be engaged to design a comprehensive care plan. Ongoing observation will continue to tinker with further robust interventions and amend care planning.

No. 133

CPIP: Promote Screening and Early Detection of Metabolic Syndrome in Patients With Schizophrenia

Poster Presenter: Yu Wei Lee

SUMMARY:

Metabolic syndrome affects around 20–25% of the world's population and is associated with increased risk of stroke, heart disease and death. Patients with schizophrenia were found to have high insulin resistance, impaired glucose tolerance and increased intra-abdominal fat compared to controls and were associated with a greater risk of diabetes mellitus by two to three times, independent of antipsychotic drug use. This highlights the importance of screening for metabolic syndrome in this extremely high-risk group. A random sample of 100 patients in our community wellness clinic—Queenstown—showed that, in the last year, 34 had fasting glucose, 27 had fasting lipids, 96 had blood pressure, 14 had weight circumference, and three had all four parameters checked—a big contrast between recommended and

current clinical practice. To address this discrepancy, we formed a task force to examine the reasons for this and work on possible interventions in order to improve this situation. The aim was to improve complete (all four parameters) screening for metabolic syndrome in all patients in our annual review clinic with a diagnosis of schizophrenia without a preexisting diagnosis of diabetes, hypertension or hyperlipidemia in our clinic from three to 50%. Our fishbone diagram revealed several systemic issues that contributed to the poor monitoring. After applying Pareto analysis, we were able to narrow down the most significant issues. These include difficulties with identifying patients who require blood tests, difficulties with ensuring patients have had blood tests done, and the lack of monitoring for patients who default blood tests. Our intervention period was from October 2015 to April 2016. A list of patients who are currently in our annual review clinic register was extracted from I-PACE (e-monitoring system). Our clinic nurse cross-referenced their existing records to verify if fasting bloods had been performed in the last year. We bundled waist circumference monitoring with existing initiatives for blood pressure and weight to be monitored on every clinic visit. We focused on educating doctors on the importance of screening and created a visual prompt, which was placed on the clinic desk to aid the doctor in educating patients and ordering laboratory tests required to screen for metabolic syndrome. We ensured we obtained a list of patients who met our inclusion criteria and made a change in process whereby a nurse would call patients at least three days in advance of their upcoming appointment, provided fasting instructions, and ordered and completed necessary screening laboratory tests. For those patients who could not be contacted, a reminder note was left for the doctor stating that this patient needs screening for metabolic syndrome and to order relevant investigations. Once patients completed the relevant laboratory tests, an appointment to have next laboratory tests in one year was fixed to ensure yearly monitoring. We were able to improve the complete screening from three to six percent.

No. 134

Guideline for the Treatment of Patients With Nicotine Dependence: Integration in Mental Health

Poster Presenter: Irina Chikvashvili, D.O.

SUMMARY:

Cigarette smoking is currently the foremost preventable cause of death in the U.S. Over 44% of annual deaths from smoking occur among patients with mental illnesses (depression, schizophrenia, substance use disorders, personality disorders). The prevalence of smoking among patients with psychiatric disorders is startling and steadily rising at rates two to three times higher than the general population. Causative factors include 1) biological predisposition (genetic variance; dysregulation of the neuronal nicotinic acid ACh receptor system in the pathophysiology of schizophrenia); 2) psychological means of coping with stress; and 3) stigma by mental health providers, who often assume patients with psychiatric disorders are unable to quit smoking and consequently place symptom management over preventative health measures. There are now both psychosocial and pharmacological means of providing treatment. A strong dose-response relationship exists between the amount of counseling and cessation effectiveness (practical counseling, social support both inside and outside treatment facility). The Stages of Change Model helps providers and patients reinforce that nicotine dependence is a chronic, relapsing disorder; clinicians must repeat prompts at cessation without reserve, especially for patients with psychiatric illnesses. Regardless of the patient's stage of change (Precontemplation, Contemplation, Preparation, Action, Maintenance), the full "5 A's Model" should be used at every patient visit: Ask, Advise, Assess, Assist, and Arrange. The Fagerstrom Test for Nicotine Dependence can be utilized to determine the level of dependence. Six first-line pharmacological agents exist for nicotine dependence: 1) sustained-release bupropion hydrochloride; 2) varenicline; 3) nicotine gum; 4) nicotine inhaler; 5) nicotine nasal spray; and 6) nicotine patch. At least one of these agents should be prescribed in the absence of contraindications. They are cost-effective relative to other disease prevention interventions. In addition to decrease in morbidity and mortality, these interventions also aid in the therapeutic alliance, since it demonstrates to patients that their health is of prime significance to their clinicians.

No. 135**Staggering Appointment Times and Impact on Quality of Encounters: A Pilot Study in a Psychiatric Residential Outpatient Clinic**

Poster Presenter: Robert G. Bota, M.D.

Lead Author: Michael Marcus

SUMMARY:

Health care efficiency is a topic of utmost importance, as it correlates directly with care utilization and associated costs, wait times for patients, and their satisfaction, as well as efficient use of physician time. This project's focus was on psychiatry resident clinics and whether small changes could improve efficiency. Currently, clinics are set up with three residents scheduled to see patients during the same 30 minute intervals from either 8:00 a.m. to 11:30 a.m. or 1:00 p.m. to 4:30 p.m. After patient evaluation, residents review the case with the attending physician and then as a team discuss the final plan with the patient. With this system, we observed delays due to residents often finishing with their respective patients at the same time. This causes both the other resident and their patient to wait longer for the attending. Therefore, patients are often seen late and become frustrated that they were often waiting later than their given appointment time. We hypothesized that by staggering patient appointments for each resident, we would improve overall patient flow and satisfaction and help the residents complete their clinics on time. A single outpatient clinic in an academic institution with three residents and one attending was used for testing. The participants included all patients who consented for the study in an afternoon clinic, with appointments from 1:00 p.m. to 4:30 p.m. These appointments were either 30-minute follow-up or 90-minute initial evaluations. Over a three-month period, residents recorded the times patients checked in, the times they were seen, any waits in staffing with the attending, and how long the subsequent patients were waiting. Following this, one resident's appointment times were staggered, and the other two residents' schedules were unchanged over a three-month block. At the conclusion of this, schedules returned to their standard scheduling time until the end of the academic year. Surveys were given to patients at the

conclusion of the visit and given back to residents at the end of the visit. The outcomes were to measure if there were any differences in resident and patient wait time and patient satisfaction measures. Resident and patient wait times revealed less average wait time for follow-up patients before the intervention of staggering; however, there was less wait time for intakes after staggering. The average appointment times for both follow-up and intake were increased after the staggering. However, none of these values were statistically significant. The two-tailed t-test was performed, and we failed to reject the null hypothesis in every case. The observed difference between wait times is not conclusive enough to indicate that a staggered schedule improved efficiency of time to patients being seen as perceived by the patient's observation. We found there was no statistical difference in any of the parameters evaluated in this pilot study.

No. 136**Folie À Deux Associated With Bipolar Disorder and Induced Suicidality From Physical Separation: A Case Report**

Poster Presenter: Hohui Eileen Wang, M.D.

SUMMARY:

A male in his late twenties with bipolar I disorder was involuntarily admitted to a locked psychiatric unit after being brought in by police from jail with symptoms of mania and persecutory delusions. The patient had been arrested for speeding and charged with possessing a loaded gun. However, on admission, he claimed he had not been in jail, but had been taken to "black sites" where he was tortured. When the patient's wife visited, she corroborated his delusions and demanded his release, insisting his confinement was a continuation of a similar police rendition and torture incident from the previous year. Collateral information obtained from the family and the Internet revealed the couple had been briefly jailed for speeding ten months previously. After release from jail, the patient had disappeared and was found days later wandering aimlessly. He was admitted to a hospital for psychiatric evaluation and treatment of the same delusions mentioned during our hospitalization. At the time, the patient was diagnosed with bipolar I

disorder with psychotic features and discharged with prescriptions for divalproex and haloperidol, which he self-discontinued. During the latter hospitalization, we treated the patient's mania by titrating up risperidone to 8mg and divalproex to 2,000mg. Risperidone was then switched to long-acting injectable paliperidone 234mg intramuscularly. At discharge, the patient demonstrated improvement with resolution of his mania and aforementioned paranoid delusions. During the admission, his wife became suicidal and herself required psychiatric hospitalization due to the trauma of being separated from her husband. Classically, folie à deux describes a shared psychosis between two individuals, a "primary" who fabricates a delusion and a "secondary" who internalizes it. The primary traditionally demonstrates the more dominant personality. Husband-wife, parent-child and sibling dyads are prevalent, whereas typical assumption of the secondary role by females or children is debatable. Primaries often have schizophrenia or delusional disorder; they are less often diagnosed with bipolar disorder, as in this case. For decades, people believed the treatment for folie à deux is separation of the two involved individuals, with the goal of getting the secondary back to reality. However, existing treatment modalities, including separation, pharmacotherapy and psychotherapy, have not demonstrated consistent success. Our case suggests that separating the dyad may elicit unintended and catastrophic emotional trauma, especially for the party who may seem to be the less delusional of the dyad but actually may be more vulnerable. We therefore recommend actively engaging the dyad and treating them simultaneously, with long-term close follow-up ideal.

No. 137

Prevalence of Lithium-Induced Hypercalcemia in an Urban Setting Outpatient Psychiatric Clinic

Poster Presenter: Irina Kogan

Co-Authors: Iuliana Predescu, Sahar Abzakh,

Mahfuza Akhtar

SUMMARY:

Background: Although the first case of lithium-induced hypercalcemia (LIH) was described in 1973, currently only the International Society for Bipolar

Disorders recommends routine calcium screening and monitoring in lithium-treated patients. There is a lack of evidence regarding the patients at risk for hypercalcemia when treated with lithium. The literature review indicates that the prevalence of LIH varies between 3.6 and 60%. LIH is still less well known by clinicians, and the management of these patients is still a matter of discussion. **Objective:** The primary aim of our cross-sectional study is to determine the point prevalence of LIH in the psychiatry outpatient clinic of an inner-city community hospital between January 2014 and January 2017. The secondary aim is to identify possible correlations between calcium levels and the duration of lithium treatment as well as serum lithium level. **Methods:** The population represents all the patients treated with lithium for at least six months between January 2014 and January 2017 who will meet all the inclusion criteria. Data regarding age, sex, race, diagnosis, duration of lithium treatment, lithium dose, past medical history, concomitant medication (since medication such as thiazide/chlorthalidone diuretics, calcimimetics, vitamin D supplements, and calcium supplements can affect serum calcium levels) will be collected. The results of the following laboratory tests, which are routinely done for the patients treated with lithium, will also be collected (reference values between brackets): serum levels of lithium [0.6 to 1.2mmol/l], albumin [3.5–5.0g/dl], creatinine [0.66–1.25mg/dl], BUN [9–20mg/dl], and total calcium level [8.4–10.2mg/dl] after six months of lithium treatment. Each subject will be assigned a number, and no personally identifiable information will be collected. Data will be collected by the research coordinators and entered in a password-protected Excel spreadsheet, accessed by the principal investigator and coordinators only. The prevalence of the LIC will be calculated, and possible correlations will be identified. **Discussion:** The point prevalence hypercalcemia is defined as the prevalence of elevated serum calcium levels within our cross-sectional three-year timeframe. If more than one serum calcium level will be available, the average serum calcium level will be determined and documented. The upper limit of serum calcium accepted as per normal parameters is 10.2mg/dl. The total duration of lithium use is defined as the cumulative period during which lithium was taken by

a patient expressed in months. If the use of lithium had been interrupted, the total duration of treatment reflects the sum of all individual periods. The psychiatrists of the subjects who are found to have elevated calcium will be informed about the study results for further management.

No. 138

Potential of Methylphenidate by General Anesthesia in a Patient With Attention Deficit/Hyperactivity Disorder (ADHD)

Poster Presenter: Amanda Suzuki, M.D.

Lead Author: Hank Lai, M.D.

Co-Authors: Michelle Heare, David Safani

SUMMARY:

Methylphenidate increases norepinephrine and dopamine in the presynaptic nerve terminals by blocking norepinephrine and dopamine transporters. Several in-vivo studies report general anesthesia such as isoflurane, halothane and sevoflurane could potentiate dopamine uptake inhibition, thereby increasing extracellular dopamine in rat models. An in-vivo study of halothane may increase dopamine by increasing general activity in the nigrostriatal pathway rather than by modulation of dopamine release or reuptake mechanisms. Study of another volatile anesthetic, sevoflurane, suggests anesthetic increases dopamine both by blocking dopamine reuptake by the dopamine transporter (DAT) and inducing DAT reverse transport. We report a case of a female with attention deficit/hyperactivity disorder (ADHD) treated with methylphenidate who experienced significant adverse effects with her established dose of methylphenidate after undergoing general anesthesia for bilateral great saphenous vein (GSV) radiofrequency ablation for treatment of symptomatic GSV reflux. Following her procedure, she experienced insomnia, severe anxiety, mood lability, increased psychomotor activity, and racing thoughts. Her symptoms dissipated after significant reduction of methylphenidate. We postulate her inability to tolerate her previously established dose was secondary to stimulant potentiation with general anesthesia. This case demonstrates potential adverse effects associated with methylphenidate use immediately following general anesthesia. Patients with ADHD undergoing general anesthesia may

warrant dose reduction or temporary cessation of methylphenidate postoperatively.

No. 139

The Impact of Long-Acting Antipsychotic Treatment on Functioning: A Case Series From a Community Mental Health Center

Poster Presenter: Cenk Varlik, M.D.

Co-Authors: Dilek Sarikaya Varlik, M.D., Tulay Yilmaz, Mehtap Arslan Delice

SUMMARY:

Nonadherence with oral antipsychotics in patients with schizophrenia has been associated with symptom relapse and rehospitalizations, resulting in increased morbidity and health care costs. Managing nonadherence must be patient specific. Usually, it needs quite a few strategies; however, shared decision making between the patient and physician is virtually always involved. Long-acting injectable antipsychotics (LAIs) were developed to make treatment easier and enhance adherence and/or signal the physician when nonadherence occurs. Although patients with schizophrenia treated with LAIs demonstrated symptomatic improvement, the improvement is not always associated with functional improvement. Well-known additional factors determining poor compliance are side effects (mainly extrapyramidal symptoms), complex treatment plans and misunderstanding of dosage schemes. Considering that the introduction of second-generation antipsychotics (SGAs) partially reduced the incidence of side effects, the development of LAIs should further simplify the dosage plans, thus reducing mistakes and improving the regular intake of medications. It seems clear that SGA LAIs seem to put together the advantages of SGAs with a long-acting formulation. In this case report, we present three schizophrenia patients who were followed by a community mental health center. After switching to SGA LAIs from an oral antipsychotic, the patients' functionality improved evidently. Reasons to switch to LAIs were often side effects or noncompliance to oral treatment. Meaningful differences have been observed between SGA LAIs in the onset of their clinical efficacy and in the relationships between symptoms and functioning scores.

No. 140**Anxiety Sensitivity and Tinnitus-Related Distress: Relationship to Hearing Loss**

Poster Presenter: Junghyun Hannah Lee

SUMMARY:

Background: Tinnitus is the sensation of a ringing or buzzing sound without external stimuli. Over one-third of patients with tinnitus have suffered from psychological distress and showed higher prevalence of mental illness than the general population. Several studies have suggested the different characteristics of tinnitus between patients with normal hearing and those with hearing loss. The aim of this study was to highlight the differences of tinnitus-related distress between normal hearing and hearing loss groups and to assess in relation to anxiety sensitivity trait. **Methods:** We reviewed medical records and self-reported questionnaires of the patients with the symptoms of tinnitus as chief complaints in the Soree Ear Clinic for May 2015 to April 2016. The data collected from 1,818 patients with tinnitus are as follows. Basic demographic data and pure-tone audiogram were collected from the medical records. Patients were administered a self-reported battery of questionnaires, including the Tinnitus Handicap Inventory (THI), Visual Analogue Scale (VAS) for tinnitus symptoms, Hospital Anxiety Depression Scale (HADS), and Anxiety Sensitivity Index (ASI). **Results:** The sample was composed of 809 (44.2%) men and 1,009 (55.5%) women. The mean age was 52.99±15.19 years, and the illness duration was 38.16±73.07 months. Overall, the prevalence of hearing loss was 1,429 (78.6%). Of those with a hearing loss, 1,097 (60.3%) and 332 (18.3%) had unilateral and bilateral hearing loss, respectively. The bilateral hearing loss group showed a higher level of psychological distress ($\beta=0.94$, $p<0.001$) and lower quality of life ($\beta=0.86$, $p=0.014$) than the normal hearing group. Tinnitus handicap score was incremented stepwise according to the severity of hearing loss (unilateral hearing loss $\beta=6.00$, $p=0.011$; bilateral hearing loss $\beta=8.03$, $p=0.014$). In the analysis for overall sample, anxiety sensitivity trait was significantly associated with lower quality of life ($\beta=0.22$, $p=0.046$), higher level of psychological distress ($\beta=0.02$, $p=0.003$) and tinnitus handicap ($\beta=0.41$, $p<0.001$) after controlling for

confounding factors including age, sex, hearing level, duration of illness, and anxiety and depressive symptoms. Within-group analysis and anxiety sensitivity trait showed significant associations with psychological distress ($\beta=0.02$, $p=0.008$) and quality of life ($\beta=0.03$, $p=0.006$) only in the bilateral hearing loss group but not in the normal hearing group.

Conclusion: Our findings suggest that clinical characteristics in patients with tinnitus could be different according to the hearing level. Furthermore, anxiety sensitivity trait might be more related to psychological distress in tinnitus patients with hearing loss rather than those with normal hearing. This study was supported by the Basic Science Research Program through the National Research Foundation of Korea (NRF), funded by the Ministry of Science, ICT and Future Planning (NRF-2016R1C1B1007263).

No. 141**A Fear of Vegetables: A Case Report of Lachanophobia**

Poster Presenter: William Levitt, M.D.

SUMMARY:

A 23-year-old Middle Eastern male came to clinic for treatment of a long-lasting fear of vegetables that has resulted in weight gain, poor health, severe anxiety, and poor quality of life without any known prior life traumas. A cursory review of cases on PubMed revealed no previous research into this subject. The patient's course will be followed as he is treated with either psychopharmacology or psychotherapy or a combination thereof. We will attempt to discover the psychological principles underlying this phenomenon and treatment options for it.

No. 142**Utility of Psychodynamic Psychoanalysis in a Treatment-Adherent Patient With Schizophrenia: A Case Report**

Poster Presenter: Sarah Long

Co-Authors: Ruth S. Rayikanti, Badari Birur, M.D.

SUMMARY:

Psychoanalytic theory, famously proposed by Freud in the early 20th century, is based upon the core principle that we are shaped by early childhood

experiences and unconscious drives. Over time, this therapeutic modality has been met with controversy, fallen in and out of favor by mental health professionals, and further developed into a psychodynamic approach whose basic foundation is largely accepted today. Freud himself did not believe psychoanalysis should be done in a patient with psychotic illness, as his explanation for the disease involved disintegration of the ego as well as a loss of reality/fantasy division, both components ultimately leaving nothing for the therapist to engage with. This is further supported by research studies that show minimal to no evidence of this therapy modality being beneficial in patients with psychotic disorders. Subsequently, psychodynamic therapy is often left behind in favor of antipsychotic medication that can be combined with interventions such as behavioral modification and social skills training. If acute psychotic symptoms have been stabilized and improvement is noted in a patient's insight and ability to engage in therapy, psychodynamic therapy should be considered as a possible component of care. This case report presents a 27-year-old male with a new diagnosis of catatonic schizophrenia during an extended inpatient hospitalization. His initial presenting symptoms of catatonia and disorganized thought content and behavior were stabilized on risperidone. However, residual symptoms of paranoid and religious delusions manifesting in patient-controlled slow cadence speech persisted. Brief psychodynamic therapy was employed over a two-month period with sessions four times per week, during which the patient was able to explore early childhood familial dynamics and sexual confusion in adolescence that shaped personality development and his adaptive behaviors (coping mechanisms), which progressed into his symptoms of psychosis.

No. 143

Family Therapy Provided by Child Fellows on the Inpatient Psychiatric Unit

Poster Presenter: Anand Patel

Co-Authors: Mariam Rahmani, M.D., Kohl Mayberry

SUMMARY:

Inpatient psychiatric units can be effective agents for family change. Arguably, the most integral part of treatment during the child's hospitalization is a

program of formal family therapy. In numerous training programs, as in our child unit at the University of Florida Health Shands Psychiatric Hospital Unit, family therapy is led by one case manager and counseling students. During certain times of the year, such as semester breaks for counseling students and/or vacation/leave time taken by the case manager, family meetings for some patients were unable to be provided. The goal of this project is to train and integrate our child psychiatry fellows at the University of Florida to lead family meetings while on their inpatient rotation. Some barriers to this goal have been that the fellow was assigned to the inpatient unit for half days for some days, and they were not provided a formal curriculum for family therapy to be utilized on the child inpatient unit. We have started implementing this project by increasing the fellow's time on the inpatient unit from 0.6 FTE in 2014 to 0.8 FTE in July 2016. This gives them more time to be physically present on the unit and provide more extensive care to the patients in the hospital. We are measuring the fellow's level of confidence and fund of knowledge in leading family therapy meetings by conducting a pre-survey before they start their inpatient rotation. Fellows will receive didactic seminars on family therapy (at least four to five per year) and receive other resources (books, articles) that will help them provide effective family therapy. The family therapy cases led by the fellow will be processed in supervision with the child attending. Finally, a post-survey will be conducted to again measure the fellow's level of confidence and fund of knowledge in leading family therapy sessions. This project is currently in progress, and we expect that this will help in meeting the child psychiatry fellows ACGME requirements of providing family psychotherapy and family-centered care, as well as improve patient care on our child psychiatric inpatient unit.

No. 144

WITHDRAWN

No. 145

Role of Preventive Psychotherapy in Solid-Organ Transplant Recipients

Poster Presenter: Rana Elmaghraby

Lead Author: Nathan Scheiner

SUMMARY:

Case: Ms. S. is a 29-year-old Caucasian female with recent bilateral lung allograft for idiopathic pulmonary arterial hypertension (IPAH) and a past psychiatric history of major depressive disorder (MDD) with psychotic features and posttraumatic stress disorder (PTSD) who was admitted for stabilization and treatment after a suicide attempt by lorazepam overdose. In the emergency department, she continued to try to swallow lorazepam pills. She was managed on the medical floor and then admitted to inpatient psychiatric services. She considered herself a “failure” and related the unsuccessful suicide attempt as another example of this. She had no goals during her inpatient hospitalization and simply wished her suicide attempt was successful. Prior to transplant, Ms. S. had significantly diminished quality of life due to dyspnea on exertion and chronic fatigue and carried a pre-transplant diagnosis of MDD with psychotic features. She consented to listing for a lung transplant with an expectation of improved quality of life, specifically with regard to her social and work life. Following traumas experienced during surgery, she was diagnosed with PTSD. Her family history is significant for a maternal aunt who committed suicide and a sister with anxiety disorder. Laboratory results were all within normal limits. Ms. S. was on 24 different medications targeting her extensive medical and mental health history. Her medication review was most significant for tacrolimus, aspirin, topiramate, quetiapine, vilazodone, and lacosamide. There were no additional herbal supplements. Mental status exam was notable for a strikingly depressed patient with poor to no eye contact and limited interaction. There was active suicidal ideation with a plan to overdose. In this poster, we present a case of PTSD and attempted suicide in a 29-year-old female who received a bilateral lung allograft due to IPAH. We explore the role, challenges and benefits of anticipatory psychotherapeutic intervention, commonly known as preventive psychotherapy, in solid organ transplant in the context of existing research on post-transplant psychotherapy.

Discussion: Research regarding post-transplant psychotherapy suggests that psychotherapy during Ms. S.’s transplant course may have reduced her morbidity. One perspective in viewing transplant

surgery is that it is a “scheduled trauma.” It has predictable sequelae, and patients can be more adequately prepared for the experience through education and CBT. Preventive psychotherapy should therefore be incorporated into transplant management beginning at the time patients are identified as potential candidates for listing. Therapist involvement need not be limited to the pre-transplant period. Frequent assessment of mental status and permission to discuss the transplant process will ensure early detection of traumas such as those Ms. S. experienced.

No. 146**Pokémon Go and Psychosis: Bringing Augmented Reality to the Forefront**

Poster Presenter: Rana Elmaghraby

Lead Author: Suzanne Jasberg

SUMMARY:

On July 6, 2016, Pokémon Go, a free mobile game application that was developed by Niantic based on an older version created in 1995, was released to the public. This game uses the player’s smartphone camera and GPS to find, capture and collect virtual creatures, called Pokémon. The word “Pokémon” is a contraction of two Japanese words, poketto and monsut, which means “pocket monsters” in English. An important feature of this game is the ability to locate and capture Pokémon in the same environment as the player, an example of augmented reality. In a busy first-episode psychosis clinic, it became apparent that multiple patients were actively engaged in this new gaming platform. One such patient, a 22-year-old Caucasian male with a past psychiatric history of schizophrenia, disorganized type, and prominent negative symptoms developed severe dystonia of the neck and moderate dyskinetic movements on risperidone. He was then cross-titrated to quetiapine with minimal improvement. Due to ongoing abnormal movements and recurrent symptoms of psychosis, he was next established on clozapine. On subsequent outpatient follow-up, he continued to demonstrate improving thought process, but persistent anhedonia, isolation, lack of motivation, and residual movements, which made leaving the house difficult. Upon release of Pokémon Go, the patient showed great interest and began engaging in

the game. He demonstrated remarkable improvement in his negative symptoms, specifically motivation. After six months of social isolation, he began leaving the home with friends and family to play the game and engaged in conversation with others. The patient reported that participating in the game also made him less bothered by his movement disorder. Additionally, the patient noted that he always played the game while turning off the augmented reality option. Anecdotally, it seems as though many patients with similar diagnosis opt to turn off this function of the game. Augmented reality, a unique feature that attracted millions to the game, seems to be of less value to this subset of patients. This poster compares two models of the pathophysiology of hallucinations—bottom-up (data-driven) perceptual processing and top-down (conceptual) processing in perception—as they relate to augmented reality. Furthermore, we will discuss the benefits and challenges of utilizing augmented reality for young patients with first-episode psychosis as a means of therapeutic behavioral activation.

No. 147

Treatments and Interventions to Reduce Psychiatric Inpatient Readmission: A Review

*Poster Presenter: Amanpreet K. Mashiana, B.S.
Co-Authors: Rashi Aggarwal, M.D., James Clark Sherer*

SUMMARY:

Background: Inpatient psychiatric readmission may be as high as 22.4%. Risk factors such as male gender, African-American race, previous admissions, and alcoholism have been associated with readmission. With changes in government policies, lowering readmission rates has become a pressing issue. This literature review investigates studies focusing on interventions to lower psychiatric readmission rates. **Methods:** After screening 138 studies from the last five years, 14 relevant ones were reviewed. Two studies with poor controls were omitted. **Results:** Electroconvulsive therapy (ECT) may be the best treatment to help reduce actual readmission rates. Rehospitalization of both bipolar and schizophrenic patients was reduced with acute ECT followed by maintenance ECT, with admissions dropping from 1.88 before the treatment to 0.38

after. Most medication-related studies were retrospective studies with small sample sizes. The use of valproate with an atypical antipsychotic increases the time to readmission for patients with bipolar disorder by about 30 days compared to patients on lithium and an atypical antipsychotic. Neither aripiprazole nor quetiapine provides an advantage over the other in reducing early readmissions, but they may have side effect profiles that are advantageous in certain populations. For schizophrenic patients, depot forms of medications were no more effective than oral antipsychotics at reducing readmissions. Studies looking at transitional interventions revealed mixed results. There was a 30% overall reduction with case management at a primary care medical home for schizophrenia patients with complex medical problems. Although a selection bias existed, The Brief Critical Time Intervention found a reduction in early readmission rates that dropped from 47% to 28% for high-risk patients. On the other hand, a single nurse model showed greater rehospitalization rates, but there was self-report bias. One study examined follow-up within seven days, and another study looked at the effect of multidisciplinary team and life skills in schizophrenia patients. These longer-term studies found no difference in readmission rates at the end of five years and 12 years, respectively. Studies involving recovery-based interventions in the context of the inpatient setting found a positive impact on readmission rates. The recovery-focused interview approach showed a decrease in early admission rates that went from 41% to 26%. The case managers in this study were not blinded. Looking at a five-year follow-up period, another study saw a 1.1% reduction in readmission rates with every hour spent in an illness management and recovery program. **Conclusion:** ECT, Brief Critical Time Intervention and recovery-focused inpatient interventions have proven useful in reducing readmission rates.

No. 148

Implementing a Nurse-Led Behavioral Intervention in Inpatient Units: An Interrupted Times Series Evaluation Across Three Units

*Poster Presenter: Fredrik Folke
Co-Author: Lisa Ekselius*

SUMMARY:

Background: Hospital-admitted patients are at high risk of becoming passive and socially isolated, and services often fail to engage patients in organized care activity during admission. Such passivity and lack of interaction can interfere with effective inpatient treatment and has been shown to be associated with worse outcomes, suicidal ideation and behavioral disturbance. We aimed to study changes in patient engagement with the treatment milieu during the implementation of a twice daily nurse-led behavioral group intervention. **Methods:** A quasi-experimental interrupted time series design was employed to allow the tracking of changes over time before and after the implementation, as well as at six-month follow-up. Nursing staff training consisted only of onsite observational training. All Swedish speaking patients who had been admitted for more than 24 hours and were able to complete instruments were eligible. Instruments were administered at eight days during each study phase, resulting in 24 assessment points from all three wards. The primary outcome of interest was patients' engagement with the treatment milieu, as measured with the Checklist of Unit Behaviors (CUB). A total of 1,091 admissions were screened, and 525 were included (236 of these were reassessments of previously admitted patients). **Results:** Groups were conducted as planned at a high rate. Patient participation was good, and reports indicated increased use of behavioral strategies. Segmented regression was employed to analyze differences (intercept and trend) in patient engagement between before, after and six-month follow-up. The implementation was associated with a significant increase in patient engagement that remained until six-month follow-up. Avoidance of the treatment milieu decreased from before to after implementation, but the improvement had disappeared at six-month follow-up ($p=0.052$) when adjusting for other variables. Lack of trends in the before phase indicated that time alone was not responsible for the improvement. **Conclusion:** Nurse-led behavioral groups can be successfully implemented after brief onsite observational training only. Results indicate that implementation was associated with increased and lasting patient engagement with the treatment milieu.

No. 149**Successful Treatment of Bipolar Disorder Patients With Transcranial Magnetic Stimulation**

Poster Presenter: Shashank Agarwal, M.D.

Co-Author: Robert McMullen, M.D.

SUMMARY:

Background: TMS is a new nonpharmacological FDA-approved treatment for unipolar major depressive disorder (MDD) but not bipolar depressive disorder (BDD). TMS uses a pulsed magnetic field to focally target neurons in the cortex of the brain. High-frequency TMS excites the neurons under the coil, allowing them to discharge more easily, while low-frequency TMS inhibits neuronal activity under the coil. TMS in BDD has been understudied relative to MDD. There are only a small number of TMS studies in BDD, with mixed results. Therefore, further knowledge regarding TMS efficacy in BDD is necessary. Currently, the literature lacks reports using inhibitory treatment of the right dorsolateral prefrontal cortex (DLPFC) in patients with BDD. The literature that exists suggests that inhibitory treatment to right DLPFC may work as well as left excitatory treatment in unipolar MDD. If excitatory treatment to left DLPFC exacerbates bipolar disorder, perhaps inhibitory treatment to right DLPFC would have an antidepressant effect without causing mania or increasing cycling. **Methods:** We performed a consecutive clinical case series (N=6) of BDD patients who were treated with TMS in an outpatient TMS clinic. All the patients were on mood stabilizers with insufficient benefit for their mood symptoms. Primary outcome was the change in MADRS scores. TMS was administered over the right DLPFC. All patients were carefully monitored for any side effects or treatment-emergent mania. The treatment regimen was 2,000 pulses of 1Hz at 120% of the MT. If this was uncomfortable, we lowered the treatment intensity as necessary. **Results:** All six patients reported benefit in their mood symptoms without any treatment-emergent mania. MADRS score decreased by 24 points, averaging across all patients. **Discussion:** TMS affects neural activity at the site of stimulation and in interconnected distal regions that are implicated in mood disorders, such as the striatum, thalamus and anterior cingulate cortex. Imaging studies of mood disorders point to

dysfunction of the limbic and prefrontal cortex activity. Depression syndromes may be associated with low cortical activity, particularly on the left side, with relative increase on the right side. On the basis of results of unipolar depression studies, it has been established that left-sided DLPFC excitatory TMS stimulation changes neuronal activity of the left cortex by increasing EEG activity, blood flow and metabolism. An activating TMS treatment of the left DLPFC is associated with remission of depression, but it may induce hypomania/mania in these patients, and thus, treatment of right DLPFC seems to show more favorable results. **Conclusion:** This study suggests that low-frequency right DLPFC TMS treatment may be beneficial in BDD patients. Further studies with a higher number of patients and a control arm are required to demonstrate its efficacy.

No. 150

A Literature Review of Remediation in Residency Training: What Works, What Does Not and How It Can Be Improved

Poster Presenter: Pavaani Thiagayson, M.D.

Co-Authors: Ganesh Kudva Kundadak, Kang Sim

SUMMARY:

The residency program has formed the bedrock of medical specialist training in the United States and in some countries abroad. The Accreditation Council for Graduate Medical Education, which accredits the majority of graduate medical training programs in the United States, mandates the use of core competencies, milestones and objective methods of evaluation during residency training to track the residents' progress. However, as part of this appraisal framework, some residents may be found to have failed to satisfy the required objectives of their programs and may be asked to participate in remediation. In this poster, the current process of remediation shall be analyzed. Remediation strategies that have been found to be effective by residency programs for particular deficiencies will be studied. Remediation strategies that have been found to be ineffective will also be examined. New ways of identifying struggling residents and assisting them with their training, in line with learning principles, shall be suggested. We suggest that a multifaceted and holistic approach is most prudent, wherein areas of concern are identified early and

addressed, positive attributes are recognized and nurtured, psychological help and counseling services are engaged, and proactive remediation with regular assessments and constructive feedback is performed.

No. 151

The Relationship Between Noise and Insomnia in a Community-Based Cross-Sectional Study

Poster Presenter: Choongman Park

Co-Author: Jangho Park

SUMMARY:

Background: Exposure to environmental noise has been shown to be associated with sleep disturbance. Insomnia is a common psychiatric disorder and closely related to stress and mood state. The aim of this study is to clarify the influence of noise, stress and mood on insomnia. **Methods:** We conducted a cross-sectional study of a total of 1,863 adults and measured the actual sound levels of noise in two metropolitan cities in South Korea. Subjective noise measurement was also conducted separately for road and air traffic noise. Insomnia was defined as 8 points or higher on the Insomnia Severity Index (ISI). Depression, anxiety and stress response were each administered by the Center for Epidemiologic Studies Depression Scale (CES-D), State-Trait Anxiety Inventory (STAI) and Stress Response Inventory (SRI). We divided the participants into an insomnia group and a normal group to figure out the difference of noise parameters and the consequences of noise exposure between two groups. Odds ratios and 95% confidence intervals were calculated using logistic regression analysis. **Results:** There was no difference in actual levels of noise between the normal group and the insomnia group, but subjective measure of noise was higher in the insomnia group. Compared to the normal group, the insomnia group showed more tinnitus annoyance, had more conflict with the neighborhood, was more influenced by noise while working, and felt more anxious in a quiet environment. After making adjustments for potential confounding factors, the prevalence of insomnia increased along with depression (OR=3.22, 95% CI [1.45, 7.14]) and high level of road traffic noise (OR=1.68, 95% CI [1.01, 2.78]). Neither aircraft noise (OR=1.28, 95% CI [0.94, 1.74]) nor actual levels of noise exposure (OR=1.12, 95% CI [0.82, 1.53]) were

associated with insomnia. **Conclusion:** Our findings suggest that even after considering the effect of psychiatric condition, traffic noise was still associated with insomnia, and people with insomnia are vulnerable to negative consequences of noise. In the future, along with the magnitude of noise and the length of exposure, noise quality needs to be considered when addressing the effect of noise on mental health.

No. 152

A Case of Factitious Hyperglycemia

Poster Presenter: Jessica Goldhirsh

Co-Authors: Nicholas Kopple-Perry, D.O., Boris Fligelman, M.D., Maria Fernanda Gomez, M.D., Marisa Schwartz, R.N., Alex Choy

SUMMARY:

A 22-year-old female with a past medical history of obesity, recent gastric bypass, asthma with more than 20 ICU admissions and nine intubations, a past psychiatric history of sexual abuse, and inpatient psychiatric treatment for major depressive disorder with suicidal ideation was admitted to the medicine service with a new onset of seizures in the context of starting college. A video EEG revealed several episodes of atypical seizure-like movements without correlating epileptiform activity. During hospitalization, the patient had intermittently elevated finger glucose measurements in the 400s, despite normal blood glucose and HgbA1c of 5.6. Administration of insulin after one such elevated finger stick led to an abrupt drop in glucose to 31. On a subsequent finger stick with a result of 461, the nurse noticed a white substance on the patient's finger. After cleaning the finger more thoroughly, the repeat measurement was 77. A retrospective review of the patient EHR revealed a history of multiple medical hospitalizations for somatic symptoms with unremarkable medical workups and documented glucosuria with blood glucose and HgbA1C within normal range. These findings, combined with prior psychiatric evaluations by the consultation service at our children's hospital, which proposed the diagnosis of a somatization or factitious disorder, supported the diagnosis of factitious hyperglycemia. A multidisciplinary meeting with the patient and her mother was held to discuss the diagnosis. The patient's mother became upset

when informed that the patient did not have either epilepsy or diabetes. Her anger intensified after hearing that her daughter had factitious disorder. Both denied being told of this finding previously, although this diagnosis was clearly documented in past psychiatric notes. Given both the patient's diagnosis with glucosuria at age 14 and the mother's angry and disappointed reaction to the diagnosis of factitious disorder, we suspected a likely past diagnosis of factitious disorder imposed on another. However, the current factitious disorder appeared to be self-imposed. Despite having multiple past hospitalizations at the same institution and documentation that her symptoms were believed to be primarily a result of somatization versus factitious disorder, these findings were not clearly documented in discharge summaries. This case highlights the importance of clear documentation of factitious disorders and is a unique presentation of factitious disorder with hyperglycemia. The likely evolution from factitious disorder imposed on another to factitious disorder imposed on self is also unusual. Although there have been numerous cases of factitious hypoglycemia, to our knowledge, this is the first reported case of self-imposed factitious hyperglycemia, diabetes or glucosuria. Prior case reports in which the writers referred to "factitious hyperglycemia" described iatrogenic or artificial, unintentional hyperglycemia.

No. 153

Somatic Symptom Disorder Presenting as Olfactory Hallucinations: A Clinical Challenge

Poster Presenter: Jonathan Lim

Co-Authors: Saba Afzal, M.D., Rashi Aggarwal, M.D.

SUMMARY:

Background: In somatic symptom disorder, patients experience distressing physical symptoms across multiple systems, which cannot be explained by a known medical condition. Few cases have been reported in the literature. Presentations can be heterogeneous, and the condition remains difficult to diagnose due to the variety of symptoms. In this poster, we present a case in which unnecessary interventions and procedures were performed on a patient with somatic symptom disorder who initially presented for abdominal pain and olfactory hallucinations. We also emphasize the diagnostic

challenge, especially in patients without known psychiatric history. **Case:** An 18-year-old Haitian male with no past psychiatric history and a past medical history of rhinitis following nasal surgery presented to the emergency department with a chief complaint of abdominal pain. In the ED, he was afebrile with stable vital signs. On examination, he was noted to have marked abdominal tenderness across all quadrants, but his laboratory findings were all within normal limits. The patient was transferred to the observation unit for further workup. Here, when the patient told the primary team he “could not take these [symptoms],” his remarks were misinterpreted as suicidal ideations and psychiatry was consulted. With the psychiatry team, the patient complained that he could constantly smell human feces and reported that ingesting turmeric was the only way to make the odor disappear. He also complained of muscle aches, chest pain, nausea, and persistent headaches, none of which had been documented by the primary team. The patient was noticeably preoccupied with his symptoms, but lacked insight. Nonetheless, he was convinced that abdominal and otolaryngological surgery would be necessary. Two procedures had already been performed to correct apparent deformities of his nasal septum without any improvement. Chart review revealed an extensive history of emergency room visits for each of his complaints, but no organic etiologies had ever been identified. As per his mother, because of his lengthy hospital stays, he had only attended one week of school all year and would need to repeat the grade. Accordingly, he was diagnosed with somatic symptom disorder and discharged with instructions to follow up with a single psychotherapy provider. CBT and relaxation techniques were also provided. **Discussion:** Extensive workups are often performed to rule out organic etiologies from each of the systems involved in somatic symptom disorder. A preexisting medical condition may be present, but the degree of impairment is more pronounced than would be expected. The nature of this condition often leads to excessive clinical intervention and unnecessary tests. **Conclusion:** It is a challenge to identify, treat and diagnose somatic symptom disorder. Patients often seek care from multiple specialists in multiple settings. Early recognition leading to prompt psychiatric consultation is ideal.

No. 154

Comparison of EEG Coherence Between Somatic Symptom Disorder and Major Depressive Disorder

Poster Presenter: Jae Young Ahn

Co-Authors: Ji Sun Hong, Doug Hyun Han, Kyoung Joon Min, Young Sik Lee, M.D., Ph.D., Baik Seok Kee, Sun Mi Kim

SUMMARY:

Background: Focusing on the high rate of co-occurrence between major depressive disorder (MDD) and somatic symptom disorder (SSD), researchers have investigated the psychobiological commonalities and discrepancies between MDD and SSD. In this study, we compared functional brain connectivity between SSD and MDD using quantitative electroencephalogram (QEEG).

Methods: Fifteen patients with SSD (SSD group), 15 patients with MDD (MDD group) and 15 healthy volunteers (HC group) agreed to participate in this study. Participants were assessed with QEEG using a 21-channel digital EEG system. Differences in inter- and intra-hemispheric coherence values for delta, theta, alpha, and beta bandwidths between groups were analyzed using analysis of variance. **Results:** Intra-hemispheric coherence value for the theta band between F7–T3 electrodes was lower in the SSD group than the MDD and HC groups ($F=6.67$, $p=0.003$). Intra-hemispheric coherence value for the theta band between T5–P3 electrodes was lower in the SSD and MDD groups than the HC group ($F=5.65$, $p=0.007$). Intra-hemispheric coherence value for the theta band between Pz–P4 electrodes was lower in the SSD group than the MDD group ($F=6.41$, $p=0.004$). **Conclusion:** Both SSD and MDD patients commonly showed decreased functional connectivity within the left temporoparietal junction, which has neurophysiological implications for cognitive-attentional processing and social interaction. Dysfunction of the frontostriatal circuit that processes and controls perception and emotion, as well as misperception of somatosensory data in the parietal somatosensory area is more likely to be a neuropathology of SSD than MDD. **Keywords:** Somatic Symptom Disorder, Major Depressive Disorder, Quantitative Electroencephalogram, Coherence

No. 155

Health Care System Cost of Multi-Specialty Diagnostics and Intervention in a Patient With Factitious Disorder

Poster Presenter: Alexander Munjal

SUMMARY:

Ms. Q., a 29-year-old Caucasian female with no reported past psychiatric history, presented to general internal medicine, referred by her outpatient pulmonologist, with recent onset of cough productive of green sputum and shortness of breath. The patient reported a medical history of ciliary dyskinesia with recurrent bronchitis, recurrent sinusitis following corrective surgery, chronic abdominal pain, gastroesophageal reflux disease following Nissen fundoplication, celiac disease, pancreatic insufficiency, hemorrhoids, Brugada syndrome following ICD placement, and malabsorption/malnutrition following gastric tube placement. A lack of objective findings during assessment and even on passive observation by hospital staff raised concern for whether the patient met criteria for inpatient treatment. Subsequently, the patient experienced an episode of hypoglycemia nearly refractory to dextrose infusion. With consideration of workup for insulinoma, it was discovered that she had experienced a similar episode the year before with workup ruling out insulinoma and the discovery of sulfonyleurea metabolites in the urine. Further chart review revealed a lengthy, convoluted history of presentation to multiple specialty clinics with persistently negative or ambiguous workup for many of the patient's reported conditions. Additionally, collateral information from one of the patient's siblings suggested a history of eating disorder and unspecified "mental health problems." During the psychiatric interview, the patient was elegantly guarded, denying the experience of affective symptoms and reporting a generic and remarkably placid, untroubled developmental history. Confronted with the notion that her carried diagnoses might not be the most appropriate to describe her condition, the patient reported improvement in symptoms and left the hospital. This poster examines some of the systemic issues contributing to the continued escalation of

diagnostics and interventions in this patient and estimates a range of cost that was incurred for potentially unnecessary treatment with the purpose of garnering some ways in which excessive consumption of health care resources could be limited and the role that psychiatry can play as a promoter of efficient use of health care resources in the context of the overall system.

No. 156

Childhood Experiences, Adult Attachment Patterns and Psychopathology

Poster Presenter: Geilson L. Santana

Co-Authors: Bruno Mendonça Coêlho, M.D., Yuan-Pang Wang, Laura H. Andrade

SUMMARY:

Background: Humans are naturally prone to strong affectionate bonds, and parent-child relationships act as a matrix for further social interactions. The impact of these patterns is felt across the lifecycle and may influence mental health. The objective of this study is to evaluate if 1) adult attachment is predicted by parental bonding and childhood adversities; 2) attachment insecurity is associated with mental disorders; and 3) attachment mediates the association of childhood adversities and psychopathology. **Methods:** A representative sample of 2,942 adults living in the Sao Paulo Metropolitan Area was assessed with the Composite International Diagnosis Interview, International Personality Disorder Examination, Parental Bonding Instrument, and Hazan and Shaver's Attachment Style Measure. Analyses used regression and structural equation modeling, with adjustment for sociodemographics. Only significant results ($p < 0.05$) are summarized below. **Results:** Childhood experiences were shown to predict the adult attachment style. Secure attachment was associated with emotional closeness to the father (0.05) and paternal affection (0.06) and understanding (0.06) and was inversely associated with physical abuse (-0.13). Avoidant attachment was associated with neglect (0.10) and inversely associated with the death of a parent (-0.11). Anxious attachment was predicted by maternal strictness (0.04), physical abuse (0.11) and parental psychopathology (0.12) and was inversely associated with emotional closeness to the father (-0.05) and affectionate or understanding parents (-0.06).

Attachment influenced the occurrence of psychopathology. Secure attachment decreased the probability of any anxiety (-0.12), mood disorders (-0.12) and cluster A symptomatology (-0.08). Avoidant attachment predicted any anxiety (0.15) and cluster A symptoms (0.17). Anxious attachment was associated with anxiety disorders (0.14), cluster A symptoms (0.05) and borderline personality (0.21). The association between childhood adversities and mental disorders was partially mediated by anxious attachment. **Conclusion:** Adult attachment is rooted on childhood experiences and is more influenced by the father figure than the internalized mother. Attachment security is a general protective factor, and insecure attachment is associated with diverse mental disorders. Anxious attachment acts as a mediator linking childhood adversities and psychopathology during adulthood.

No. 157

Heart Rate Variability and Clinical Characteristics in Female Victims of Domestic Violence

Poster Presenter: Hyunbo Sim

SUMMARY:

Background: The analysis of heart rate variability (HRV) is a useful noninvasive tool to investigate autonomic nerve function. These days, HRV is used in many psychiatric illnesses such as major depressive disorder. However, previous studies on the relationship between HRV and psychiatric illnesses have reported controversial results, and few studies have investigated the relationship between HRV and female victims of domestic violence. The purpose of this study was to investigate demographic data, clinical features and heart rate variability in female victims of domestic violence. **Methods:** A total of 115 female victims of domestic violence in Korea and 24 age-matched normal subjects who had no previous history of major medical and mental illnesses were recruited for this study. A structured interview was used to assess the general characteristics and psychiatric illness. HRV was recorded using SA-6000 (medi-core) for five minutes in the morning. HRV measures were assessed by time domain and frequency domain analyses. Psychological symptoms were measured using the Hamilton Rating Scale for Anxiety (HAM-A), Hamilton Rating Scale for Depression (HAM-D) and

Impact of Event Scale–Revised (IES-R). **Results:** There were no differences in the baseline demographic variables between the female victim group and normal control group. Understandably, the female victim group showed significantly higher HAM-D and HAM-A scores than the normal control group ($p < 0.001$). In all HRV frequency domain analyses, there were no differences in total power (TP), very low frequency (VLF), low frequency (LF), high frequency (HF), and LF/HF ratio between the female victim group and normal control group. In HRV time domain analyses, there were no differences in the standard deviation of the NN interval (SDNN), square root of the mean of the sum of the square of differences between adjacent NN intervals (RMSSD), physical stress index (PSI), or successive RRI difference (SRD) between the female victim group and normal control group. Only approximate entropy (ApEn), a recently developed statistic quantifying regularity and complexity that appears to have potential application to a wide variety of physiological and clinical time series data, was significantly increased in the female victim group compared to the normal control group. (1.05 ± 0.22 vs. 0.93 ± 0.14 , $p = 0.012$). ApEn was correlated with HAM-D ($r = 0.220$, $p = 0.010$) and IES-R scores ($r = 0.192$, $p = 0.042$). **Conclusion:** Female victims of domestic violence showed increased ApEn, one of the HRV measurements, and this ApEn was correlated with HAM-D and IES-R scores. In this study, the analysis of ApEn would be a useful test for female victims of domestic violence.

No. 158

EMDR to Facilitate Posttraumatic Growth: A Prospective Clinical Pilot Study on Ferry Disaster Survivors

Poster Presenter: Sang won Jeon

Co-Authors: Changsu Han, Young-Hoon Ko, Ho-Kyoung Yoon, Seoyoung Yoon, Cheol Min Shin

SUMMARY:

Objective: The purpose of this study was to investigate the therapeutic effects of eye movement desensitization and reprocessing (EMDR) on posttraumatic growth (PTG). **Methods:** This study was conducted using a sample of ten survivors of a major shipping disaster that occurred in the Yellow Sea, South Korea, in April 2014. A total of eight

EMDR sessions were administered by a single clinician at two-week intervals over a period of five months, starting two or three months after the accident. The Posttraumatic Growth Inventory (PTGI), Stress-Related Growth Scale (SRGS), Clinician-Administered PTSD Scale (CAPS), and Connor-Davidson Resilience Scale (CD-RISC) were measured before treatment, after sessions 4 and 8, and at three months after treatment completion. **Results:** After EMDR therapy, significant increases were observed in PTG-associated PTGI ($Z(8)=-2.380$, $p=0.017$) and SRGS ($Z(8)=-2.380$, $p=0.017$) scores and in the resilience-associated CD-RISC score ($Z(8)=-2.386$, $p=0.017$). However, the observed decrease in the PTSD-associated CAPS score was inconsistent across subjects. The PTGI ($ES=1.22$) and SRGS ($ES=1.48$) effect sizes (ES) were larger than those of CAPS ($ES=0.71$). Subjects with higher pretreatment CD-RISC scores showed more significant improvements in PTGI ($\rho=0.88$, $p=0.004$) and SRGS ($\rho=0.83$, $p=0.010$) scores after treatment. **Conclusion:** EMDR therapy helped to facilitate each subject's PTG, although the EMDR was not modified to improve PTG and a standard protocol was used. EMDR can be separately effective for improving PTG regardless of PTSD. EMDR is a reliable method of facilitating PTG.

Monday, May 22, 2017

New Research Posters 1

No. 1

Study to Assess the Utility of Continuous Wearable Sensors and Patient-Reported Surveys for Relapse Prediction in Patients With Schizophrenia

Poster Presenter: Adrienne Lahti

Co-Authors: David White, Nandan Katiyar, Huijing Pei, Susan Baker

SUMMARY:

Background: Relapse in schizophrenia patients is preceded by early warning signs of biological, sensory and clinical status. Identifying such warning signs may enable early intervention and avoid relapse events. This study evaluated the feasibility of using remote sensing devices and electronic patient-reported surveys to identify symptom exacerbation correlates and relapse in patients with high-risk

schizophrenia. **Methods:** In this noninterventional observational study, patients (19 or older) diagnosed with schizophrenia or schizoaffective disorder (*DSM-5* criteria) were enrolled. Patients were provided with remote-sensing devices to monitor activity (Garmin Vivofit fitness band, Vancive patch) and sleep (Philips Actiwatch Spectrum); smartphones (Ginger.io app) were used for patient-reported outcomes surveys. Clinical assessments on symptom management, psychosocial functioning (PANSS, CGI-S), physical activity, and sleep were also performed biweekly. All patients were observed for four months, followed by a 30-day safety reporting period. Relapse criteria included patients having severe, very severe or extreme rating (item score greater than 5) in the previous two weeks in one or more items in the PANSS positive subscale (items P1–P7) or two or more items in the negative subscale (items N1–N7) or patients experiencing symptom exacerbation (increase in PANSS total score) that required a change in antipsychotic medication or dose adjustment. Safety assessments included identifying adverse events (AEs). **Results:** A total of 28 out of 40 patients completed study without relapse. Relapse occurred in three patients, but only one patient was stable and had sufficient post-screening data to establish a reference baseline for device analysis. The range of days each device utilized across all patients provided a maximum number of observable days for each patient-device combination. With this reference, significant data coverage and compliance was observed (Garmin: 97%, Philips: 94%, weekly survey: 88%, Vancive: 83%, bidaily survey: 82%). A total of 35 AEs were reported in 19 (47.5%) patients. The AE of skin irritation was reported in three (7.5%) patients and skin rash in two (5.0%) patients, both of mild intensity. **Conclusion:** Although observations from a single patient do not allow inference of significant correlations with relapse, this study demonstrated that mobile technology could be effectively utilized to monitor relevant schizophrenia symptoms, which could lead to earlier intervention strategies. The study design and operational learnings may provide insights to conduct future studies.

No. 2

The Relationship Between Screening and Post-Baseline Discrepancies Between Negative

Symptoms and Insight in Schizophrenia Clinical Trials

Poster Presenter: Alan Kott

Co-Authors: Xingmei Wang, David G. Daniel, M.D.

SUMMARY:

Background: Identification and remediation of data quality concerns with the potential to impact signal detection before a subject gets randomized should be the primary concern of data quality monitoring programs. We have previously reported that logical incompatibilities in the scoring of PANSS items in the screening period significantly increased the odds and the incidence of the same discrepancies in the post-baseline period. In the current analysis, we assess the relationship between the presence of discrepancies between PANSS negative symptom items and insight in the screening period and after baseline. **Methods:** We operationally defined discrepancies between negative symptoms and insight as occurring when one or more PANSS negative items (N1—N7) were scored a 5 or more and PANSS item G12 (lack of judgment and insight) was scored a 2 or less. Using logistic and negative binomial regression, we have analyzed blinded data from 17 international double-blind placebo-controlled schizophrenia trials involving 10,979 subjects for the presence and incidence of the discrepancies between those subjects who recorded a discrepancy in the screening period compared to those who did not. **Results:** Overall in the dataset, we have identified 6.42% (SE=0.09) of discrepancies between negative symptoms and insight. In the screening period, 9.9% (SE=0.22) of visits were affected, while after baseline, 5.2% (SE=0.10) of visits were affected. In the dataset, the presence of discrepancies in the screening period significantly increased both the odds and the incidence of the discrepancies after baseline (OR=16.3, $p<0.001$; IRR=11.9, $p<0.001$). **Discussion:** Our data indicate strong and significant association between the presence of discrepancies between the negative symptoms and insight before and after baseline. The fact that the majority of post-baseline discrepancies are predicted by the early discrepancies can be utilized in designing intelligent eCOA solutions that would allow identification and remediation of these discrepancies before the subject is randomized into the trial.

No. 3

Baseline Demographics and Characteristics From a Paliperidone Palmitate Study in Subjects With Recent-Onset Schizophrenia or Schizophreniform Disorder

Poster Presenter: Brianne Brown, Psy.D.

Co-Authors: Ibrahim Turkoz, Yong Yue, Larry D. Alphs

SUMMARY:

Background: The early, effective treatment of schizophrenia may slow disease progression and improve overall patient outcomes. The DREaM study (NCT02431702) is a doubly randomized, matched-control, open-label, flexible-dose study designed to compare the efficacy of treatment with paliperidone palmitate (PP) once monthly or once every three months long-acting injection (LAI) versus treatment with oral antipsychotics in subjects with recent-onset schizophrenia or schizophreniform disorder. This poster reports the baseline demographics and clinical characteristics of early enrollees to the study. **Methods:** DREaM includes three treatment phases. Part I consists of subjects who meet the inclusion/exclusion criteria and are entered into a two-month run-in phase to establish the tolerability of oral paliperidone prior to the next phase of study. The primary objectives of part II and III are to examine whether PP LAI can slow disease progression and modify the course of schizophrenia when compared with oral antipsychotics. Baseline demographics and clinical characteristics have been evaluated using descriptive statistics. **Results:** As of September 2016, the study had enrolled 71 subjects with a mean age (\pm SD) of 22.5 ± 3.75 years (range=18–35). The population is predominantly male (90.1%, 64/71); 45.0% of subjects are White and 40.8% are Black. The population has a diagnosis of either schizophrenia (81.4%) or schizophreniform disorder (18.6%). The mean \pm SD number of psychiatric hospitalizations within the prior 24 months is 1.3 ± 1.03 , ranging from zero to four hospitalizations across the population. Histories of antipsychotic exposure, categorized as fewer than six months, 6–12 months, and more than 12 months of use, are 61.4%, 12.9% and 25.7% of the population, respectively. Cumulative substance history, categorized as zero years, two years or less, and more than two years, is 44%, 20% and 36%,

respectively. The mean±SD MATRICS Consensus Cognitive Battery score is 27.8±14.99; 40.4% of subjects had a score of less than 25. The screening mean±SD Personal and Social Performance Scale score is 47.9±15.12 (range=5–80); the majority of these subjects had a score of 31 to 70 (87.3%). The screening mean±SD Clinical Global Impression–Severity score was 5±0.95 (range=3–6). **Conclusion:** This study population’s baseline characteristics and clinical data, which will be used to match subjects in anticipation of randomization for parts II and III, are representative of recently diagnosed patients with schizophrenia, with the exception of the gender distribution. Furthermore, the present data are limited to U.S. recruitment, so they are generalizable only to the U.S. population.

No. 4

Correlation of Caregiver Burden and Baseline Characteristics of Caregivers and Patients in Their Care With Recent-Onset Psychosis: The FIRST Study

Poster Presenter: Branislav Mancevski

Co-Authors: Lian Mao, Katie Ashcroft, Kristy Tardieu, Edward Kim, M.D., M.B.A.

SUMMARY:

Background: Schizophrenia is a chronic, serious mental illness (SMI) that affects approximately 1.1% of the population over 18 years old. Approximately 8.4 million caregivers in the U.S. provide vital support to adults with SMI, but the burden and distress caused by recurrent SMI symptomatology are barriers to effective caregiving. This analysis describes the demographic and baseline characteristics of caregivers and patients in their care with recent-onset schizophrenia, schizoaffective disorder or schizophreniform disorders enrolled in the Family Intervention in Recent-Onset Schizophrenia Treatment (FIRST) study (NCT02600741) and evaluates the correlation between caregiver burden and patient illness severity. **Methods:** FIRST is a 12-month, ongoing, randomized, prospective study to evaluate the effect of a caregiver-directed psychosocial intervention (CDPI) on outcomes in patients with recent-onset schizophrenia, schizoaffective disorder or schizophreniform disorders. The caregivers were randomized into two study groups (usual caregiver support or CDPI). The patients were assessed for

symptom severity (CGI-S). The caregivers were assessed for caregiver burden (IEQ). The study is ongoing, and the current analysis is based on baseline data from 52 patient-caregiver pairs.

Results: Patients were predominantly male (84.6%), were White (57.6%) and Black (36.5%), and had a mean age of 25.3 years; 9.6% were Hispanic. Most patients (88.5%) lived at home with family or friends. Caregivers were predominantly female (76.9%), were mostly parents (86.5%) and had a mean age of 52.4 years. There was a moderate yet significant correlation between the IEQ total score and patients’ CGI-S score at baseline ($r=0.36$, $p=0.011$). The correlation between the total IEQ score and the patient’s or caregiver’s age, gender and race was not significant. **Conclusion:** The interim analysis of the baseline data showed that greater severity of patient illness may contribute to higher caregiver burden.

No. 5

Efficacy of Valbenazine (NBI-98854) in Treating Subjects with Tardive Dyskinesia and Mood Disorder

Poster Presenter: Christoph U. Correll, M.D.

Co-Authors: Richard C. Josiassen, Ph.D., Grace S. Liang, M.D., Joshua Burke, M.S., Christopher F. O'Brien, M.D.

SUMMARY:

Background: Valbenazine (VBZ, NBI-98854) is a novel vesicular monoamine transporter 2 (VMAT2) inhibitor in development for the treatment of tardive dyskinesia (TD). The KINECT 3 study (NCT02274558) evaluated the effects of VBZ on TD in subjects with mood disorder or schizophrenia/schizoaffective disorder (SCHZ, presented separately) who received up to 48 weeks of treatment. **Methods:** KINECT 3 included a six-week, double-blind, placebo (PBO)-controlled (DBPC) period (205 completers); a 42-week VBZ extension (VE) period (124 completers); and a four-week washout period (121 completers). Subjects entering the DBPC were randomized 1:1:1 to once-daily VBZ 80mg, VBZ 40mg or PBO; stable concomitant antipsychotic medication regimens were allowed. Subjects completing the DBPC and entering the VE period were re-randomized (blinded) from PBO to VBZ (80 or 40mg) or continued VBZ treatment at the same dose. Efficacy assessments included mean

changes from baseline in Abnormal Involuntary Movement Scale (AIMS) total score (items 1–7), mean Clinical Global Impression of Change (CGI-TD) scores, AIMS responders (subjects with 50% or higher score reduction from baseline), and CGI-TD responders (subjects with a score of 2 or less [“much improved” or “very much improved”]). Treatment effect sizes (Cohen’s d) and numbers needed to treat (NNTs) were analyzed for DBPC outcomes. **Results:** Efficacy analyses were conducted in 77 subjects (DBPC) and 73 subjects (VE) with a mood disorder. At week 6 (end of DBPC), AIMS mean score improvements were greater in the VBZ groups (in a dose-related pattern) than in the PBO group (80mg, -3.6, d=0.94; 40mg, 2.4, d=0.55; PBO, -0.7). AIMS mean score changes at week 48 (end of VE) showed continued TD improvement during long-term VBZ treatment (80mg, -5.8; 40mg, -4.2). By week 52 (end of washout), AIMS mean scores in both dose groups were returning toward baseline levels, indicating re-emergence of TD. CGI-TD scores showed a similar pattern in week 6 (80mg, 2.7, d=0.64; 40mg, 2.9, d=0.39; PBO, 3.2), week 48 (80mg, 2.0; 40mg, 2.2) and week 52 (80mg, 3.6; 40mg, 2.8). AIMS responder rates (50% or higher score reduction) were greater with VBZ versus PBO at week 6 (80mg, 38.5%, NNT=4; 40mg, 19.0%, NNT=9; PBO, 7.7%), increased at week 48 (80mg, 56.0%; 40mg, 33.3%) and lower after VBZ washout (week 52 80mg, 16.7%; 40mg, 27.8%). CGI-TD responder rates followed a similar pattern in week 6 (80mg, 34.6%, NNT=6; 40mg, 28.6%, NNT=8; PBO, 15.4%), week 48 (80mg, 80.0%; 40mg, 61.1%) and week 52 (80mg, 25.0%; 40mg, 44.4%). **Conclusion:** Sustained TD improvements were found in subjects with a mood disorder who received up to 48 weeks of VBZ, with TD reverting toward baseline severity when assessed four weeks after treatment withdrawal. Together with results from SCHZ subjects and the long-term safety profile, these results indicate that long-term VBZ can be beneficial.

No. 6

The Safety and Tolerability of Lumateperone (ITI-007) for Patients With Schizophrenia: Combined Results From Large Placebo-Controlled Studies

Poster Presenter: Cedric O’Gorman, M.D.

Lead Author: Kimberly E. Vanover, Ph.D.

Co-Authors: Christoph U. Correll, M.D., Steven Glass,

Sharon Mates, Jelena Saillard, Michal Weingart, Robert E. Davis, Ph.D.

SUMMARY:

Background: Acting synergistically via serotonergic, dopaminergic and glutamatergic systems, lumateperone is a first-in-class agent in development for schizophrenia, bipolar depression and agitation of dementia. It is a potent 5-HT_{2A} antagonist, a mesolimbic/mesocortical dopamine phosphoprotein modulator (DPPM) with presynaptic partial agonist and postsynaptic antagonist activity at D₂, a mesolimbic glutamate GluN2B receptor phosphoprotein modulator and an inhibitor of serotonin reuptake. **Methods:** The schizophrenia program includes three large, randomized, double-blind, placebo-controlled trials (‘005, ‘301 and ‘302), two of which included risperidone as an active control (‘005 and ‘302). The primary efficacy endpoint in each study was change on the Positive and Negative Syndrome Scale (PANSS) total score. Safety measures included observed and reported adverse events (AEs), 12-lead ECGs, three-positional vital sign assessments, lab assessments (hematology, serum chemistry and urinalysis), Barnes Akathisia Rating Scale, Simpson-Angus Rating Scale, Abnormal Involuntary Movement Scale, and the Columbia Suicide Severity Rating Scale. **Results:** In all studies, lumateperone had a motoric, metabolic and cardiovascular profile similar to placebo. There were no clinically significant differences from placebo on akathisia or EPS rates. Lumateperone did not significantly alter body weight or levels of prolactin, glucose, insulin, or lipids. The only treatment-emergent AE considered at least possibly related to lumateperone at its efficacious dose at rates of five percent or more and at least twice the placebo rate across all studies was predominantly mild sedation/somnolence. High completion rates were observed for lumateperone patients, and discontinuation rates due to AEs were low and similar to placebo. In the studies, key cardiovascular function measures (including heart rate, QTc and other ECG parameters) were similar between lumateperone and placebo. In the two studies with risperidone as an active control (‘005 and ‘302), lumateperone was statistically significantly better than risperidone on key safety and tolerability measures, including prolactin, glucose, lipids, and

weight. Combined results from all studies will be presented. **Discussion:** Lumateperone represents a new pharmacological approach to schizophrenia with replicated efficacy results without the side effects commonly observed with existing treatments. Administered orally once daily in the morning with no titration required, lumateperone was well tolerated with a favorable placebo-like safety profile. Lumateperone also demonstrated key safety and tolerability advantages over risperidone. Two positive large, well-controlled studies and supportive data from a third study collectively provide evidence of efficacy and safety of lumateperone for schizophrenia.

No. 7

Identifying Potential Biomarkers of Schizophrenia Relapse From a Randomized, Double-Blind, Phase 3 Study of Paliperidone Palmitate Three-Month Formulation

Poster Presenter: Derrek Hibar

Co-Authors: Srihari Gopal, M.D., M.H.S., Maura Furey, Hartmuth Kolb, Ziad Saad, Adam Savitz, M.D., Ph.D., Gallen Triana-Baltzer

SUMMARY:

Background: Immune-mediated changes have been implicated in many psychiatric conditions, thereby offering a potential opportunity for monitoring disease state. In particular, there is a critical need for predicting relapse in patients with schizophrenia to enable early intervention. In this analysis, we explored potential biomarkers in patients who relapsed (paliperidone palmitate three-times-monthly [PP3M] or placebo) compared to biomarkers in patients who remained stable during a randomized, double-blind (DB), placebo-controlled, multicenter, phase 3 study. **Methods:** During the study, patients received PP1M (50–150mg equivalent) during a 17-week transition phase, followed by PP3M (3.5 times stabilized dose of PP1M) during a 12-week maintenance phase. Stabilized patients were randomized (1:1) to fixed-dose of PP3M (175–525mg equivalent) or placebo during the DB phase. Blood sampling for biomarker measurement started from the maintenance phase and every four weeks thereafter through the DB phase until the patient relapsed, withdrew or completed the primary study. The serum biomarkers

analyzed included leptin, adiponectin, mature BDNF, IGF1, cortisol, CRP, TNF α , IL1 β , IL6, IL6R, IL10, gp130, and IL1RA. **Results:** Biomarkers were measured before and after relapse in 14 patients and in 47 patients who were stable (N=19, PP3M vs. N=28, placebo). Of the biomarkers, IL6R showed significant changes from prior-to-relapse to relapse (p=0.05). Cortisol showed the largest difference between PP3M-treated stable patients and those prior to relapse but was not significant. For all biomarkers, one or two patients were outliers (i.e., showed large changes from prior-to-relapse to relapse), suggesting relapse processes may be accompanied by hormonal, metabolic or inflammatory changes that may vary among patients. **Conclusion:** Results of this analysis suggest a potential link to the IL6 receptor signaling pathway and immune function, which may be linked to relapse. Future efforts should focus on exploring the role of IL6R and other pro-inflammatory cytokines in the progression of schizophrenia relapse. This study was supported by Janssen Research and Development, LLC.

No. 8

Needs of People With Schizophrenia/Psychosis and Their Caregivers: Results From a Large-Scale Survey

Poster Presenter: Guillermo Lahera, M.D., Ph.D.

Co-Authors: Jordi Cid, Ana González-Pinto, Ana Cabrera, Inés González, Eduard Vieta, M.D., Ph.D., Celso Arango, Benedicto Crespo-Facorro

SUMMARY:

Improvement in mental health care services is going through a greater involvement of people with mental disorders and their families in everything related to their treatment. For the first time in Spain, a large-scale survey (5,205 people) was carried out to establish the real needs of those directly affected by the illness. Patients and caregivers responded to a nine-question survey concerning personal, social, medical treatment, psychotherapy, and rehabilitation dimensions. For patients, the most important need (an average score of 3.5 on a scale of importance from 1 to 4) was to feel their emotional needs covered. More than 90% of people with schizophrenia/psychosis indicated that this need was “quite or very important.” The following average scores were also obtained: feel well physically (3.42), improve autonomy (3.41), have

leisure activities (3.21), and work/study (3.1). Forty-two percent of patients indicated having little or no freedom over their lives. Association members and users of public psychosocial rehabilitation resources reported less feeling of loss of freedom than those surveyed at hospitals: 35% versus 46%. Thirty-six percent indicated that medical treatment did not start soon enough, 35% that psychotherapy started too late and 13% that they had received no psychotherapy at all. Regarding gender differences, 38% of women (versus 34% of men) considered the psychotherapeutic treatment to have started too late. The help from professionals most valued was providing information about the illness (3.4), dedicating more time (3.4), investigating new treatments (3.3), paying attention to secondary effects (3.3), and incorporating the patient in decision making (3.3). Most patients reported a state of health "regular to good," but 10% indicated not being understood at all in their social environment since onset of illness and 25% being little understood. Regarding perceived health status, people with schizophrenia/psychosis had a mean of 3.29, very similar to their family members/close friends (3.30) on a scale of 1 to 5, these differences being statistically significant compared to the Spanish population: 3.97. The antistigma initiative most valued was to increase investment in schizophrenia in health planning. Another appreciated initiative was to give clear information in the media and no sensationalist news ("very important" for 65% of participants). Integral health planning should incorporate patient insights concerning basic needs and treatment preferences.

No. 9

Metabolic and Endocrine Profiles During One-Year Treatment of Outpatients With Schizophrenia With Aripiprazole Lauroxil

Poster Presenter: Henry A. Nasrallah, M.D.

Co-Authors: Ralph Aquila, Arielle Stanford, Hassan H. Jamal, Peter J. Weiden, Robert Risinger, M.D.

SUMMARY:

Background: We assessed long-term metabolic and endocrine profiles of outpatients with schizophrenia participating in a one-year, open-label extension study of monthly of aripiprazole lauroxil (AL; ARISTADA[®], Alkermes, Inc.), a long-acting injectable

antipsychotic. **Methods:** Patients (N=478) were enrolled in a 52-week, open-label extension study of AL monotherapy administered by intramuscular injection every four weeks. Of these, most (368) received AL 882mg and the remainder AL 441mg as their fixed-dose regimen. Among the patients entering the long-term study, 181 (38%) had already received three prior AL injections. The baseline values for this analysis were obtained from the visit before the first AL injection. Patients were followed for the full year of the extension study unless they discontinued early. Changes in metabolic parameters (weight, fasting blood sugar, lipids) and serum prolactin were assessed over the duration of AL exposure, which could extend to a total of 16 AL injections. Data presented are last observation carried forward from baseline to last visit. **Results:** Most patients remained for most of the follow-up period, with 409 (86%) remaining at six months and 326 (68%) completing the one-year treatment period. The mean changes from baseline in the overall population were +1.1mg/dL (SD=27.5) for glucose, +0.07% (SD=0.6) for glycated hemoglobin (HbA1c), -3.3mg/dL (SD=35.8) for total cholesterol, and -5.3mg/dL (SD=101.9) for triglycerides. Prolactin change from baseline was -8.7ng/mL (SD=14.7) for men and -14.9ng/mL (SD=43.4) for women. Overall, the mean weight change was +0.8kg (SD=5.9). In terms categorical weight change, 88 patients (18%) gained seven percent body weight, and 59 (12%) lost seven percent body weight. Overall, there was no clinically meaningful difference between any of these variables and AL dose. **Conclusion:** Long-term treatment with AL in outpatients with schizophrenia was associated with a modest lowering of serum prolactin for both genders and relatively modest changes in average weight, fasting glucose and HbA1c values. There appeared to be little net change in lipid parameters. This presentation extends a recently published report on the short-term metabolic and endocrine effects of AL over a period of 12 weeks. The present study increased the follow-up period to over a year and was careful to use the first exposure to AL as the baseline. Limitations include lack of a comparison group and difficulty disentangling effects of medication treatment versus factors. Overall, the metabolic, weight and endocrine effects reported here are consistent with

other long-term effects of oral aripiprazole treatment. This study was funded by Alkermes, Inc.

No. 10

Efficacy of Valbenazine (NBI-98854) in Treating Subjects With Tardive Dyskinesia and Schizophrenia or Schizoaffective Disorder

Poster Presenter: John M. Kane, M.D.

Co-Authors: Christoph U. Correll, M.D., Grace S. Liang, M.D., Joshua Burke, M.S., Christopher F. O'Brien, M.D.

SUMMARY:

Background: Valbenazine (VBZ, NBI-98854) is a novel vesicular monoamine transporter 2 (VMAT2) inhibitor in development for the treatment of tardive dyskinesia (TD). The KINECT 3 study (NCT02274558) evaluated the effects of VBZ on TD in subjects with schizophrenia/schizoaffective disorder (SCHZ) or mood disorder who received up to 48 weeks of treatment. **Methods:** KINECT 3 included a six-week, double-blind, placebo (PBO)-controlled (DBPC) period (205 completers); a 42-week VBZ extension (VE) period (124 completers); and a four-week washout period (121 completers). Subjects entering the DBPC were randomized 1:1:1 to once-daily VBZ 80mg, VBZ 40mg or PBO; stable concomitant antipsychotic medication regimens were allowed. Subjects completing the DBPC and entering the VE period were re-randomized (blinded) 1:1 from PBO to VBZ (80 or 40mg) or continued VBZ treatment at the same dose. Efficacy assessments included mean changes from baseline in Abnormal Involuntary Movement Scale (AIMS) total score (items 1–7), mean Clinical Global Impression of Change (CGI-TD) score, AIMS responders (subjects with 50% or higher score reduction from baseline), and CGI-TD responders (subjects with a score of 2 or less [“much improved” or “very much improved”]). Treatment effect sizes (Cohen’s d) and numbers needed to treat (NNTs) were analyzed for DBPC outcomes. **Results:** Efficacy analyses were conducted in 148 subjects (DBPC) and 125 subjects (VE) with SCHZ. At week 6 (end of DBPC), AIMS mean score improvements were greater in the VBZ groups (in a dose-related pattern) than in the PBO group (80mg, -2.9, d=0.88; 40mg, -1.6, d=0.52; PBO, +0.3). AIMS score changes at week 48 (end of VE) showed continued TD improvement during long-term VBZ

treatment (80mg, -4.2; 40mg, -2.5). By week 52 (end of washout), AIMS scores were returning toward baseline levels, indicating re-emergence of TD. CGI-TD mean scores were as follows in week 6 (80mg, 3.0, d=0.11; 40mg, 2.9, d=0.23; PBO, 3.2), week 48 (80mg, 2.2; 40mg, 2.4) and week 52 (80mg, 3.4; 40mg, 3.3). AIMS responder rates (50% or higher score reduction) were greater with VBZ than with PBO at week 6 (80mg, 40.9%, NNT=4; 40mg, 26.2%, NNT=6; PBO, 9.3%), were increased at week 48 (80mg, 50.0%; 40mg, 26.2%) and were decreased after VBZ washout (80mg, 21.6%; 40mg, 9.5%). CGI-TD responder rates followed a similar pattern in week 6 (80mg, 29.5%, NNT=17; 40mg, 33.3%, NNT=10; PBO, 23.3%), week 48 (80mg, 73.7%; 40mg, 58.1%) and week 52 (80mg, 29.7%; 40mg, 33.3%). **Conclusion:** Sustained TD improvements were found in subjects with SCHZ who received up to 48 weeks of VBZ, with TD reverting toward baseline when assessed four weeks after treatment withdrawal. Together with results from mood disorder subjects and the long-term safety profile, these results indicate that long-term VBZ can be beneficial for managing TD.

No. 11

Effectiveness and Tolerability of High Doses of Aripiprazole Once-Monthly in Patients With Severe Schizophrenia: An 18-Month Follow-Up

Poster Presenter: Juan J. Fernandez-Miranda

Co-Author: Silvia Diaz-Fernandez

SUMMARY:

Background: Not only effectiveness but also tolerability of antipsychotics is important to increase treatment compliance, a remarkable problem in patients with severe schizophrenia. The aim of this study was to evaluate effectiveness, tolerability and treatment retention of high doses of aripiprazole once-monthly injectable (over 400mg/month) in patients with severe (GCI-S of 5 and over) schizophrenia. **Methods:** We performed an 18-month prospective, observational study of patients with schizophrenia who underwent treatment with aripiprazole once-monthly at doses of 600mg and over in order to get clinical stabilization (N=8). Assessment of effectiveness included the GCI-S, the WHO-DAS and the Medication Adherence Report Scale (MARS) at the beginning and after three and 12

months of treatment. Drug tolerance was monitored with laboratory tests, weight and adverse effects reported. Other psychopharmacological treatments, hospital admissions and reasons for discharge were registered. **Results:** The average dose of aripiprazole once-monthly was 720mg (110mg). (range=600–800). There were fewer and milder side effects reported than with previous treatments. Weight and prolactin levels decreased. Retention rate in treatment was 100%. After 18 months with high doses, GCI-S scores decreased from 5.3 (0.6) to 4 (0.7) ($p<0.01$), as well as WHO-DAS, in its four areas ($p<0.01$). MARS scores increased from 4.9 (0.7) to 9.7 (0.8) ($p<0.005$). There were no hospital admissions, and there was also a significant decrease in the use of anti-Parkinsonian treatments.

Conclusion: Tolerability of 600mg and over of aripiprazole once-monthly was very good and seemed to be useful in improving treatment adherence in patients with schizophrenia with severe symptoms and impairment, who needed high doses to get clinical stabilization, and helping this way to get better social functioning.

No. 12

Tolerability of Effective High Doses of Paliperidone Palmitate After Three Years in Patients With Severe Resistant Schizophrenia

Poster Presenter: Juan J. Fernandez-Miranda

Co-Authors: Silvia Diaz-Fernandez, Danny F. Frias-Ortiz

SUMMARY:

Background: Tolerability of antipsychotics is important to increase treatment compliance and, consequently, to reach rehabilitation goals in people with severe schizophrenia. The aim of this study was to evaluate effectiveness and tolerability of doses of paliperidone palmitate (PP) of 175mg, equivalent, every 28 days in people with severe schizophrenia (CGI-S of 5 and over) and their retention in treatment. **Methods:** We performed a 36-month prospective, observational study of patients with severe schizophrenia who were treated with 175mg and over every 28 days of PP in order to get clinical stabilization (N=30). Assessment included CGI-S, WHO-DAS, Camberwell Assessment of Need (CAN), and Medication Adherence Report Scale (MARS). Laboratory tests, weight, side effects, reasons for

discharge, and hospital admissions were measured.

Results: The average dose of PP was 228.7mg (11.9mg), equivalent, every 28 days. There was one discharge due to side effects. Weight and prolactin levels decrease. After three years, CGI-S ($p<0.01$), CAN ($p<0.01$) and WHO-DAS scores in the four areas ($p<0.05$) decreased. MARS score increased ($p<0.001$). There were fewer hospital admissions ($p<0.001$). Retention in treatment after 36 months was 90%. **Conclusion:** Tolerability of 175mg, equivalent, and over of paliperidone palmitate every 28 days was very good, being useful in improving treatment adherence in severely ill patients and helping in this way to get clinical stabilization and better social functioning. These patients were clozapine candidates, so high doses of PP could be an alternative for them.

No. 13

Treatment Patterns and Medicaid Spending in Comorbid Schizophrenia Populations: Once-Monthly Paliperidone Palmitate vs. Oral Atypical Antipsychotics

Poster Presenter: Kruti Joshi, M.P.H.

Lead Author: Rhiannon L. Kamstra, M.Sc.

Co-Authors: Dominic Pilon, M.A., Patrick Lefebvre, M.A., Bruno Emond, M.Sc.

SUMMARY:

Background: Once-monthly paliperidone palmitate (PP1M) is a long-acting injectable therapy that may improve adherence and lower medical costs compared to oral atypical antipsychotics (OAA).

However, patients with schizophrenia and physical comorbidities tend to be underrepresented in trials.

Objective: Compare treatment patterns and Medicaid spending between patients with cardiovascular disease (CVD), diabetes, hypertension (HTN), or obesity initiated on PP1M or an OAA.

Methods: Medicaid data (IA, KS, MS, MO, NJ; September 2008 through March 2015) were used to identify adults with schizophrenia initiated on PP1M or an OAA (index date) in September 2009 or later. Patients were grouped according to whether they had one or more diagnosis for CVD, diabetes, HTN, or obesity during the 12 months preceding the index date. Outcomes were assessed during the 12 months following index date. Outcomes were compared using inverse probability of treatment weighting to

address baseline confounding. Treatment patterns included duration of exposure to the index AP (no gap for more than 90 days between claims), use of APs, AP and psychiatric polypharmacy, and adherence (proportion of days covered [PDC]≥80%) and persistence (no gap for 60 days or more) to the index AP. Chi-square and t-tests were used to compare categorical and continuous variables, respectively. Medical and pre-rebate pharmacy costs were compared using linear regression with a nonparametric bootstrap procedure to compute p-values. All costs were inflated to 2015 U.S. dollars.

Results: The following groups were identified: CVD (N[PP1M]=230; N[OAA]=4,071), diabetes (N[PP1M]=420; N[OAA]=5,349), HTN (N[PP1M]=655; N[OAA]=8,974), and obesity (N[PP1M]=194; N[OAA]=2,319). After weighting and during the 12-month follow-up, PP1M patients consistently had longer continuous exposure to the index AP (e.g., CVD: 244 vs. 189 days; $p<0.001$), were less likely to use other APs (e.g., CVD: 53% vs. 64%; $p<0.001$), and were less likely to have AP polypharmacy (e.g., CVD: 21% vs. 28%; $p<0.001$) or psychiatric polypharmacy (e.g., CVD: 63% vs. 70%; $p<0.001$) versus OAA patients. Relative to OAA patients, adherence was more likely in PP1M patients with CVD or obesity (e.g., CVD: 29% vs. 22%; $p<0.001$), similar for HTN patients, and less likely for diabetes patients (PDC≥80%: 22% vs. 24%; $p=0.031$). Across all comorbidities, PP1M patients were more likely to be persistent than OAA patients (e.g., CVD: 50% vs. 27%; $p<0.001$). There was no significant difference in total costs between PP1M and OAA patients for any comorbidity. PP1M patients with diabetes, HTN or obesity had higher pre-rebate pharmacy costs, which were offset by lower medical costs (all $p<0.05$).

Conclusion: Within comorbid populations (CVD, diabetes, HTN, obesity) with schizophrenia, PP1M was associated with less AP polypharmacy and more persistence to therapy compared to OAA. Total health care costs were not significantly different between PP1M and OAA.

No. 14

Adherence, Costs and Resource Use in Schizophrenia Patients With Substance-Related Disorders: Paliperidone Palmitate vs. Oral Atypical Antipsychotics

Poster Presenter: Kruti Joshi, M.P.H.

*Lead Author: Marie-Hélène Lafeuille, M.A.
Co-Authors: Neeta Tandon, M.A., Sean Tiggelaar, M.Sc., Rhiannon L. Kamstra, M.Sc., Patrick Lefebvre, M.A., Yong Yue, Edward Kim, M.D., M.B.A.*

SUMMARY:

Background: Co-occurrence of schizophrenia and substance-related disorders is common and may be associated with higher rates of antipsychotic (AP) nonadherence and poorer clinical outcomes.

Objective: Compare treatment patterns, Medicaid spending and health care resource use (HRU) in schizophrenia patients with substance-related disorders initiated on once-monthly paliperidone palmitate (PP1M) or an oral atypical antipsychotic (OAA). **Methods:** Medicaid data from six states (July 2009 through March 2015) were used to identify adults with schizophrenia and substance-related disorders (drug- and/or alcohol-related disorders) initiated on PP1M or OAAs (index date) in January 2010 or after. Baseline characteristics evaluated in the six months prior to index were compared using standardized differences (Stdifff; 10% or higher considered significant). Adherence (proportion of days covered [PDC]≥80%) and persistence (no gap of 90 days or more) to the index AP and to any AP at 12 months were compared using chi-square tests. The post-index medical and pre-rebate pharmacy costs were evaluated from index date to the first of the end of patient eligibility or end of data availability. Costs were compared using multivariate ordinary least squares regression (mean monthly cost differences [MMCD]). HRU was compared using multivariate Poisson regression (incidence rate ratios [IRR]). Cost and HRU p-values were obtained from a nonparametric bootstrap procedure. **Results:** A total of 351 PP1M and 4,869 OAA patients were included. On average, PP1M patients were younger (mean age=38.4 vs. 41.9 years, Stdifff=30%), less likely to be female (29% vs. 41%, Stdifff=26%) and had a lower Quan-Charlson comorbidity index (mean=0.5 vs. 1.1, Stdifff=36%) at baseline. At 12 months after index, a higher proportion of PP1M patients were adherent on the index AP (PDC≥80%: 29% vs. 18%, $p<0.001$) or on any AP (PDC≥80%: 39% vs. 31%, $p=0.001$) and persistent on the index AP (47% vs. 32%, $p<0.001$) or on any AP (60% vs. 50%, $p<0.001$). PP1M and OAA patients had an average of 37.8 and 39.1 months of follow-up, respectively. During follow-up and after

adjustment, PP1M patients had lower medical costs (MMCD=-\$191, $p=0.020$) but higher pharmacy costs (MMCD=\$250, $p<0.001$), resulting in no significant difference in total health care costs (MMCD=\$59, $p=0.517$). PP1M patients had significantly lower rates of outpatient visits (IRR=0.90, $p=0.036$) and inpatient days (IRR=0.72, $p=0.016$), but had higher rates of mental institute days (IRR=1.34, $p<0.001$) and one-day mental institute admissions (IRR=1.17, $p<0.001$). **Conclusion:** Among Medicaid beneficiaries diagnosed with schizophrenia and substance-related disorders, patients initiated on PP1M were more likely to be adherent and persistent to APs after 12 months and, after adjustment, had lower medical costs during their overall follow-up compared to patients initiated on OAs.

No. 15

Real-World Treatment Patterns of Once-Every-Three-Month Paliperidone Palmitate in Patients With Schizophrenia

Poster Presenter: Kruti Joshi, M.P.H.

Lead Author: Patrick Lefebvre, M.A.

Co-Authors: Marie-Hélène Lafeuille, M.A., Brianne Brown, Psy.D., Willy Wynant, Ph.D., Bruno Emond, M.Sc., Neeta Tandon, M.A.

SUMMARY:

Background: Limited real-world data are available on once-every-three-month paliperidone palmitate (PP3M), a recent therapeutic option for patients with schizophrenia who were adequately treated with once-monthly paliperidone palmitate (PP1M).

Objective: Describe characteristics and treatment patterns of patients with schizophrenia initiating PP3M in the real-world setting. **Methods:** Health care claims from the Symphony Health Solutions' database (May 2014 through September 2016) were used. Included patients had one or more final approved claim for PP3M (the first claim being the index date), 12 months or more of pre-index clinical activity (baseline period), and one or more schizophrenia diagnosis (excluding schizoaffective disorder). Patients also followed the recommended PP1M dosage and administration specified on the prescribing information: no gap of more than 45 days in PP1M coverage four months prior to PP3M initiation, same dosage strength for the last two PP1M claims prior to PP3M initiation, and adequate

dosage conversion between the last PP1M and the first PP3M claim. Baseline adherence to any antipsychotics was defined as proportion of days covered (PDC) of 0.8 or higher, and health care resource utilization was evaluated during the four quarters of the baseline period. Treatment patterns were described using means and standard deviations (SD) for continuous variables and frequencies and proportions for categorical variables. **Results:** A total of 1,064 patients were identified (age under 35 years: 34%, age over 55 years: 22%, males: 66%). Before initiating PP3M, patients had on average 9.8 (SD=3.3) claims of PP1M during baseline, with 31.5 (SD=7.6) days between consecutive PP1M claims. There was on average of 26.9 (SD=13.9) days between the last PP1M and the first PP3M claim. In baseline quarters closer to PP3M initiation, adherence to any antipsychotic increased (from 46% to 82%), as well as adherence to anxiolytics and mood stabilizers, while the average number of inpatient and emergency room visits per month decreased from 0.03 to 0.01 and 0.08 to 0.06, respectively. Most patients (56%) had a last PP1M dosage of 234mg and a first PP3M dosage of 819mg, while 30% had a last PP1M dosage of 156mg and a first PP3M dosage of 546mg. A total of 795 patients (75%) had four months or longer of follow-up after the first dose, of which 699 (88%) had a second dose. The strength of this second dose was identical to the first one in 98% of the cases. Similarly, 513 patients (73%) had four months or longer of follow-up after the second dose, of which 90% had a third dose, which had the same strength as the previous dose for 97% of the patients. Among patients with more than three PP3M claims, there were on average 87.0 (SD=18.5) days between subsequent PP3M claims. **Conclusion:** Higher adherence to antipsychotics and lower health care resource utilization were observed closer to PP3M initiation. Patients using PP3M were persistent on their treatment and received a stable dose over time.

No. 16

A Systematic Review of the Clinical and Health-Economic Burden of Schizophrenia in Privately Insured Patients in the United States

Poster Presenter: Kruti Joshi, M.P.H.

Co-Authors: Tony Amos, Pharm.D., M.S., Stephen Gutkin, Wenjie Zhang, Ph.D., Nicole Lodowski, M.P.H.

SUMMARY:

Objective: Systematically identify real-world evidence on the clinical and health-economic burdens of schizophrenia in privately insured U.S. patients. **Methods:** We conducted an Embase/Medline search of peer-reviewed journal articles in the English-language clinical and health-economic literature published from 2006 to 2016. Other criteria for full article review included studies reporting populations of more than 100 patients with schizophrenia and a complete private insurance population or analysis stratified by insurance type. **Results:** Twenty-five studies (N=81,853 patients) met eligibility criteria and were included. Compared to controls with no mental disorder claims, patients with schizophrenia had significantly increased odds ratios (ORs) for conditions that can adversely affect clinical outcomes. These included alcohol (OR=12.6) and illicit substance abuse (OR=35.4; each $p<0.05$) and systemic disorders (renal/hepatic/endocrine; OR=2.0 for most; each $p<0.05$). Difficulties in coping within the first year after incident schizophrenia may be reflected by a two- to five-fold increase in frequencies of alcohol or drug dependence (or substance abuse) and suicidal behaviors in recently diagnosed (vs. chronic) patients. Antipsychotic (AP) adherence was reported to be low, ranging from 31.5% to 55.4% among privately insured patients with schizophrenia. Compared to early adherent patients, early nonadherent patients had significantly more hospitalizations (mean=0.57 vs. 0.38; $p=0.0006$) and a higher mean length of stay (LOS; 5.0 vs. 3.0 days; $p=0.0013$) during up to 12 months of follow-up. Compared to the 12-month period before initiating long-acting injectable (LAI) APs, follow-up 12-month adherence (by the medication possession ratio) increased from 0.40 to 0.67 ($p<0.001$). Mean all-cause hospitalizations decreased from 1.60 to 0.7 days, and schizophrenia-related hospitalizations decreased from 1.03 to 0.43 days (each $p<0.001$). Corresponding decreases in LOS after (vs. before) initiating LAI APs were 10.3 days for all-cause hospitalization and 7.5 days for schizophrenia-related hospitalization (each $p<0.001$). In a pre-post analysis, patients initiating LAI APs had decreased mean all-cause hospitalization costs (\$7,518 vs. \$14,976 [-\$7,458]) and schizophrenia-related hospitalization costs (\$4,109 vs. \$10,089 [-

\$5,980]; each $p<0.001$). Despite these benefits, only 0.25% to 13.1% of privately insured patients with schizophrenia were treated with LAI APs.

Conclusion: Patients with schizophrenia face substantial clinical and economic burdens related to acute-care needs and nonadherence. While studies demonstrate the value of LAIs in reducing hospitalizations and medical costs, only a small proportion (<14%) of privately insured U.S. patients with schizophrenia are treated with LAIs.

No. 17

Cost Reduction of Switching to Long-Acting Injectable Paliperidone in a Sample of Psychotic Patients: Results From a Mirror Study

Poster Presenter: Luis Jimenez-Trevino

Co-Authors: Javier Caballer-Garcia, Aida Garcia-Rua, Esther Torio-Ojea, Marino Montes, Juan Carlos Ortigosa, Inmaculada Serrano-Quintana, Emilio Sotomayor, M. Angeles Paredes-Sanchez, Maria Suarez Alvarez

SUMMARY:

Background: Hospitalization costs have been shown to be the highest medical costs associated with the management of schizophrenia patients in Spain; thus, strategies to improve adherence to long-term treatment are relevant to both clinical and economic interests. The use of long-acting injectable atypical antipsychotics has the potential to increase the total cost of the disease as a result of their relatively high price, but recent data suggest a higher efficacy in reducing hospitalization rates and lengths of stay compared to other treatment options.

Consequently, these higher-priced treatments could mean lower management costs for the process in the long term, leading to a better cost-effectiveness approach. **Objective:** Calculate hospitalization costs after switching to long-acting injectable paliperidone palmitate (PP-LAI) in a clinical sample. **Methods:** We conducted a mirror image study of outpatients diagnosed with psychotic, affective, personality, and substance use disorders after switching to PP-LAI from oral antipsychotics, classic depot antipsychotics and risperidone LAI. **Results:** This analysis included 148 patients treated with PP-LAI (mean age=46.72, 64.9% male). Mean time of PP-LAI treatment was 627.05 days, and mean dose of PP-LAI was 109.18mg. The most common diagnosis was

schizophrenia (48.0%). In the time period before initiation of PP-LAI, 31.8% of patients were hospitalized, totaling \$479,337.50 of hospitalization costs for all the patients, with an average of \$3,238.77 per patient. After switching to PP-LAI, only 11.5% patients needed hospitalization, totaling \$154,325.00 and an average of \$1,044.76 per patient in hospitalization costs. That's a total reduction of \$325,012.50 in hospitalization and a mean reduction of \$2,194 per patient (T test=4.220; p=0.000). Regarding previous treatment, reduction in hospitalization costs was higher among previously untreated patients (\$5,566.50 per patient) and lower among people switching from classic depot antipsychotics (\$1,046.69 per patient) (ANOVA=1.05; p=0.372) Regarding diagnostic groups, cost reduction was higher among patients suffering from substance abuse and personality disorders (\$4,535.66 and \$3,401.75 per patient) and lower among patients with psychotic and bipolar disorders (\$1,960.64 and \$1,608.10 per patient) (ANOVA=0.694; p=0.557). **Conclusion:** Our results show that switching antipsychotic treatment to PP-LAI is effective in terms of reducing hospitalization costs. This reduction depends on previous treatment options as well as on diagnostic issues. The effectiveness of a switch to PP-LAI seems higher in patients with poor adherence and disorders such as substance abuse and personality disorders.

No. 18

Efficacy and Safety of Paliperidone Palmitate Three-Month Formulation for Relapse Prevention of Schizophrenia: A Number-Needed-to-Treat Analysis

Poster Presenter: Maju Mathews

Co-Authors: Isaac Nuamah, Adam Savitz, M.D., Ph.D., Srihari Gopal, M.D., M.H.S.

SUMMARY:

Background: In a randomized clinical study, paliperidone palmitate three-month formulation (PP3M) significantly delayed time to relapse in patients with schizophrenia. The hazard ratio comparing PP3M with placebo was 3.45 (95% CI [1.73, 6.88]), demonstrating superiority of PP3M in preventing relapse. Some common treatment-emergent adverse events were extrapyramidal symptoms (EPS), akathisia, headache, weight gain, nasopharyngitis, and use of anticholinergic

medications. Number needed to treat (NNT), number needed to harm (NNH) and the likelihood of being helped or harmed (LHH) analyses provide an alternative approach to assess the magnitude of treatment effect and tolerability. These can provide valuable additional information on therapeutic gain.

Methods: Number needed to treat to prevent relapse at months six and 12 was calculated using data from the double-blind (DB) phase of a randomized clinical trial (NCT01529515) of PP3M versus placebo. Number needed to harm was calculated for overall EPS, akathisia, headache, weight gain, nasopharyngitis, and use of anticholinergic medications during the DB phase. Likelihood of being helped or harmed (LHH) was also calculated. **Results:** The NNTs to prevent relapse at months six and 12 were 4.1 (95% CI [2.6, 9.4]) and 2.3 (95% CI [1.4, 7.1]) for PP3M, respectively. NNHs reported for overall EPS, akathisia, headache, weight gain, nasopharyngitis, and use of anticholinergic were 21.4, 27.1, 21.7, 18.9, 23.6, and 43.8, respectively. LHH for preventing relapse versus EPS, akathisia, headache, weight gain, nasopharyngitis, and use of anticholinergic were 9.2, 11.6, 9.3, 8.1, 10.1, and 18.8, respectively. **Conclusion:** The single-digit values of NNT to prevent relapse suggest that PP3M could benefit patients. Similarly, the relatively high NNH value suggests that the risk of EPS and other common adverse events is reasonably low. Overall, NNT, NNH and LHH values for PP3M were comparable to other long-acting injectable antipsychotics, as reported in existing literature.

No. 19

Effects of Cariprazine in Comparison to Aripiprazole on Dopamine Hypofunctionality in Brain Cortical Areas and Social Interaction Behavior in Rats

Poster Presenter: Nika Adham, Ph.D., M.Sc.

Co-Authors: Fu-Hua Wang, Fumio Ichinose, Shimako Yoshitake, Takashi Yoshitake, Béla Kiss, M.Sc., Bence Farkas, Jan Kehr

SUMMARY:

Background: Cariprazine (CAR) is a potent dopamine (DA) D3/D2 receptor partial agonist with preferential binding to D3 receptors that is approved for the treatment of schizophrenia and acute manic or mixed episodes associated with bipolar I disorder. The negative and cognitive symptoms of

schizophrenia may be related to a reduced dopaminergic tone in cortical brain areas. Dopamine D3 receptor stimulation plays a role in this cortical dopaminergic hypofunctionality and may be the neurochemical basis impacting social behaviors and cognitive functions in schizophrenia. This study evaluated the ability of CAR and the D2/D3 receptor partial agonist antipsychotic aripiprazole (ARI) to counteract the reduction in dopaminergic neurotransmission and behavioral effects in a social interaction model (huddling) induced by the D3-preferring D3/D2 receptor agonist (+)-PD 128907. **Methods:** Rats received vehicle or (+)-PD 128907 (0.16mg/kg subcutaneously) and either vehicle—CAR (0.1, 0.3 or 1.0mg/kg by mouth) or ARI (20mg/kg by mouth). Behavioral effects of the drugs were evaluated by assessing time spent huddling for 90 minutes after treatment. Neurochemical effects were evaluated in separate groups of awake rats by inserting dialysis probes into the medial prefrontal cortex (mPFC) and nucleus accumbens shell (NAcc) of each rat and collecting samples for 180 minutes following drug administration. Levels of DA and its metabolites DOPAC and HVA were determined using HPLC-ED. **Results:** All doses of CAR significantly inhibited (+)-PD 128907-induced suppression of huddling behavior in the first 10-minute period ($p < 0.001$), as did ARI ($p < 0.05$), indicating that the doses used for the compounds were pharmacologically active. Based on calculation of AUC values for 0–180 minutes, CAR (1.0mg/kg) significantly inhibited the (+)-PD 128907-induced decrease in DA levels in the mPFC ($p < 0.05$) and NAcc ($p < 0.001$); significant inhibition of the (+)-PD 128907-induced decrease in DA levels was observed with ARI ($p < 0.05$) in the NAcc, but not in the mPFC. Cariprazine significantly increased DOPAC and HVA levels in both the mPFC (1.0mg/kg, $p < 0.001$) and NAcc (0.3mg/kg, $p < 0.05$ and 1.0mg/kg, $p < 0.001$). Aripiprazole increased DOPAC and HVA levels significantly in the NAcc ($p < 0.01$ and $p < 0.001$, respectively), but not the mPFC. **Conclusion:** These data provide further in vivo evidence for CAR acting preferentially via the DA D3 receptors over the D2 receptors in a brain region involved in cognitive functions; in the rat prefrontal cortex, CAR, but not ARI, counteracted the effects of the D3/D2 receptor agonist (+)-PD 128907 on decreased dopamine levels. The findings suggest that by counteracting

cortical dopaminergic hypofunctionality, CAR may offer therapeutic benefits against a broad range of symptoms of schizophrenia and bipolar disorder, including cognitive deficits and negative/depressive symptoms. This research was supported by Forest Research Institute, Inc.

No. 20

A Proposed Algorithm for Managing Clozapine-Resistant Psychosis

Poster Presenter: Randall F. White, M.D.

Co-Authors: Geoffrey N. Smith, Jennifer Li, Harish Neelakant, Subu Ponnachana, Ric Procyshyn, Alasdair Barr, William G. Honer

SUMMARY:

Although clozapine is the standard for treatment-resistant psychosis, 40–60% of those treated with clozapine do not have an adequate response, as measured by a 20% or greater reduction in the BPRS, PANSS or other assessments. This condition is known as clozapine resistance, ultra-resistance or refractory psychosis. At the publicly funded BC Psychosis Program at UBC Hospital in Vancouver, Canada, we have developed criteria to identify clozapine resistance (CR) and an algorithmic approach to treatment based on available evidence. This involves ensuring adequate clozapine treatment verified by dose and serum level, including addition of fluvoxamine when appropriate; offering ECT to CR patients; and/or antipsychotic augmentation preferably with sulpiride or aripiprazole. A graphic representation will be provided. All patients admitted since program inception in February 2012 have failed at least two antipsychotic trials. A psychiatrist, social worker, pharmacist, nurse, general physician, and neuropsychologist evaluate each patient. All available summaries of previous psychiatric admissions are reviewed, and medical, pharmacological, social, and behavioral histories are recorded. All information is presented at a case conference, and a *DSM-IV* or *DSM-5* multiaxial diagnosis reflects agreement among at least two psychiatrists and a psychologist. Symptom ratings included the Positive and Negative Syndrome Scale (PANSS), the Global Assessment of Functioning (GAF), and the Clinical Global Impression-Severity and Improvement scales (CGI). Clozapine resistance is defined by an adequate trial, i.e., 500mg daily

dose for 60 days or one therapeutic serum level, and continued symptoms manifested by PANSS with two positive scale items rated 4 (moderate) or one item rated six (severe). Of 101 patients with schizoaffective disorder or schizophrenia on clozapine at admission, 77 had received it for 60 days; 18 were on 500mg, and 17 met criteria for clozapine resistance—14 men and three women. Of these, 14 had schizophrenia and three schizoaffective disorder; the mean age was 39.8 years. The mean PANSS scores at admission were 27.3 (positive), 25.2 (negative), 49.6 (general), and 102 (total); the mean CGI-S was 6.2. Of 12 patients with complete data, six were offered ECT, and three accepted a course; the number of ECT treatments ranged from 19 to 46. Of 15 patients discharged to date, 13 remained on clozapine with a mean dose of 463.5mg; in order to obtain a therapeutic clozapine level, six received fluvoxamine, dose range 37.5 to 200mg. Seven patients received adjunctive antipsychotics: two sulpiride, two aripiprazole, one loxapine, one haloperidol, and one flupentixol. At discharge, the mean PANSS scores were 16 (positive), 18.1 (negative), 31.8 (general), and 65.9 (total); the mean CGI-S was 4.6. These data reflect the practice of a multidisciplinary team in evolution on a clinical research unit; they will be updated for the final presentation.

No. 21

Long-Term Safety and Tolerability of Valbenazine (NBI-98854) in Subjects With Tardive Dyskinesia and a Diagnosis of Schizophrenia or Mood Disorder

Poster Presenter: Richard C. Josiassen, Ph.D.

Co-Authors: John M. Kane, M.D., Grace S. Liang, M.D., Joshua Burke, M.S., Christopher F. O'Brien, M.D.

SUMMARY:

Background: The short-term safety profile of once-daily valbenazine (NBI-98854, 40 and 80mg per day) has been evaluated in several double-blind, placebo-controlled (DBPC) trials in adults with tardive dyskinesia (TD) who had a diagnosis of schizophrenia/schizoaffective disorder (SCHZ) or mood disorder. Studies with longer treatment duration (up to 48 weeks) were conducted to evaluate the long-term safety of this novel drug in subjects with TD. **Methods:** The pooled long-term

exposure (LTE) population included valbenazine-treated subjects from three studies: KINECT (NCT01688037: six-week DBPC, six-week open-label), KINECT 3 (NCT02274558: six-week DBPC, 42-week blinded extension, four-week drug-free follow-up) and KINECT 4 (NCT02405091: 48-week open-label, four-week drug-free follow-up). Safety assessments included adverse events (AEs), laboratory tests, vital signs, electrocardiograms (ECGs), and extrapyramidal symptom (EPS) scales. Psychiatric stability was monitored using the Positive and Negative Syndrome Scale (PANSS) and Calgary Depression Scale for Schizophrenia (CDSS) (SCHZ subgroup), as well as the Montgomery-Åsberg Depression Rating Scale (MADRS) and Young Mania Rating Scale (YMRS) (mood subgroup). All data were analyzed descriptively. **Results:** The LTE population included 430 subjects (KINECT, N=46; KINECT 3, N=220; KINECT 4, N=164), 71.7% with SCHZ and 28.3% with a mood disorder; 85.5% were taking an antipsychotic (atypical only, 69.8%; typical only or typical and atypical, 15.7%). In the LTE population, treatment-emergent AEs (TEAEs), serious AE, and discontinuations due to AEs were reported in 66.5%, 14.2% and 14.7% of subjects, respectively. The TEAE incidence was lower in the SCHZ subgroup (64.4%) than in the mood subgroup (71.9%). The three most common TEAEs in the SCHZ subgroup were urinary tract infection (UTI; 6.1%), headache (5.8%) and somnolence (5.2%). The three most common TEAEs in the mood subgroup were headache (12.4%), UTI (10.7%) and somnolence (9.1%). Mean score changes from baseline to end of treatment (week 48) indicated that psychiatric stability was maintained in the SCHZ subgroup (PANSS total=-3.4; PANSS positive=1.1; PANSS negative=-0.1; PANSS general psychopathology=-2.2; CDSS total=-0.4) and the mood subgroup (MADRS total=0.0; YMRS total=1.2). These scores remained relatively stable during the four-week drug-free follow-up periods. In the LTE population, mean changes in laboratory parameters, vital signs, ECG, and EPS scales were generally minimal and not clinically significant. **Conclusion:** Valbenazine appeared to be well tolerated in adults with TD who received up to 48 weeks of treatment. In addition to long-term efficacy results, these results suggest that valbenazine may be appropriate for the long-term management of TD regardless of underlying psychiatric diagnosis (SCHZ

or mood disorder). This study was supported by Neurocrine Biosciences, Inc.

No. 22

The Efficacy of Lumateperone (ITI-007) for Patients With Schizophrenia: Combined Results From Large Randomized Placebo-Controlled Studies

Poster Presenter: Robert E. Davis, Ph.D.

Co-Authors: Christoph U. Correll, M.D., Steven Glass, Sharon Mates, Cedric O'Gorman, M.D., Jelena Saillard, Michal Weingart, Kimberly E. Vanover, Ph.D.

SUMMARY:

Background: Lumateperone is a first-in-class investigational agent in development for schizophrenia, bipolar depression and agitation associated with dementia. Acting synergistically via serotonergic, dopaminergic and glutamatergic systems, it represents a new therapeutic approach for neuropsychiatric disorders. Lumateperone is a potent 5-HT_{2A} receptor antagonist, a mesolimbic/mesocortical dopamine phosphoprotein modulator (DPPM) with activity as a presynaptic partial agonist and postsynaptic antagonist at D₂ receptors, an indirect modulator of glutamate via increased phosphorylation of mesolimbic glutamate GluN_{2B} receptors downstream from D₁ receptor activation and an inhibitor of serotonin transporters. **Methods:** Efficacy data for ITI-007 60mg from large, randomized, double-blind, placebo-controlled acute schizophrenia trials were combined for analysis. In the '005 trial, 335 patients were randomized to receive ITI-007 60mg or 120mg, risperidone 4mg (positive control) or placebo once daily for four weeks. In the '301 trial, 450 patients were randomized to receive ITI-007 60mg or 40mg or placebo once daily for four weeks. In the '302 trial, 696 patients were randomized to receive ITI-007 60mg or 20mg, risperidone 4mg (positive control), or placebo once daily for six weeks. The primary endpoint was change from baseline on the Positive and Negative Syndrome Scale (PANSS) total score compared to placebo. **Results:** In the '005 trial, ITI-007 60mg met the primary endpoint with statistically significant superior efficacy over placebo at day 28 as measured by the PANSS total score ($p=0.017$). In the '301 trial, ITI-007 60mg again met the primary endpoint with statistically significant superior efficacy over placebo at day 28 as measured by the

PANSS total score ($p=0.022$). ITI-007 60mg also met the key secondary endpoint of statistically significant improvement on the CGI-S ($p=0.003$). ITI-007 60mg required no dose titration, and combined data across the studies showed significant early (week 1) and maintained efficacy throughout the treatment period. Additional combined efficacy analyses will be presented. Lumateperone was well tolerated with placebo-like safety and statistically significant and clinically important safety/tolerability advantages over risperidone. **Discussion:** Lumateperone represents a new pharmacological and clinically differentiated approach to schizophrenia. Two large, well-controlled studies were positive for ITI-007 60mg. These results and supportive data from a third study provide evidence of the efficacy and safety of lumateperone for schizophrenia. In all studies, lumateperone was well tolerated with placebo-like safety and important safety and tolerability advantages over risperidone.

No. 23

Single Dose and Repeat Once-Daily Dose Safety, Tolerability and Pharmacokinetics of Valbenazine in Healthy Male Subjects

Poster Presenter: Rosa Luo

Co-Authors: Haig Bozigian, Roland Jimenez, Gordon Loewen, Christopher F. O'Brien, M.D.

SUMMARY:

Valbenazine (VBZ) is a vesicular monoamine transporter 2 (VMAT₂) inhibitor in development for the treatment of tardive dyskinesia. The safety, tolerability and pharmacokinetics (PK) of VBZ following single and repeat once-daily dosing were evaluated in two randomized, single-center double-blind studies in healthy male subjects. In the first study, two cohorts of eight subjects were administered single doses (SD) of placebo (PBO; $N=2$ /period) or VBZ ($N=6$ /period; 1, 2, 5, or 12.5mg for cohort 1 and 12.5, 25, 50, or 75mg for cohort 2) using a sequential escalation scheme. The second study consisted of two phases. In the initial phase, subjects were administered SD PBO ($N=2$ /period) or VBZ ($N=6$ /period; 75, 100, 125, or 150mg) with sequential escalation. In the second phase, subjects received PBO or 50 or 100mg VBZ ($N=4:8:8$) daily for eight days (cohort 1) or PBO or 50mg VBZ ($N=6:6$) daily for eight days (cohort 2). For both studies,

plasma concentrations of VBZ and its active metabolite, NBI-98782, were determined. Safety was assessed throughout the studies. PK parameters were determined using noncompartmental methods. In both studies, VBZ was rapidly absorbed, with peak concentrations typically observed within 1.5 hours. Peak NBI-98782 concentrations were typically observed at four to nine hours. Terminal elimination half-life for both VBZ and NBI-98782 was approximately 20 hours. Across the 1mg to 150mg SD range evaluated across the studies, VBZ and NBI-98782 C_{max} and AUC increased dose-proportionally from 50mg to 150mg and more than dose-proportionally from 1mg to 50mg. Once-daily VBZ and NBI-98782 C_{max} and AUC parameters were also dose-proportional between the 50mg and 100mg doses. Steady-state for both analytes appeared to be achieved by day 8. The accumulation index was approximately 1.5 for VBZ and approximately 2.5 for NBI-98782. Peak to trough fluctuation was approximately 250% for VBZ and 70% for NBI-98782. Across both studies, NBI-98782 exposure was approximately 20–30% that of VBZ based on molar ratios. In the first study, the maximum-tolerated dose was not achieved; headache (two events) was the only treatment-emergent adverse event (TEAE) reported by more than one subject. In the second study, fatigue (four events) was the only TEAE reported by more than one subject following SD VBZ. Following daily VBZ, the TEAEs of fatigue, insomnia, disturbance in attention, and nervousness were dose-dependent; the latter three TEAEs were considered dose-limiting. Subject withdrawals due to TEAEs were one each for PBO and 50mg VBZ daily and three for 100mg VBZ daily. Clinically relevant effects on laboratory parameters, vital signs or ECGs were limited to increased CPK (SD: one each for 5mg VBZ and PBO), ALT (daily: one each for 50 and 100mg VBZ and PBO) and triglycerides (daily: one each for 50mg VBZ and PBO). Valbenazine has an acceptable safety profile and predictable pharmacokinetics that result in stable concentrations of active compounds with low peak to trough fluctuation following once-daily dosing.

No. 24

Efficacy of Cariprazine by Baseline Symptom Severity in Patients With Schizophrenia: A Post Hoc Analysis of Three Randomized Controlled Trials

Poster Presenter: Ricky S. Mofsen

Co-Authors: Shaoji Xu, György Németh, Ágota Barabássy, Willie Earley, Kelly Krogh

SUMMARY:

Background: Antipsychotic efficacy across the spectrum of disease severity is important in patients with schizophrenia. Cariprazine (CAR) is a dopamine D₃/D₂ receptor partial agonist antipsychotic; it is FDA approved for the treatment of adults with acute schizophrenia and mixed or manic episodes of bipolar I disorder. Post hoc analyses investigated the impact of baseline illness severity on the efficacy of CAR. **Methods:** Data were pooled from three positive, six-week, randomized, double-blind, placebo (PBO)-controlled phase 2/3 studies of CAR in adult patients with acute exacerbation of schizophrenia (NCT01104766, NCT01104779, NCT00694707). Patients were stratified by tertile into three severity subgroups by baseline Positive and Negative Syndrome Scale (PANSS) total score: 92 and under (PBO=160, CAR=376), between 92 and 100 (PBO=136, CAR=312), or over 100 (PBO=146, CAR=336). Post hoc analyses evaluated mean change from baseline to week 6 in PANSS total score, PANSS positive and negative subscale scores, and Clinical Global Impressions-Severity (CGI-S) score. Least squares mean differences (LSMD) for the CAR versus PBO groups were estimated using a mixed-effects model for repeated measures (MMRM). **Results:** The LSMDs from baseline to week 6 were statistically significant for CAR versus PBO in each subgroup on PANSS total score (92 and under: LSMD=-4.11, 95% CI [-7.26, -0.96], p=0.0106; between 92 and 100: LSMD=-8.80, 95% CI [-12.62, -4.98], p<0.0001; over 100: LSMD=-10.68, 95% CI [-14.76, -6.60], p<0.0001), PANSS negative subscale score (92 and under: LSMD=-1.12, 95% CI [-1.90, -0.35], p=0.0045; between 92 and 100: LSMD=-2.11, 95% CI [-3.02, -1.20], p<0.0001; over 100: LSMD=-2.18, 95% CI [-3.21, -1.14], p<0.0001), and CGI-S score (92 and under: LSMD=-0.19, 95% CI [-0.38, -0.01], p=0.0418; between 92 and 100: LSMD=-0.50, 95% CI [-0.72, -0.28], p<0.0001; over 100: LSMD=-0.62, 95% CI [-0.84, -0.39], p<0.0001). The difference for CAR versus PBO was statistically significant on the PANSS positive subscale in the between 92 and 100 (LSMD=-2.78, 95% CI [-4.06, -1.49], p<0.0001) and the over 100 (LSMD=-3.50, 95% CI [-4.78, -2.23],

p<0.0001) subgroups, but not in the 92 and under group (LSMD=-0.85, 95% CI [-1.93, 0.23], p=0.1229). When PANSS baseline scores were stratified by the median (96 and under vs. over 96), significantly greater change from baseline was observed for CAR versus PBO in each severity subgroup on all four scales (all comparisons p<0.001). **Conclusion:** When PANSS baseline scores were stratified by severity, significantly greater mean change from baseline was observed for CAR versus PBO on PANSS total, PANSS negative subscale and CGI-S scores in all severity subgroups; on the PANSS positive subscale, change was significantly greater for CAR versus PBO in the two subgroups with higher baseline scores. Overall, CAR effectively improved symptoms in patients with schizophrenia regardless of baseline disease severity and the treatment effect was greater in subgroups with higher baseline severity.

No. 25

A Phase 1 Study Comparing Pharmacokinetic and Safety Profiles of Three Different Dose Intervals of Aripiprazole Lauroxil

Poster Presenter: Robert Risinger, M.D.

Co-Authors: Marjie Hard, Peter J. Weiden

SUMMARY:

Background: Aripiprazole lauroxil (AL; ARISTADA®, Alkermes, Inc.) is an FDA-approved treatment for schizophrenia. AL is a non-ester prodrug of aripiprazole that results in extended systemic release of aripiprazole after intramuscular (IM) administration. This phase 1 study evaluated the pharmacokinetics (PK) and safety of a new AL dose (1,064mg) for two-month dose intervals. The study also evaluated four- and six-week dose intervals of AL at the 441mg and 882mg doses, respectively.

Methods: A total of 139 patients with a diagnosis of schizophrenia and stabilized on a first-line antipsychotic (other than aripiprazole) were randomized to one of three dose/dose interval groups: a four-week interval of AL 441mg (N=35), a six-week interval of AL 882mg (N=34) and an eight-week interval of AL 1,064mg intramuscular injection (N=70). After randomization, AL assignment was open label and administered as gluteal injections over 24 weeks. The total number of injections over 24 weeks was related to the interval: seven injections for the 441mg group, five for the 882mg

group and four for the 1,064mg group. PK and safety assessments occurred every two weeks and extended for an additional 20 weeks after the last injection. Patients continued on their prior antipsychotic throughout, such that the safety (but not the PK) findings also reflect a second antipsychotic co-prescribed with AL. **RESULTS:** Administration of AL 1,064mg every eight weeks and AL 882mg every six weeks provided continuous exposure to aripiprazole. Compared to the AL 441mg every four weeks group, the longer dose interval groups had consistently higher plasma concentrations for the entirety of the six-week and eight-week dose intervals for the 882mg and 1,064mg dose groups. The overall safety profile of the group randomized to the eight-week/1,064mg combination was comparable to the six-week/882mg and four-week/441mg groups. The most common adverse event (AE) for all groups was injection site reaction (pain). There was no apparent dose-AE signal for extrapyramidal symptoms, akathisia, sedation, or weight gain. In particular, there was no other safety signal identified with the longest interval/highest dose AL group of eight weeks/1,064mg. **Conclusion:** AL allows for a range of dose/dose interval combinations. The PK results from this study show that a dosing interval of every eight weeks for the 1,064mg dose resulted in aripiprazole concentrations within the established therapeutic window for AL. There was no safety signal directing any particular concern to any of the three doses/dose intervals studied. All patients continued their primary antipsychotics without any apparent tolerability issue arising from the addition of the AL injections. The results of this study show that 1,064mg AL may be suitable for a two-month dose interval. The three doses/dose intervals studied have the potential to help clinicians and patients expand their choice of AL treatment to best meet the needs of the individual patient. This study was funded by Alkermes, Inc.

No. 26

Body Mass Index Is Correlated With C-Reactive Protein in Patients With Schizophrenia

Poster Presenter: Rutvik P. Choksi, M.D., M.P.H.

Co-Authors: Olatola Iyi Ojo, Saba Usmani, Muhammad Raafey, Paulkyerian Ngobili, Bindhya Nagarajan, Olaoluwa O. Okusaga, M.D.

SUMMARY:

Background: Schizophrenia has been associated with increased body mass index (BMI). Evidence also suggests that C-reactive protein (CRP), an acute-phase plasma protein, is elevated in patients with schizophrenia. CRP levels have been correlated with BMI among individuals without schizophrenia, but there is a paucity of studies evaluating the association of BMI with CRP in individuals with schizophrenia. Thus, we examined the association of BMI and plasma CRP levels in a sample of patients with schizophrenia. **Methods:** Our sample consisted of 39 patients with schizophrenia (diagnosed with the Mini International Neuropsychiatric Interview version 5.0). Fasting blood was collected from all the patients and plasma CRP measured using ELISA. BMI was calculated for each patient. The distribution of CRP was right-skewed, and logarithmic transformation was done to normalize the data. Four patients had missing data. We carried out Pearson correlational analysis to assess the association between BMI and logCRP and partial correlation analyses to control for potential confounders. **Results:** BMI positively correlated with logCRP ($r=0.387$, $p=0.022$), and this finding persisted after controlling for age, sex, race, and education. **Conclusion:** Elevated BMI might contribute to increased inflammation in patients with schizophrenia. Since elevated inflammation has been associated with negative outcomes such as worsening cognition, cardiovascular complications and accelerated aging, the findings of this study provide further justification for supporting the evaluation of interventions targeted at reducing BMI in patients with schizophrenia.

No. 27**A Phase 1, Open-Label, Single-Dose Pharmacokinetic Study in Stabilized Patients With Schizophrenia Following Risperidone Implant**

Poster Presenter: Ryan Dammerman, M.D., Ph.D.

Co-Authors: Sonnie Kim, Mathews Adera, Alex Schwarz

SUMMARY:

Background: Risperidone is a dopamine and serotonin receptor antagonist for the treatment of schizophrenia that has fewer extrapyramidal side

effects relative to typical antipsychotic agents.

Methods: This phase 1, three-month, open-label, fixed-dose, first-in-human study evaluated the pharmacokinetics (PK) of risperidone and its active metabolite 9-OH-risperidone after insertion of long-lasting subcutaneous risperidone implants (RI). Eligible patients had a *DSM-IV* diagnosis of schizophrenia and body mass index (BMI) of 18.5–35.0kg/m² and were clinically stable on oral risperidone 4mg for four weeks prior to admission. The 375mg RI was aseptically inserted into the upper inner non-dominant arm. The first patient received the implant for one month, following which it was removed; all other patients received the implant for three months. Serial blood samples for PK assessments were collected 24 hours prior to RI insertion, two and six hours after implant, on days 2 to 7, every 12 hours from day 8 to 12, and daily on days 13 and 14. Risperidone and metabolite plasma concentrations were determined by a validated liquid chromatography-tandem mass spectrophotometry method. PK measures for area under the concentration versus time curve for zero to 24 hours (AUC_{0–24}), one month (AUC_{3–30}) and three months (AUC_{3–90}); maximum plasma concentration (C_{max}); concentration 24 hours following oral risperidone (C_{trough}); and time of maximal concentration (T_{max}) for total active moiety were estimated from plasma concentration data; average AUC concentrations were calculated at one and three months following RI. **Results:** A total of six patients were enrolled; all patients completed the study. All patients were Black/African American males an average of 42.2 years old, with an average BMI of 29.2kg/m². Following oral risperidone 4mg, total active moiety C_{max} and C_{trough} concentrations were 54.4±17.9ng/mL and 18.4±5.5ng/mL, with a mean T_{max} of 2.5±1.0 hours. After implantation, total active moiety C_{avg} values were 18.6ng/mL and 14.2±4.3ng/mL for one month and three months, respectively, with an AUC_{3–30} of 540 and an average AUC_{3–90} of 1,262.5±385.8ng*h/mL. Averaged over all six patients, the RI C_{avg} was 81.3% of the oral C_{trough} value and 27.5% of the C_{max} value following daily oral risperidone 4mg. **Conclusion:** Systemic drug concentrations of risperidone and 9-OH-risperidone provided by RI were similar to 4mg oral risperidone.

No. 28

Disparities in the Diagnosis and Medication Treatment of Individuals With Schizophrenia in the New York City Jail System

Poster Presenter: *Semmie Kim, M.P.H*

Co-Authors: *Anne Siegler, Dr.P.H., Sarah Glowa-Kollisch, M.P.H., Connor Bell, M.P.H., Elizabeth Ford, M.D.*

SUMMARY:

Background: Although the global prevalence of schizophrenia is estimated to be one percent, the prevalence of schizophrenia is higher in correctional populations than in the general community. "Extramedical" factors such as race, ethnicity and insurance status have been shown in the community to influence whether an individual is diagnosed with schizophrenia and which type of antipsychotic medication is selected for treatment. Specifically, Black individuals are more likely to be diagnosed with schizophrenia, but less likely to be treated with second-generation antipsychotics (SGAs). This study seeks to identify whether these trends also exist in the New York City (NYC) jail population diagnosed with schizophrenia spectrum disorders (SSD). **Methods:** A total of 36,526 unique patients incarcerated between May 2011 and June 2015 and identified to have mental health needs were included in this retrospective analysis of electronic health data. Of these, 3,058 patients (1.8% of the total jail population) were diagnosed with an SSD. Multivariable regression models examined associations between demographic, clinical and incarceration-related characteristics and the odds of receiving a diagnosis of an SSD in jail, as compared to other patients in the mental health service. Among those diagnosed, the odds of being prescribed a first- or second-generation antipsychotic medication were also modeled. **Results:** The largest proportion of those with an SSD were jailed with misdemeanor-level charges (44.9%) and incarcerated between one and two months (17.6%). The odds of being diagnosed with an SSD were higher for men than women (AOR=2.44, 99% CI [2.05, 2.91], $p<0.01$) and for all non-White patients than for non-Hispanic Whites, as compared to all other patients in the mental health service without an SSD. Among those diagnosed, the odds of being prescribed an SGA

were significantly lower in non-Hispanic Black (AOR=0.61, 99% CI [0.38, 0.98], $p<0.01$) and Hispanic individuals (AOR=0.53, 99% CI [0.31, 0.88], $p<0.01$) than in non-Hispanic Whites, after controlling for age, sex, top charge severity, and length of incarceration. With every two-week increase in length of stay, the odds of being prescribed an SGA also increased ($p<0.01$). **Conclusion:** Non-White male patients in NYC jails were significantly more likely to be diagnosed with schizophrenia. For those diagnosed, non-Hispanic Black and Hispanic patients were less likely to be prescribed an SGA than Whites. Both of these findings mirror community-based results and highlight the need across multiple treatment settings for a thorough investigation of the influence of sociodemographic characteristics on the diagnoses and treatments of individuals with schizophrenia. It is important to understand whether such diagnostic and prescribing practices are representative of patient-related, clinician-related and/or societal influences.

No. 29

The Validity and Sensitivity of PANSS-6 in the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) Study

Poster Presenter: *Soren Dinesen Ostergaard*

Co-Authors: *Leslie Foldager, Ole Mors, Per Bech, Christoph U. Correll, M.D.*

SUMMARY:

Background: The 30-item Positive and Negative Syndrome Scale (PANSS-30) is frequently used in research, but considered too time consuming for clinical use. We recently demonstrated that a six-item version of the PANSS (PANSS-6: P1=delusions, P2=conceptual disorganization, P3=hallucinations, N1=blunted Affect, N4=social withdrawal, N6=lack of spontaneity/flow of conversation) may be a more practical alternative to PANSS-30. The aim of this study was to test the validity and sensitivity of PANSS-6 further via a reanalysis of data from the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study. **Methods:** First, we tested the scalability of PANSS-6 and PANSS-30. Scalability is present when each symptom item in a rating scale provides unique information regarding syndrome severity. Subsequently, we tested the level of correlation between the total scores of

PANSS-6 and PANSS-30 in order to determine whether PANSS-6 conveys similar information as PANSS-30. Finally, to test whether PANSS-6 was equally sensitive as PANSS-30 in detecting differences in antipsychotic efficacy, we compared the effect of the five antipsychotics studied in CATIE, using the total scores of PANSS-6 and PANSS-30 as outcomes. **Results:** For the 577 subjects contributing data to the scalability analyses (those with complete PANSS ratings at baseline, month 1, month 3, and month 6), PANSS-6 was scalable, whereas this was not the case for PANSS-30. In the 1,432 subjects in the intention to treat (ITT) sample, the total scores on PANSS-6 and PANSS-30 were highly correlated (Spearman coefficient=0.86 based on 5,081 ratings). In the ITT sample, PANSS-6 and PANSS-30 identified the same statistically significant differences in antipsychotic efficacy, namely that olanzapine was superior to risperidone (PPANSS-6=0.0003 and PPANSS-30=0.0003) and ziprasidone (PPANSS-6=0.0018 and PPANSS-30=0.0046). **Conclusion:** PANSS-6 is a brief and scalable, clinician-based rating scale for schizophrenia that adequately measures symptom severity and antipsychotic efficacy. Research should test acceptability of PANSS-6 for routine, measurement-based care.

No. 30

A Phase 1, Six-Month, Open-Label, Dose-Ranging Pharmacokinetic Study in Stabilized Patients With Schizophrenia Following Risperidone Implant

Poster Presenter: Sonnie Kim

*Co-Authors: Ryan Dammerman, M.D., Ph.D.,
Mathews Adera, Alex Schwarz*

SUMMARY:

Background: A subcutaneous risperidone implant (RI) is under development for improving medication compliance in patients with schizophrenia. **Methods:** This phase 1, six-month, open-label, multisite, dose-ranging study evaluated the pharmacokinetics (PK) of risperidone and its active metabolite after subcutaneous RI insertion. Eligible patients had a *DSM-IV* diagnosis of schizophrenia, had a body mass index (BMI) of 18.5–35.0kg/m², and were clinically stable on oral risperidone 4, 6 or 8mg 30 days prior to enrollment. Based on the stabilized risperidone dose, RI containing a total of 480mg (1x480mg RI) (4mg), 720mg (1x480mg and 1x240mg RI) (6mg), or

960mg (2x480mg RI) (8mg) were implanted into the upper inner nondominant arm. Serial blood samples for oral risperidone PK assessments were collected prior to implantation; serial PK samples for RI were collected beginning two hours after implantation, once daily from days 2–14 and weekly for 22 weeks. Risperidone and metabolite plasma concentrations were determined by validated liquid chromatography-tandem mass spectrophotometry. PK measures for average plasma concentration (C_{avg}), maximum plasma concentration (C_{max}) and concentration 24 hours following dosing (C_{trough}) were calculated for risperidone plus active metabolite following oral risperidone; plasma concentration at steady state (C_{ss}) was calculated for risperidone plus active metabolite following RI insertion. **Results:** A total of 35 patients were enrolled; five patients discontinued before implantation and were not included in the PK population. Ten subjects each were randomized to 480, 720 and 960mg RI. A total of 23 patients completed, nine each receiving 480 and 720mg RI and five receiving 960mg RI. Patients were primarily Black/African American, male and an average of 42.3 years old, with an average BMI of 28.6kg/m². Following oral risperidone administration, C_{avg} values were 34.4, 56.2 and 54.9ng/mL for 4, 6 and 8mg, respectively. Maximal concentrations occurred two to three hours following dose. The C_{max} was 53.3, 82.8 and 80.6ng/mL for risperidone 4, 6 and 8mg, respectively; C_{trough} was 19.6, 29.7 and 32.8ng/mL, respectively. Steady state concentrations for RI were 19.1, 31.0 and 32.7ng/mL for 480mg, 720mg and 960mg RI, respectively. Peak concentrations of active moiety occurred at 21 days for the 480 (28.9ng/mL) and 960mg (43.3ng/mL) RI and at 56 days for the 720mg (38.4ng/mL) RI. **Conclusion:** Relative to oral risperidone, mean peak concentrations of risperidone plus metabolite were numerically lower following RI, while steady state risperidone and metabolite concentrations were similar to observed trough values for oral risperidone.

No. 31

Efficacy of Cariprazine on Negative Symptoms in Acutely Ill Patients With Schizophrenia: A Pooled, Post Hoc Analysis

Poster Presenter: Willie Earley

Co-Authors: Hua Guo, Balázs Szatmári, György Németh, Henry A. Nasrallah, M.D., David G. Daniel, M.D., Mehul Patel

SUMMARY:

Background: Primary negative symptoms measurably contribute to disease burden in patients with schizophrenia; antipsychotics have generally shown no efficacy on this domain. Cariprazine, a dopamine D3/D2 receptor partial agonist, is FDA approved for the treatment of adults with schizophrenia and mixed/manic episodes of bipolar I disorder. In a 26-week study in stable patients with predominant negative symptoms (PNS) of schizophrenia, cariprazine was effective in the treatment of negative symptoms. We conducted a pooled post hoc investigation of cariprazine efficacy in a subset of patients from two cariprazine phase II/III trials to determine if the signal also existed in the acutely ill population. **Methods:** Data were pooled from two randomized, double-blind, placebo- and active-controlled, fixed-dose studies of cariprazine in patients with acute exacerbation of schizophrenia. Analyses included patients who met three of the PNS criteria at baseline: Positive and Negative Syndrome Scale factor score for negative symptoms (PANSS-FSNS) 24 or higher, PANSS factor score for positive symptoms (PANSS-FSPS) 19 or under, and a score of 4 or more on at least two of three PANSS items: blunted affect, passive/apathetic social withdrawal and lack of spontaneity. Least squares (LS) mean changes from baseline to week 6 in PANSS-FSNS were estimated for placebo (PBO), cariprazine (CAR) 1.5–3 and 4.5–6mg per day, risperidone (RISP) 4mg per day, and aripiprazole (ARIP) 10mg per day using a mixed-effects model for repeated measures. PANSS-FSNS response (reduction of 20% or more from baseline) was also evaluated. **Results:** A total of 317 of 1,315 patients met abbreviated PNS criteria at baseline. The magnitude of LS mean change (SEM) from baseline in PANSS-FSNS was greater for CAR 1.5–3mg per day (-6.3 [0.6]), CAR 4.5–6mg per day (-7.8 [0.7]), RISP (-7.1 [1.0]), and ARIP (-5.3 [0.8]) than for PBO (-4.3 [0.6]). LS mean differences (LSMDs) versus PBO were significant for both CAR doses (1.5–3mg per day=-2.0, 95% CI [-3.6, -0.3], p=0.0179; 4.5–6mg per day=-3.4, 95% CI [-5.2, -1.7], p=0.0002) and RISP (-2.8, 95% CI [-5.0, -0.5], p=0.0149), but not for ARIP (-1.0, 95%

CI [-3.0, 1.0], p=0.3265). The LSMD at week 6 was also significant in favor of CAR 4.5–6mg per day versus ARIP (2.4, 95% CI [4.5, -0.4], p=0.0197). The percentage of PANSS-FSNS responders was significantly higher with CAR treatment (1.5–3mg per day: 54.3%, number needed to treat [NNT]=6; 4.5–6mg per day: 69.7%, NNT=3) than with PBO (35.4%); response rates for RISP (52.9%, NNT=6) or ARIP (40.9%, NNT=19) were not significantly different from PBO. **Conclusion:** In this subset of acutely exacerbated schizophrenia patients who met partial criteria for PNS, CAR and RISP, but not ARIP, demonstrated significant improvements versus PBO on negative symptoms at week 6. Limitations include short duration for negative symptom evaluation and the potential that improvements in at least some of the negative symptoms may have been secondary to improvements in positive symptoms. This research was supported by Forest, an Allergan affiliate, and Gedeon Richter.

No. 32

Neural Correlates for Interaction Between Emotion and Cognition During Face Recognition Task in a Schizophrenic Patient Using Functional MRI

Poster Presenter: Jong-Chul Yang, M.D., Ph.D.

Co-Authors: Jong-IL Park, Se-Hoon Shim, M.D.

SUMMARY:

Background: Many schizophrenic patients have disruption of emotional and cognitive functioning. However, few studies have investigated the neural mechanisms for the effects of emotion on cognitive functioning in schizophrenic patients. In this study, we assessed the influence of emotional distracters on working memory maintenance in schizophrenic patients and demonstrated the associated brain regions using functional MRI with face recognition task. **Methods:** Event-related fMRI data were acquired for 17 patients with schizophrenia (mean age=31.1±9.0 years) and 17 healthy controls (mean age=32.8±8.6 years). All schizophrenic patients were diagnosed on the basis of *DSM-IV-TR* and had no other psychiatric disorders. They underwent 3.0 Tesla fMRI during a face recognition task with non-emotional distracters (novel face pictures) and emotional distracters (fear-provoking pictures). The paradigm consisted of trials with the sequence “encoding–maintenance–distracter–retrieval.” As

the encoding task, three different human faces sequentially appear once on a quartile coordinate. Subjects were instructed to look at the distracters and maintain the working memory for the encoded faces. In the retrieval task, participants were presented either the previously encoded face or a new face and asked whether they recognized the face. In the total 20 trials, the order of two types of the distracters was randomly arranged. We assessed the accuracy of the face recognition task, and the brain activation maps were compared between groups and between each distracter condition by using SPM 8. **Results:** The accuracies for the face recognition task were lower in schizophrenic patients than healthy controls with non-emotional distracter (52.6% and 65.4%, respectively, $p < 0.05$) and emotional distracter (53.3% and 65.6%, respectively, $p < 0.05$). Compared with healthy controls, the patients with schizophrenia showed significantly increased brain activities in the dorsolateral prefrontal cortex, medial prefrontal cortex, superior temporal gyrus, middle temporal gyrus, insula, hippocampus, caudate nucleus, and postcentral gyrus during the working memory maintenance task with fear-provoking emotional pictures, compared to novel face non-emotional pictures ($p < 0.005$). These series of increased activations were not limited by only the prefrontal area, but also interconnected with various brain regions, including temporal area, hippocampus and insula. **Conclusion:** These results demonstrated that working memory maintenance of schizophrenic patients was significantly influenced by emotional distracters, and there was significant difference of brain activation patterns associated with the effects of non-emotional and emotional distracters. These findings might be helpful for understanding the neural mechanism of cognitive dysfunction, particularly the interaction between emotion and cognition, in patients with schizophrenia.

No. 33

Frontal Lobe Intracortical Myelination as a Potential Biomarker for Therapeutic Effectiveness in Antipsychotics Using MRI at 1.5T and 3T

Poster Presenter: Yong Yue

Lead Author: Todd Tishler

Co-Authors: George Bartzokis, Larry D. Alphs, Brianne Brown, Psy.D., J. P. Villablanca, Kenneth

Subotnik, Keith Nuechterlein, Benjamin M. Ellingson

SUMMARY:

Background: Converging evidence suggests that the degree of intracortical myelination (ICM), which is thought to be responsible for high-frequency synchronization of electrical activity across the cerebral cortex, is dysregulated in schizophrenia (SZ) and that consistent treatment with antipsychotic medications can increase ICM or stabilize loss of ICM during the course of the disease. This poster demonstrates the use of a novel MRI approach to selectively discriminate lipids involved in myelinated tissues in order to quantify changes in frontal lobe ICM at both 1.5T and 3T as a result of antipsychotic therapy. **Methods:** This research involved three phases: 1) quantification of frontal lobe ICM at 1.5T in SZ patients treated with oral second-generation antipsychotics at a single institution; 2) calibration of frontal lobe ICM measures between 1.5T and 3T (calibration); and 3) initial ICM results obtained at 3T from a prospective multicenter trial in recent-onset SZ patients comparing paliperidone palmitate long-acting injection versus oral antipsychotics (DREaM trial, NCT02431702). Coronal oblique proton density and inversion recovery spin echo images (0.94x0.94x3mm voxel size, 24cm FOV) were obtained at 1.5T and/or 3T MRI, segmented. The volume of ICM was quantified for all subjects. **Results:** 1) At 1.5T, frontal lobe ICM of SZ patients was higher as a function of duration of second-generation antipsychotic medication exposure over the first year of treatment but declined thereafter. A quadratic polynomial regression model between ICM and logged medication exposure fit the data (overall model $F=13.47$, $df=2,89$, $p < 0.0001$; linear effect: $t=4.19$, $p < 0.0001$; quadratic effect: $t=-4.85$, $p < 0.0001$), with peak ICM volume corresponding to 12.6 months of treatment. Frontal lobe ICM was substantially lower as a function of increasing age in SZ patients ($r=-0.345$, $p < 0.001$), but not in healthy controls. 2) Slight modifications of inversion times and other parameters, along with homogeneity corrections, allowed for close correlation of frontal lobe ICM between 1.5T and 3T. 3) Consistent with what was found at lower (1.5T) field strengths, ICM of SZ patients at 3T was higher as a function of duration of antipsychotic medication exposure over the first year of treatment ($r=0.68$, $p=0.03$).

Conclusion: The inverted U-shaped function of ICM with duration of lifetime oral antipsychotic exposure is consistent with initial clinical response followed by increasing medication nonadherence and increased clinical symptoms. Preliminary results from the DREaM trial at 3T demonstrate feasibility for obtaining multicenter measurements of frontal lobe ICM and indicate a similar initial increase in ICM as a function of antipsychotic exposure duration. Frontal lobe ICM measured using a specialized MRI sequence shows promise as a potential biomarker for multicenter evaluation of therapeutic effectiveness.

No. 34

Reduction of Impulsivity and Aggression in Two Patients With Antisocial Personality Disorder After Prolonged Administration of Zopiclone

Poster Presenter: Alfonso Ceccherini-Nelli, M.D.

Co-Authors: Lisa M. Burback, M.D., Kevin Morin, M.D.

SUMMARY:

Background: Hill (1944), in his seminal paper “Cerebral Dysrhythmia: Its Significance in Aggressive Behavior,” defined dysrhythmic aggressive behavior as a syndrome characterized by psychopathic personality, violent behavior and resting EEG with a predominance of 4–6Hz rhythms, with most frequent bilateral localization in post-central regions. **Methods:** We conducted a systematic review of EEG studies to determine the prevalence of non-epileptic dysrhythmia in borderline (BPD) and antisocial personality disorders (APD). We describe two consecutive patients with antisocial personality disorder, with severe impulsivity and aggressiveness, who were successfully treated off label with daytime high doses of zopiclone. **Results:** Our systematic review of the literature supports the increased prevalence of attenuated alpha rhythm and excess delta and theta rhythms predominantly in the frontal region of APD patients compared to controls. Increased prevalence of intermittent rhythmic delta or theta activity has been reported in BPD. Our first case is a 22-year-old male who was admitted to a psychiatric intensive care unit with methamphetamine-induced psychosis and APD. He had a long history of violent criminal behavior. He had shown poor response and poor compliance to

several antipsychotics. We observed a rapid and sustained resolution of hostility and aggressive behavior after administration of zopiclone, slowly titrated to 15mg four times daily. Our second case is a 26-year-old female with a diagnosis of BPD and APD, an extensive forensic history, violent behavior, and numerous serious suicide attempts. This patient had a remote history of perinatal hypoxia and seizure disorder. Baseline EEGs showed a nonepileptic dysrhythmia with reduced alpha and increased delta/theta expression. This patient had failed to respond to numerous pharmacological and psychotherapeutic interventions. Her aripiprazole was augmented with zopiclone 48.75mg in four divided doses. Subsequently, she had a complete remission of depression, aggressive behavior, self-harm, and suicidal behavior. A new EEG, performed after clinical remission had occurred, was normal and did not show any delta/theta activity. Benzodiazepines were previously ineffective in both patients. **Conclusion:** This case series generates the hypothesis that a subset of APD and BPD patients may benefit from the treatment with α -1,3-selective GABA-A allosteric modulators, due to an underlying pathology of GABA interneurons. EEG could prove to be a useful biomarker to identify patients more likely to respond to this novel treatment.

No. 35

Early vs. Later Treatment Response in Lurasidone-Treated Patients With Bipolar Depression: Association With Patient-Reported Health Outcomes

Poster Presenter: Daisy S. Ng-Mak, Ph.D.

Co-Authors: Elizabeth Dansie Bacci, Ph.D., Jiat Ling Poon, Ph.D., Krithika Rajagopalan, Ph.D., Antony Loebel, M.D.

SUMMARY:

Background: Bipolar disorder is a chronic condition that negatively impacts social, occupational and general functioning and health-related quality of life (HRQoL). Early response (25% reduction in Montgomery-Åsberg Depression Rating Scale [MADRS] score or one-point improvement on the Clinical Global Impression–Severity: Bipolar Version Scale [CGI-BP-S]) to treatment with lurasidone from baseline to week 2 has been shown to indicate later treatment success in bipolar depression. This study

examined the relationship between week 2 (early) clinical improvement and functioning and HRQoL at weeks 6, 12 and 24. **Methods:** This was a post hoc analysis of bipolar depression data from patients who entered and completed a 24-week open-label trial of lurasidone (Study 256: 20–120mg) from one of two six-week, randomized, placebo-controlled clinical trials that assessed the effect of lurasidone as monotherapy (Study 236: 20–60mg/80–120mg) or adjunctive to lithium or valproate (Study 235: 20–120mg) versus placebo. The relationship between early treatment response (defined above) from baseline to week 2 and patient health outcomes (functioning: Sheehan Disability Scale [SDS]; HRQoL: Quality of Life Satisfaction and Enjoyment Short Form [Q-LES-Q SF]) was assessed from baseline to weeks 6, 12 and 24 through covariance analyses controlling for age, gender, pooled study center and baseline outcome score. **Results:** In this study, more than half (240 of 414) of patients were classified as early responders. There were no significant differences at baseline between early and late responders on clinical and patient health outcomes. By week 6, early responders reported significantly greater clinical (MADRS: -19.8 ± 8.6 vs. -10.9 ± 8.6 ; CGI-BP-S: -2.3 ± 1.1 vs. -1.0 ± 1.0) and patient health outcomes improvements from baseline (SDS total: -12 ± 7.2 vs. -8.1 ± 6.8 ; Q-LES-Q SF: 26.8 ± 15.5 vs. 18.3 ± 14.8 ; all $p < 0.001$) compared to late responders. At week 12, the observed clinical and patient health outcome levels (MADRS: 7.8 ± 7.2 vs. 9.9 ± 6.5 ; CGI-BP-S: 1.9 ± 1.0 vs. 2.3 ± 0.9 ; SDS total: 6.2 ± 5.95 vs. 7.2 ± 5.64 ; Q-LES-Q SF: 49.9 ± 9.25 vs. 47.5 ± 8.87) became more alike between early and late responders. At week 24, the observed outcome levels were similar for both groups (MADRS: 6.8 ± 7.6 vs. 7.5 ± 6.0 ; CGI-BP-S: 1.7 ± 1.0 vs. 2.3 ± 0.9 ; SDS total: 4.4 ± 5.15 vs. 6.0 ± 5.17 ; Q-LES-Q SF: 51.1 ± 8.91 vs. 49.6 ± 8.35), and outcome improvements were sustained for the total sample and by treatment arm. **Conclusion:** In this post hoc analysis, response to treatment with lurasidone at week 2 was an important indicator of short- and long-term improvements in clinical and patient-reported health outcomes.

No. 36

Efficacy and Safety of Lurasidone in Children and Adolescent Patients With Bipolar I Depression

Poster Presenter: Melissa P. DelBello

Co-Authors: Robert Goldman, Debra Phillips, Ling Deng, Ph.D., Josephine Cucchiaro, Antony Loebel, M.D.

SUMMARY:

Background: Bipolar I disorder has an estimated prevalence of 2.7% in adolescents and less than one percent in children. Depression associated with bipolar disorder in children and adolescents is associated with high rates of suicide attempts and high rates of recurrence and functional impairment. However, there are few evidence-based treatments for youth with bipolar depression. Lurasidone has been approved by the FDA for the treatment of bipolar depression in adults. The aim of this international study was to evaluate the efficacy and safety of lurasidone in children and adolescents with bipolar depression. **Methods:** Patients ages 10–17 with a *DSM-IV-TR* diagnosis of bipolar I depression were randomized to six weeks of double-blind treatment with once-daily, flexible doses of 20–80mg. Primary and key secondary endpoints were change from baseline to week 6 in the Children Depression Rating Scale, Revised (CDRS-R) total score and the Clinical Global Impressions, Bipolar Severity of Depression score (CGI-BP-S), respectively, evaluated by mixed-model repeated measures analysis. **Results:** A total of 347 patients were randomized and received at least one dose of study medication: lurasidone (N=175; 50.9% male; mean age=14.2 years) and placebo (N=172; 51.2% male; mean age=14.3 years). The mean total daily dose of the lurasidone group was 32.6mg, with modal dose distribution of 51.8%, 26.5%, 12.9%, and 8.8% for 20mg, 40mg, 60mg, and 80mg, respectively. Treatment with lurasidone was associated with significantly greater improvement on the CDRS-R total score and the CGI-BP-S score at week 6 compared with placebo (-21.0 vs. -15.3 ; $p < 0.0001$; effect size=0.45 and -1.49 vs. -1.05 ; $p < 0.0001$; effect size=0.44, respectively). Lurasidone was also associated with statistically significant and clinically meaningful improvement in secondary measures of anxiety, quality of life and global functioning. Study completion rates were 92.0% in the lurasidone group and 89.7% in the placebo group; discontinuation rates due to adverse events were the same (1.7%) for both groups. The three most frequent adverse

events reported for lurasidone versus placebo were nausea (16% vs. 6%), somnolence (11% vs. 6%) and increased weight (7% vs. 2%). At the study endpoint, either numerical improvement or neutral change was observed in fasting glucose or lipids, an increase in mean weight compared with placebo (+0.74kg vs. +0.44kg), and a minimal increase in prolactin compared with placebo (median of change=+1.10 vs. +0.50ng/mL). **Conclusion:** In children and adolescents with bipolar depression, lurasidone (mean dose=32.6mg per day) demonstrated statistically significant and clinically meaningful improvement versus placebo on measures of depression severity (CSRS-R, CGI-BP-S) and on secondary measures of anxiety, quality of life and global functioning. In this study, lurasidone was associated with few effects on weight and metabolic parameters and was generally well tolerated.

No. 37

Polypharmacy in Bipolar Disorder: Associations With Clinical and Demographic Variables

Poster Presenter: Julia Golden, B.A.

Co-Author: John W. Goethe, M.D.

SUMMARY:

Background: Polypharmacy is increasingly common in patients with bipolar disorder (BP) and has been associated with increased risk of medication nonadherence, adverse side effects, medication error, and hospital readmission (RA). This study examined a large, inpatient sample to identify clinical and demographic variables associated with polypharmacy and assess risk of RA among patients receiving polypharmacy. **Methods:** The sample was 1,401 individuals ages 18–64 discharged between Q1 2010 and Q3 2015 with a *DSM-IV* clinical diagnosis of bipolar mania (BP-M), bipolar depression (BP-D) or bipolar mixed (BP-Mx). Logistic regressions, controlling for demographics, examined associations between several independent variables (e.g., selected co-diagnoses, psychotic features, LOS, and specific psychotropics prescribed at discharge) and risk of polypharmacy (here defined as four or more psychotropics). Other regressions examined the associations of polypharmacy with risk of RA within 15, 30, 90, and 180 days of discharge from index hospitalization. Regressions were performed using the sample as a whole, as well as each BP subtype.

All analyses were assessed at $\alpha=0.05$. **Results:** The proportion of patients on four or more drugs, 23.8% in the sample as a whole, varied significantly by BP subtype (32.6% in BP-D, 23.0% in BP-Mx and 12.2% in BP-M [pairwise associations all $p=0.01$]). Patients with BP-D were at increased risk of receiving polypharmacy (OR=2.26), while patients with BP-M were at decreased risk (OR=0.35). Increased risk of polypharmacy was significantly associated with antidepressant (AD) and anticonvulsant (AC) treatment in all three BP subtypes (ORs=2.66–12.21), but was not associated with lithium (Li). Polypharmacy was significantly associated with borderline personality disorder in all BP subtypes (ORs=1.84–4.19) and with anxiety disorders in BP-D and BP-Mx (ORs=1.85 and 1.99, respectively). In BP-D, polypharmacy was significantly more likely in females (OR=1.48). Unexpectedly, polypharmacy was not associated with either substance abuse or psychosis. Increased risk of RA was significantly associated with polypharmacy, but only in BP-M and only within 15 and 30 days (ORs=4.84 and 2.96, respectively). **Conclusion:** The prevalence of and associations with polypharmacy were generally consistent with existing data. However, few previous studies have examined these associations by BP subtype, by individual psychotropic or at multiple follow-up intervals for associations with RA. The present study revealed that polypharmacy was most common in BP-D, and in this subtype, there were additional risks associated with both female gender and a co-diagnosis of an anxiety disorder. Li (in contrast to AC and AD) was not associated with polypharmacy, suggesting a possible advantage for Li in both efficacy and reduced psychotropic burden. Further study is needed.

No. 38

Treatment Response of Patients With Bipolar I or II Disorder With or Without a Recent Substance Use Disorder to Quetiapine or Placebo

Poster Presenter: Keming Gao, M.D., Ph.D.

Co-Authors: Stephen Ganocy, Carla Conroy, Brittany Brownrigg, Mary Beth Serrano, Joseph R. Calabrese

SUMMARY:

Background: Co-occurrence of anxiety and substance use disorders in bipolar disorder (BPD) is the rule rather than the exception. The aim of this

study is to use an existing dataset to explore the treatment response of patients with bipolar I or II depression with or without a recent SUD to quetiapine-XR or placebo. **Methods:** The dataset was a randomized, placebo-controlled, eight-week study of quetiapine-XR versus placebo in patients with bipolar I or II depression and generalized anxiety disorder with or without a recent SUD. SUD was confirmed by the Structured Clinical Interview for DSM-IV Axis I Disorders, Patient Version (SCID-P). A “recent” SUD was defined as patients who had a diagnosis of substance dependence and continued to meet abuse or dependence criteria for substance(s) in the past six months at the initial assessment or those who had a diagnosis of substance abuse and continued abusing a substance in the last three months. Depression, anxiety and overall symptom severity were measured with the Hamilton Depression Rating Scale–17 item (HAM-D-17), 16-item Quick Inventory of Depressive Symptomatology (QIDS-16), Hamilton Anxiety Rating Scale (HAM-A), and Clinical Global Impression-Severity Scale (CGI-S). Timeline follow-back was used to measure the severity of alcohol and cannabis use. Last observation carried forward and mixed-effects modeling for repeated measures were used to analyze outcome measures. **Results:** Of 91 patients, there were 24 patients without and 22 with a recent SUD in the quetiapine-XR group and 23 without and 21 with in the placebo group. In the quetiapine-XR group, patients with a recent SUD had a larger decrease in depressive symptoms compared those without (-10.8±1.7 vs. -6.1±1.8 on HAM-D-17, p=0.07; -9.6±1.6 vs. -3.7±1.7 on QIDS-16, p=0.02; -1.6±0.4 vs. -0.8±0.03 on CGI-S, p=0.04). In the placebo group, patients without a recent SUD had a small, but larger reduction in depressive symptoms than those with a recent SUD (-9.5±2.6 vs. -8.1±2.6 on HAM-D-17; -9.2±2.5 vs. -3.3±2.4, p=0.11). Among patients with a recent SUD, those receiving quetiapine-XR had a larger decrease in the number of drinks per week, number of heavy drinking days, number of drinking days per week (p=0.17), number of marijuana joints per week (p=0.09), and number of smoking days per week compared those receiving placebo. The patterns of weekly changes in alcohol and cannabis use varied in both groups. For those drinking alcohol a week before randomization, the majority of patients had decreases in the number of

drinks per week, heavy drinking days per week and number of drinking days per week. For marijuana users a week before randomization (N=15), only five had a decreased number of smoking days in follow-up visits, although the majority of patients (N=11) had decreases in the number of joints smoked during follow-up visits.

No. 39

Lithium Treatment and Cancer Incidence in Bipolar Disorder: A Large Nationwide Swedish Register Study

Poster Presenter: Lina S. C. Martinsson, M.D. Ph.D.

SUMMARY:

Objective: Investigate whether there is an increased risk of cancer associated with lithium treatment in patients with bipolar disorder compared to the general population. **Methods:** A nationwide Swedish register study of incidence rate ratios (IRRs) of total cancer and site-specific cancer in the 50- to 84-year age range was carried out in patients with bipolar disorder (N=5,442) with and without lithium treatment from July 2005 to December 2009, compared to the general population using linked information from The Swedish Cancer Register, The National Patient Register and The Drug Prescription Register. **Results:** The overall cancer risk was not increased in patients with bipolar disorder. There was no difference in risk of unspecified cancer, neither in patients with lithium treatment compared to the general population (IRR=1.04, 95% confidence interval [CI] [0.89, 1.23]) nor in patients with bipolar disorder without lithium treatment compared to the general population (IRR=1.03, 95% CI [0.89, 1.19]). The cancer risk was significantly increased in patients with bipolar disorder without lithium treatment in the digestive organs (IRR=1.47, 95% CI [1.12, 1.93]), in the respiratory system and intrathoracic organs (IRR=1.72, 95% CI [1.11, 2.66]), and in the endocrine glands and related structures (IRR=2.60, 95% CI [1.24, 5.47]), but in patients with bipolar disorder with lithium treatment, there was no significantly increased cancer risk compared to the general population. **Conclusion:** Bipolar disorder was not associated with increased cancer incidence and neither was lithium treatment in these patients. Specifically, there was an increased risk of respiratory, gastrointestinal and endocrine cancer in

patients with bipolar disorder without lithium treatment.

No. 40

Early- Versus Late-Onset Obsessive-Compulsive Disorder: The Impact of Obsessive-Compulsive Personality Disorder and Stressful Life Events

Poster Presenter: Ayse Döndü

SUMMARY:

Background: Obsessive-compulsive disorder (OCD) is a heterogeneous disorder with phenotypical differences, including a variable age of disease onset. Complex neurobiological, psychosocial and genetic influences most likely influence the age of disease onset in individuals with OCD, yet these factors have yet to be fully delineated. Recent studies have consistently found elevated rates of obsessive-compulsive personality disorder (OCPD) in subjects with OCD, with estimates ranging from 23 to 32% in individuals with OCD in comparison to rates of 0.9 to 2.0% in community samples. Also, stressful life events have been identified as risk factors for OCD, and hoarding is common in individuals with these disorders. Eighty-two percent of those with OCD report a history of traumas linked to the onset of OCD. In this poster, we report preliminary findings of a study that examined the impacts of OCPD and stressful life events on early versus late-onset OCD. We hypothesized that early onset OCD would be more likely to be associated with OCPD. We also examined whether the individuals with OCD and OCPD would be more impaired and would demonstrate poorer levels of insight. **Methods:** A total of 127 subjects with a diagnosis of OCD were consecutively recruited at the psychiatry department of Aydin State Hospital. All patients were applied the Yale-Brown Obsessive Compulsive Scale (YBOCS), Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A). The presence of OCPD was determined through the Structured Clinical Interview for *DSM-IV* Axis II Personality Disorders (SCID-II). According to age at onset of OCD, the patients were separated into two groups. The subjects who developed OCD before age 18 (N=51) were considered to have early onset (EO) OCD, while those who developed OCD after 18 (N=76) were accepted to have late-onset (LO) OCD. **Results:**

There were no significant differences between the groups with respect to age, gender, course of the illness, level of insight, total, obsession, and compulsion subscale score of Y-BOCS; the scores of HDRS and HARS; and the mean number of obsession and compulsions. We have also found no significant differences in terms of obsessions of aggression, symmetry, sexual, somatic, and miscellaneous; ritualistic behaviors; compulsion of ordering/arranging; and miscellaneous. Previous history of tic disorder, educational level, obsessions of hoarding and religion, compulsions of hoarding, and comorbid diagnosis of OCPD was more likely to be higher in the EO group than in the LO group. Stressful life events, obsession of contamination and compulsions of checking were found to be higher in the LO group compared to the EO group. **Conclusion:** In this study, we have found that there were considerable sociodemographic and clinical differences between EO and LO OCD patients. Therefore, we can conclude that age at onset of OCD may represent distinct subtypes of OCD.

No. 41

A Randomized Controlled Trial of DBS in OCD: Comparison of Ventral Capsule/Ventral Striatum and Subthalamic Nucleus Targets

Poster Presenter: Himanshu Tyagi

Co-Author: Eileen Joyce

SUMMARY:

OCD has a lifetime prevalence of one to two percent. Studies of DBS for OCD have shown improvement in both symptoms and quality of life in severe OCD. Two targets in particular have shown promise: the anteromedial subthalamic nucleus (STN) and the ventral capsule (VC)/ventral striatum (VS). It is not clear, however, if one site has advantages over the other and, with regard to the VC/VS site, whether stimulation of the anterior capsule white matter or ventral striatum/nucleus accumbens grey matter is critical for improvement. We report a within-subject comparison of the effect of DBS on OCD symptoms at STN and VC/VS sites both individually and together (ClinicalTrials.gov #NCT02655926). The aims of the study were to determine 1) the efficacy of DBS at each site; 2) whether stimulation of both sites improves the response compared to either site alone; and 3) the critical stimulation contacts at the

VC/VS site. Six participants with severe, treatment-refractory OCD were recruited via the UK specialist OCD service and underwent implantation of bilateral electrodes at both the VC/VS and anteromedial STN sites. A Leksell frame-based MRI-guided and MRI-verified approach under general anesthesia was used. The subthalamic nucleus was localized on axial T2-weighted stereotactic images and the VC/VS localized on coronal and axial proton density images (Siemens, 1.5T). Using a double-blind crossover design, 12 weeks of stimulation at STN and VC/VS sites were compared, followed by stimulation at both sites for 12 weeks. The primary outcome measure was YBOCS: an improvement of greater than or equal to 35% was the predefined response. Accurate stereotactic and anatomical lead location was confirmed on immediate postoperative stereotactic MR images in all patients. For the VC/VS target, the deepest DBS lead contact was within the nucleus accumbens, the one superior to that in the "shell" of the nucleus accumbens, while the superior two contacts were within the inferior aspect of the anterior limb of the internal capsule. The response rates were STN=3/6, VC/VS=5/6 and STN+VC/VS=5/6. In the one non-responder, YBOCS reduction was 32% after the combined STN+VC/VS stimulation phase. For the whole group, the mean reduction in YBOCS scores were STN=16.3, VC/VS=19.2 and STN+VC/VS=22.0, which represents a mean reduction of 42%, 53% and 62% from their own baseline scores and a reduction to predefined mild/subclinical symptoms of 0%, 50% and 50%, respectively. The top two DBS contacts of the quadripolar lead were found to be the most effective at the VC/VS target in all six patients. These results suggest that 1) the VC/VS site may be superior to the STN site for the amelioration of severe OCD symptoms; 2) there is only a modest advantage of stimulating both sites together; and 3) the effective stimulation site for the VC/VS target is the inferior aspect of the anterior limb of the internal capsule and not the ventral striatum/nucleus accumbens grey matter.

No. 42

Investigation of the Relation Between Mothers' Alexithymia and Somatic Complaints and Children's Obsessive-Compulsive Features

Poster Presenter: Hüseyin Ünübol

SUMMARY:

The aim of the study is to determine the level of alexithymic properties and somatization levels in mothers affecting the obsessive-compulsive features in children. The study is composed of 173 volunteer students and their mothers randomly selected in Turkey. There is a significant positive correlation between the TAS-20 applied to the families and the Maudsley Obsessive-Compulsive Scale (MOCS) applied to children. As a result of the increase in obsessive-compulsive properties in children due to alexithymia in the parents, it can be considered that a mother who has difficulties in reflecting her feelings may also have difficulty in reflecting her feelings toward her child. There was a significant positive correlation between scores from SCL-90 scales (somatization subscale) and scores from MOCS, which measures children's obsessive compulsive properties ($r=0.776$, $p<0.01$). The scores of the TAS-20 recognizing emotions, expressing emotions and outward thinking subscale and SCL-90 (somatization subscale) scores and the scores of children's scores on the Control, Cleanliness and Affection subscale of the MOCS scale had a moderately positive relationship. No significant correlation was found between the scores of the subjects in TAS-20 and SCL-90 (somatization subdimension) and the scores of children in the MOCS rumination subdimension.

No. 43

The Effectiveness of CBT Combined With Drug Therapy for Obsessive-Compulsive Disorder: A Multicenter Randomized Controlled Trial

Poster Presenter: Zhanjiang Li

SUMMARY:

Selective serotonin reuptake inhibitors (SSRIs) and cognitive behavior therapy (CBT) are the first-line treatments for obsessive-compulsive disorder (OCD), but at least 40% of OCD patients have not had any response after receiving SSRIs or CBT. Although previous Western studies found that CBT combined with drug therapy shows better effect than simple drug therapy, there are few relevant control studies in China. This study compared the effectiveness of CBT combined with SSRI treatment and simple SSRI treatment for OCD patients in China. 214 OCD

patients were recruited from the outpatient departments in three psychiatric hospitals and one general hospital in China and randomly allocated to a group of CBT combined with SSRIs and a group of SSRIs to receive treatments for 24 weeks. The Y-BOCS, HAM-A and Global Assessment Function (GAF) were used to assess the clinical symptoms and social functions of all participants blindly by psychiatric doctors who didn't attend this study at zero, four, eight, 12, 24, 36, and 48 weeks. We compared the effectiveness of the two groups using repeated measure variance analysis. The data of 167 patients were analyzed, including 75 patients in the SSRIs group and 92 patients in the combined group. There was no difference in sex, age, educational level, marital status, place of residence, occupation, family income, disease duration, and clinical score between the two groups. At the fourth week of therapy, the Y-BOCS total score became lower than baseline in both groups (SSRIs group: 20.8 ± 7.0 vs. 23.7 ± 6.3 , $t=3.46$, $p=0.001$; combined therapy group: 20.0 ± 6.4 vs. 23.6 ± 6.0 , $t=4.05$, $p=0.000$). The repeated measure variance analysis between groups showed that the Y-BOCS total scores and compulsion scores of the two groups had significant effects from the eighth week to the 48th week, and the Y-BOCS obsession scores of the two groups had a significant effect at the 48th week. There was a significant difference in the effective rates between the combined group and the SSRI group at the 24th week and the 48th week (82.6% vs. 52% and 83.7% vs. 50.7%, respectively, $p<0.05$). Both the HAM-A and GAF scores decreased after treatment in the two groups, with no difference between groups at the end of the treatment. This study first evaluated the effectiveness of two therapies, including CBT combined with SSRIs and single SSRI therapy, for OCD patients in China. The findings suggest that CBT combined with SSRI therapy could effectively alleviate the clinical symptoms and social function of OCD better than single SSRIs, especially for compulsive behavior.

No. 44

Mediating Effects of Personality Traits Between Early Trauma and Obsessive-Compulsive Symptoms in OCD Patients

Poster Presenter: Zhen Wang

Co-Authors: Tingting Xu, Qing Zhao

SUMMARY:

Background: Many obsessive-compulsive disorder (OCD) patients reported childhood trauma in studies from different cultures. This study explores the tri-relationship among the different types of early trauma, personality traits and clinical symptom, and analyses the mediating effects of maladaptive personality traits between early trauma and obsessive-compulsive symptoms. **Methods:** A total of 147 OCD patients were selected. The Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Early Trauma Inventory Short Form (ETI-SF) and NEO Five-Factor Inventory (NEO-FFI) were administered to all participants. **Results:** Early trauma and personality traits were highly correlated with obsessive-compulsive symptoms. Pathway analysis showed there was no statistically significant direct effect from early emotional abuse to obsessive compulsive symptoms (0.07, 95%CI [-0.11, 0.21], $p=0.409$); however, the indirect effects from emotional abuse via neuroticism were significant (0.11, 95%CI [0.04, 0.19], $p=0.015$); moreover, neuroticism plays a completely mediating role, while the mediating effects of agreeableness between early trauma and symptoms were not significant. **Conclusion:** Childhood trauma experience may promote individual form maladaptive personality characteristics, thus increasing the risk of obsessive-compulsive disorder. This study was supported by a grant from the National Natural Science Foundation of China (No.81671340).

No. 45

The Influence of Hospitalization Time on Activities of Daily Living in Patients With Schizophrenia

Poster Presenter: Yun Bian

SUMMARY:

Background: Schizophrenia is one of the most disabling illnesses and causes impairments in everyday functioning. It has been generally accepted that long-term hospitalization is not conducive to functional recovery, but few studies suggest exactly how long hospitalization should be for patients with schizophrenia. This study investigates the relationship between activities of daily living (ADL) and hospitalization time to explore the optimal hospitalization time for patients with schizophrenia.

Methods: We collected information from all schizophrenia patients discharged in Beijing Hui-Long-Guan Hospital from January 1, 2015, to December 31, 2015. After the data cleaning process, a total of 1,967 patients were enrolled in this study. The Barthel Index was used to assess patients' actual performance on ADL. We used paired samples t-test to compare ADL at admission and discharge. Furthermore, we used correlation analysis to find the trend of ADL change with hospitalization time. **Results:** The average hospitalization time was 73.3 ± 42.2 (range=1–387) days. There were significant differences between ADL scores at the time of hospital discharge compared with the time when they were admitted to hospital (93.4 ± 11.2 vs. 88.7 ± 11.8 , $p < 0.001$). The difference of ADL scores between discharge and admission (discharge-admission) was 4.6 ± 8.5 (range=-95–80), including 914 (46.5%) increase, 1,019 (51.8%) constant and 34 (1.7%) decrease. Taking hospitalization days as grouping boundary value, the correlation analysis in subgroup found that below a minimum of 10 days, the improvement in ADL scores increased with the increase of hospitalization time, and above a maximum of 50 days, the improvement in the ADL scores decreased with the increase of hospitalization time. **Conclusion:** The optimal hospitalization time for patients with schizophrenia may be between 10 and 50 days, with regard to the recovery of daily living function. This work was supported by Beijing Natural Science Foundation (grant number: 7154208). **Keywords:** Schizophrenia, Activities of Daily Living, Hospitalization Time

No. 46

WITHDRAWN

No. 47

Cytokine Mediators of Inflammation (IL-6) and Immunity (IL-2): Associations With Psychiatric Disorders, Demographics, BMI, and Disaster

Poster Presenter: Phebe M. Tucker, M.D.

Co-Authors: Pascal Nitiema, M.D., M.P.H., M.S., Qaiser S. Khan, M.D.

SUMMARY:

Background: The roles of inflammation and the immune system in mental and physical health is of increasing focus in research. We explored the

relation of two cytokines involved in inflammation (interleukin-6) and immune functioning (interleukin-2) with psychiatric diagnosis and several other factors. **Methods:** We assessed 40 Hurricane Katrina survivors relocated to Oklahoma and 40 demographically matched controls for the relationship of serum IL-6 and IL-2 with psychiatric diagnosis (SCID-IV), demographics, basal metabolic index (BMI), and disaster exposure. Recruited participants were free of cardiovascular, psychiatric or inflammatory medications, or illnesses that could confound psychometric and interleukin measures. Participants were mostly African American (N=70, 87.5%). Student t-tests for independent samples compared the mean of log-transformed IL-2 and IL-6 values across demographics and morbidities. Correlation between IL-2 and IL-6 levels was assessed with the Pearson's correlation coefficient. Linear regression models with logarithmic transformation of the dependent variable compared cytokine levels in survivor and control groups after controlling for demographics and psychiatric diagnoses. **Results:** Relocated Katrina survivors had higher proportions of current PTSD ($\chi^2=10.32$; $df=1$; $p=0.0013$), current major depression ($\chi^2=7.81$; $df=1$; $p=0.0052$) and any current psychiatric diagnosis ($\chi^2=12.83$; $df=1$; $p=0.0003$) than controls. Unexpectedly, exposure to a massive hurricane and relocation was not associated with differences in IL-6 or IL-2 levels. A multivariable linear regression model adjusting for demographics, BMI and current psychiatric disorder found that log units of IL-6 levels were higher in females than males, in participants with higher BMI, and in respondents with any current psychiatric diagnosis assessed. Log units of IL-2 levels were significantly higher in African Americans compared to other ethnicities and in respondents diagnosed with a psychiatric disorder. **Conclusion:** Results confirm that exposure to disaster is associated with higher risk for several mental disorders when survivors are compared to demographically similar controls. However, this exposure was not sufficient to lead to differences in the inflammatory and immunologic mediators we assessed. Rather, both cytokines were influenced by demographic variables and nonspecifically by the presence of a mental disorder. Higher levels of IL-6 in females, participants with mental disorders and those with higher BMIs (a modifiable health risk)

suggest that individuals with these characteristics should be assessed for inflammatory or cardiovascular risk factors or diseases. Higher levels of IL-2 in African Americans and those with mental disorders have unknown medical consequences, with potential positive or negative effects on the immune system if prolonged.

No. 48

Intracranial Volume Measurement for Children With ADHD by Using an Automatized Program

Poster Presenter: Siekyeong Kim, M.D., Ph.D.

SUMMARY:

Background: Total intracranial volume (TIV) is a major nuisance of neuroimaging research for interindividual differences of brain structure, especially volume study. We intended to prove the reliability of the atlas scaling factor (ASF) method for TIV estimation in child populations with or without attention-deficit/hyperactivity disorder (ADHD) by comparing it with the results of manual tracing as reference method. **Methods:** Twenty-six normal children (control group) and 26 children with ADHD (ADHD group) were scanned with 3T Siemens Magnetom Trio Tim scanner. The TIVs of all participants were estimated by using the ASF method from FreeSurfer reconstruction and manual tracing from AFNI suite with region of interest average plugin. Manual tracing was performed in every 10th slice of MRI dataset from midline of sagittal plane by one researcher who was blinded from clinical data. Demographics and surface-based parameters such as cortical thickness, surface area and gray matter volume were compared by chi-square or Mann-Whitney U test. Fisher r-to-z transformation was used for group comparison of correlation strength ($z=0.72$, $p=0.24$). **Results:** There were no significant differences of age and gender distribution between control and ADHD groups. At the same time, we could not find any group differences of cortical thicknesses, surface areas and gray matter volumes with TIV correction across the entire cortical mantle. Strong correlation between TIVs from two different methods were shown ($r=0.90$, $p<2.2e^{-16}$), and there were no group differences of these correlation strengths.

Conclusion: The ASF method for TIV estimation by using FreeSurfer showed good agreement with the

reference method. We can use the TIV from the ASF method for correction in analysis of structural and functional neuroimaging studies with not only elderly subjects but also children, even with ADHD.

No. 49

The Neural Mechanisms Underlying the Processing Cost of Using False Belief: An ERP Study

Poster Presenter: Yong-guang Wang

Co-Author: Jian-fei Shi

SUMMARY:

Background: Previous studies have demonstrated that applying another's false belief seems to require substantial effort. To investigate the neural mechanism underlying the processing cost of false belief, we recorded human event-related brain potentials (ERP) while participants performed the task of applying belief or image in a cued task-switching procedure. **Methods:** We tested 15 neurologically healthy volunteers (eight women; mean age=24.53, range=22–30) with normal or corrected-to-normal vision. Participants performed 128 trials of applying belief, 128 trials of applying image and 128 trials of applying reality with a task-switching design. Continuous electroencephalogram was recorded using 64-channel Neuroscan version 4.3. **Results:** RTs in trials with conflict information ($M=709.01\text{ms}$, $SD=248.81\text{ms}$) were longer than trials without conflict information ($M=644.32\text{ms}$, $SD=205.03\text{ms}$) ($F[1,14]=9.14$, $p<0.01$). A late frontal negativity (LFN) was followed by instruction cue. Significant interaction between task type and trial type were found in electrode site F3 ($F[1,14]=9.51$, $p<0.01$) and F4 ($F[1,14]=6.41$, $p=0.01$). Mean LFN amplitude for switching trials in electrode site F3 was significantly more negative than repeated trials ($t[28]=-4.11$, $p<0.01$) in task of applying image, but not in task of applying belief. On the contrary, mean LFN amplitude for switching trials in electrode site F4 was significantly more negative than repeated trials ($t[28]=-4.27$, $p<0.01$) in task of applying belief, but not in task of applying image. A frontocentral N2 was followed by stimulus cue. Significant interaction between trial type and stimulus type was revealed in electrode site F4 ($F[1,14]=15.65$, $p<0.01$). Mean N2 amplitude in switching trials was more negative than repeated trials when the stimulus was with conflict information ($t[58]=-2.23$, $p=0.03$), but not the

stimulus without conflict information ($p>0.1$).

Conclusion: Evidence of two critical behavior control processes (task preparation and response selection) in applying others' false beliefs was present. Findings also support the idea that the right hemisphere, rather than the left hemisphere, may be having a particularly specific role in theory of mind.

No. 50

Prazosin Use in Children and Adolescents With Posttraumatic Stress Disorder Who Have Nightmares: A Systematic Review

Poster Presenter: Adefolake Akinsanya, M.D.

Co-Authors: Raman Marwaha, M.D., Rajesh R.

Tampi, M.D., M.S.

SUMMARY:

Objective: The aim of this systematic review is to identify published articles that evaluated the use of prazosin for the treatment of nightmares in children and adolescent who have posttraumatic stress disorder (PTSD). **Methods:** A literature search was conducted of PubMed, Medline, Embase, Cochrane Collaboration, and PsycINFO databases for published articles in any language that evaluated the use of prazosin for treatment of nightmares in the context of PTSD in children and adolescent using keywords trauma, PTSD, nightmares, prazosin, children, adolescents, and sleep. **Results:** A total of nine published articles related to the use of prazosin for treatment of nightmares in PTSD in children and adolescents were identified. Six of the nine articles were case reports. One common agreement between all the articles was that pharmacotherapy for PTSD in children is not well established. However, several studies, including case reports, poster presentations, chart reviews, open-label trials, and randomized placebo-controlled trials in adults, have been published and have shown remarkable improvement of nightmares associated with PTSD. Symptoms such as nightmares and hypervigilance in PTSD are thought to be related to noradrenergic hyperactivity, suggesting the effectiveness of prazosin, a centrally acting α -1 adrenergic antagonist, in reducing the intensity and frequency of PTSD-related symptoms. All of the case reports showed marked improvement in nightmares when prazosin was used though at a generally lower dose when compared to its use in adults, with dosing

ranging from 1–4mg per day. Three of the case reports reported an increase in intensity and frequency of nightmares following discontinuation of prazosin in children and adolescent with PTSD-associated nightmares who had been previously treated with prazosin and had reported remission of these nightmares. **Conclusion:** Prazosin has shown promising outcomes in treatment of nightmares associated with PTSD in children and adolescents, although this has not been well studied. Future placebo-controlled trials are needed to assess the efficacy and safety of prazosin in the treatment of PTSD-related nightmares in children and adolescents.

No. 51

Effectiveness of Lurasidone in Adolescents With Schizophrenia: Interim Analysis of a 24-Month, Open-Label Extension Study

Poster Presenter: Celso Arango

Co-Authors: Christoph U. Correll, M.D., Michael Tocco, Ph.D., Robert Goldman, Josephine Cucchiaro, Ling Deng, Ph.D., Antony Loebel, M.D.

SUMMARY:

Background: Approximately one-third of cases of schizophrenia have an onset before the age of 20; however, efficacy data from prospective studies are still relatively limited, especially data from studies of 12 months or longer. Lurasidone is an atypical antipsychotic that has demonstrated efficacy in the treatment of schizophrenia in both adults and adolescents. The aim of this open-label trial was to obtain preliminary data on the long-term effectiveness of lurasidone in adolescents with schizophrenia. **Methods:** Patients 13–17 years old with a *DSM-IV-TR* diagnosis of schizophrenia who completed a six-week, double-blind, placebo-controlled lurasidone treatment study were eligible for enrolment in an extension study of the safety and effectiveness of 24 months of open-label, flexible-dose treatment with lurasidone 20–80mg per day, with an initial dose of 40mg per day for the first seven days. This analysis summarizes the effectiveness results from an interim analysis of an ongoing two-year study. Effectiveness measures included the Positive and Negative Syndrome Scale (PANSS) total and positive and negative subscale scores and the Clinical Global Impression-Severity

(CGI-S) score. An ANCOVA was performed on last observation carried forward data (LOCF) available at week 28. **Results:** A total of 180 patients entered the extension study (57.8% male; mean age=15.6 years). The mean daily dose of lurasidone during the open-label treatment period was 55.8mg per day, and the proportion of patients using a modal dose of 20, 40, 60, and 80mg was 2.3%, 40.4%, 25.1%, and 32.2%, respectively. At the end of six weeks of double-blind treatment, improvement was greater with lurasidone (N=123) compared to placebo (N=57) on the PANSS total score (-21.3 vs. -14.9), PANSS positive subscale score (-7.0 vs. -4.1), PANSS negative subscale score (-4.9 vs. -3.7), and CGI-S score (-1.0 vs. -0.6). After 28 weeks of open-label treatment with lurasidone, additional improvement (from open-label baseline) was observed based on results of an LOCF analysis of the PANSS total score (-7.9), PANSS positive subscale score (-2.9), PANSS negative subscale score (-1.6), and CGI-S score (-0.6). Patients initially treated with double-blind placebo demonstrated greater improvement during the open-label lurasidone treatment phase, resulting in a level of improvement in PANSS total and subscale scores at week 28 that was similar to the improvement observed in the lurasidone continuation treatment group. Reasons for study discontinuation consisted of withdrawal of consent (12.8%), adverse events (11.1%), lost to follow-up (4.4%), lack of efficacy (4.4%), and other reasons (5.6%). **Conclusion:** Long-term treatment with lurasidone was associated with sustained improvement in psychotic symptoms as measured by the PANSS total and subscale scores in this interim analysis of 28 weeks from an open-label 24-month extension study of adolescents with a diagnosis of schizophrenia.

No. 52

Anxiety Among U.S. Syrian Refugee Children

Poster Presenter: Cynthia L. Arfken, Ph.D.

Co-Authors: Luay Haddad, Zeina Alobaidi, Zainab Abdulhameed, Farah Alani, Christopher Trentacosta, David Rosenberg, M.D., Arash Javanbakht

SUMMARY:

Background: The Syrian civil war has exposed millions of civilians to extreme physical and emotional trauma. However, little is known about

the mental health impact on refugee children. As part of a larger study on Syrian refugees, we present the design and preliminary data from the first 59 children screened. **Methods:** All resettled refugees must have a health assessment at contracted primary care clinics soon after arrival. Our bilingual/bicultural team 1) recruits participants (age 6—80) at the clinics located in Southeastern Michigan, 2) obtains consent and 3) screens using the PTSD Checklist (PCL) for adults and Screen for Child Anxiety Disorder (SCARED) for children, along with other measures. Hair and saliva samples are collected from each participant. **Results:** Overall, we have recruited 94.9% of eligible refugees. The 59 children (45.8% female) in this analysis (20 families) were, on average, 11.3 years old. The mean PCL was 49.1 for the 19 mothers and 37.8 for the 14 fathers. Mean SCARED score for the children was 28.5. Using recommended cutoffs for total scale and subscales, 61% of children had probable anxiety diagnosis, and 84.7% had probable separation anxiety. In analyses accounting for clustering, higher total SCARED score was associated with higher maternal PCL score ($p=0.05$) and children with probable separation anxiety were younger ($p=0.037$). **Conclusion:** The high prevalence of anxiety suggests that interventions are acutely needed for refugee children from Syria. Given the unique cultural factors within this population, future study of biological markers of trauma should provide valuable information.

No. 53

Safety of Lurasidone in Adolescents With Schizophrenia: Interim Analysis of a 24-Month, Open-Label Extension Study

Poster Presenter: Christoph U. Correll, M.D.

Co-Authors: Celso Arango, Michael Tocco, Ph.D., Robert Goldman, Josephine Cucchiaro, Ling Deng, Ph.D., Antony Loebel, M.D.

SUMMARY:

Background: Use of second-generation antipsychotics (SGA) in the treatment of adolescents with schizophrenia has been associated with different safety concerns, including weight gain, increased glucose and lipids, and hyperprolactinemia. However, few data are available from prospective studies that demonstrate the long-

term safety of SGA. Lurasidone is an atypical antipsychotic that has demonstrated efficacy in the treatment of schizophrenia in both adults and adolescents. The aim of this open-label trial was to obtain data on the long-term safety of lurasidone in adolescents with schizophrenia. **Methods:** Patients 13–17 years old with a *DSM-IV-TR* diagnosis of schizophrenia who completed a six-week, double-blind, placebo-controlled lurasidone treatment study were eligible for enrolment in an extension study of the safety and effectiveness of 24 months of open-label, flexible-dose treatment with lurasidone 20–80mg per day. This analysis summarizes the safety results from an interim analysis of an ongoing two-year study. Safety measures included frequency of treatment-emergent adverse events and changes from open-label baseline in mean weight and median metabolic parameters and prolactin (observed case analysis). **Results:** A total of 180 patients entered the extension study (57.8% male; mean age=15.6 years), of whom, 38.3% discontinued prematurely. Reasons for study discontinuation consisted of withdrawal of consent (12.8%), adverse events (11.1%), lost to follow-up (4.4%), lack of efficacy (4.4%), and other reasons (5.6%). The mean daily dose of lurasidone during the open-label treatment period was 55.8mg per day, and the proportion of patients using a modal dose of 20, 40, 60, and 80mg was 2.3%, 40.4%, 25.1%, and 32.2%, respectively. Discontinuation due to adverse events occurred in 11.1% of patients; the three most frequent adverse events leading to study discontinuation were schizophrenia (3.9%), suicidal ideation (1.7%) and psychotic disorder (1.1%). In the placebo-to-lurasidone treatment group (N=57), the five most frequent adverse events were headache (24.6%), nausea (14.0%), increased weight (14.0%), anxiety (10.5%), and agitation (10.5%), and in the lurasidone-continuation group (N=123), the five most frequent adverse events were headache (16.3%), anxiety (11.4%), agitation (10.6%), schizophrenia (8.9%), and depression (8.1%). Small median changes at 12 months were noted for cholesterol (+0.7mg/dL), triglycerides (+4.1mg/dL), glucose (+0.6mg/dL), and prolactin (males +0.1ng/mL; females +0.5ng/mL). Mean change in weight at 12 months was +5.7kg (versus an expected weight gain of +2.8kg). **Conclusion:** Long-term treatment with lurasidone was associated with few

effects on body weight, lipids, glucose, and prolactin in this interim analysis of 12-month data from an open-label 24-month study of adolescents with a diagnosis of schizophrenia. The safety profile was consistent with results from previous adult studies with lurasidone.

No. 54

Can Peripheral Brain-Derived Neurotrophic Factor Be a Biomarker of Autism Spectrum Disorder in Children and Adolescents? A Meta-Analysis

Poster Presenter: Chuanzhong Ye

Co-Authors: Zhijian Hu, Jing Zheng, Fanglin Zhang

SUMMARY:

Background: Autism spectrum disorder (ASD) is a biologically based neurodevelopmental disorder characterized by deficits in social communication and interaction and restricted, repetitive patterns of behavior, interests and activities. The identification of peripheral biomarkers will significantly impact the diagnosis and an individualized early treatment. Brain-derived neurotrophic factor (BDNF) is a neurotrophin that plays a vital role in the synaptic plasticity and survival of neurons. **Objective:** The aim of this meta-analysis was to assess whether peripheral BDNF levels could be used as a diagnostic/biological marker for ASD in children and adolescents. **Methods:** Eligible studies were retrieved from the databases MEDLINE, EMBASE, Cochrane Library, CINAHL, PsycINFO, and CNKI. Two investigators selected related studies and assessed methodological quality independently. Standardized mean differences (SMDs) were generated from random effects models. The risk of publication bias was assessed using funnel plots and Egger's test. Potential sources of heterogeneity were explored in subgroup analyses (biomaterial sources, analytical technology, publication year, research region, etc.). **Results:** Seventeen studies were included in this meta-analysis, with a total of 1,508 cases and 1,190 controls accrued. No publication bias was found in the meta-analysis. A significantly higher level of BDNF was found in ASD patients compared with healthy controls (SMD=0.63, 95% confidence interval [CI] [0.24, 1.02], $p<0.001$). This was also true in the subgroup of children (newborn to 12 years old) with ASD (SMD=0.70, 95% CI [0.25, 1.14], $p=0.000$). However, there is no statistically significant

difference in the adolescent subgroup (13 to 18 years old) between ASD patients and controls (SMD=0.30, 95% CI [-0.55, 1.14]). Biomaterial source analysis showed that plasma (two studies) and serum (13 studies) subgroups had increased BDNF levels compared to healthy control, but not in newborn blood spots (two studies). Studies conducted in North and South America (five studies) populations revealed significant higher BDNF in ASD compared with controls (SMD=0.70, 95% CI [0.05, 1.36], $p=0.000$). This significant difference was not seen in studies conducted in Asia, Europe and Saudi Arabia. **Conclusion:** Our meta-analysis suggests that peripheral BDNF levels could be a potential biomarker of children with ASD. Large-scale, adequately designed, prospective trials are needed to further confirm the value of BDNF in ASD as well as to understand the underlying mechanisms.

No. 55

Bipolar, DMDD or What? Re-Evaluation of Clinical Diagnoses of Children in Light of the DSM-5

Poster Presenter: David L. Pogge, Ph.D.

Co-Authors: Daria Chase, M.A., Maria Rozon, M.A., Stephen Pappalardo, M.A., Martin Buccolo, Ph.D., Philip D. Harvey, Ph.D.

SUMMARY:

Background: There was a period of time when the rate of diagnoses of bipolar disorder among children increased dramatically and the diagnosis of mood disorder NOS was often assigned as a proxy for bipolar disorder. During the development of the DSM-5, it was suggested that these diagnoses were often incorrect and many should be assigned the newly minted diagnosis of disruptive mood dysregulation disorder (DMDD). We used structured diagnostic procedures to reevaluate clinical diagnoses of bipolar and mood disorder NOS in a sample of child psychiatric inpatients treated prior to the introduction of the DSM-5. Our goal was to determine 1) how many of the bipolar diagnoses could be validated when DSM-5 criteria are rigorously applied and 2) how many would meet criteria for DMDD. **Methods:** The charts of 100 child psychiatric inpatients (age 5–14) were reviewed using a systematic re-diagnosis procedure. All participants were required to have a chart diagnosis of bipolar disorder or mood disorder NOS in

combination with high levels of hostility or euphoria at admission. Two trained raters independently reviewed these charts using a checklist based on the DSM-5. Admission and discharge diagnoses were compared to those obtained using the structured procedure. **Results:** Of the 100 cases, 70% had admission diagnoses of bipolar disorder, and 27% were mood disorder NOS with hostility or euphoria. Fifty-nine percent of discharge diagnoses were bipolar, and 39% were mood disorder NOS with euphoria or hostility. None met DSM-5 criteria for bipolar disorder based on the structured diagnostic procedure. Thirty-seven percent met criteria for DMDD, 39% met DSM-5 criteria for conduct disorder, 10% met criteria for psychotic disorders, and the remainder met criteria for PTSD and anxiety disorders. Eighty-four percent of those diagnosed with DMDD based on structured review had been diagnosed with a bipolar disorder at admission.

Discussion: These data suggest that clinical diagnoses of bipolar disorder assigned to children in the past have often been incorrect. Many, but not most, meet DSM-5 criteria for DMDD. Many of those misdiagnosed met criteria for conduct disorder, and a substantial subgroup suffered from psychotic disorders. Even allowing for the limitations of diagnoses based on clinical chart information, these data suggest that there has been a substantial overdiagnosis of bipolar disorder in children in the past. This may have led to treatments of minimal efficacy for the conditions from which they actually suffer. Finally, it appears that DMDD occurs with considerable frequency in the inpatient population and accounts for many of the children misdiagnosed with bipolar disorder; however, the unavailability of this category cannot fully explain the overdiagnosis of bipolar disorder in children prior to the DSM-5.

No. 56

Adverse Childhood Experience Is Associated With Impaired Coronary Distensibility Index and Predicts Major Adverse Cardiovascular Events

Poster Presenter: Naser Ahmadi, M.D., Ph.D.

Co-Authors: Robert Pynoos, M.D., M.S., Fereshteh Hajsadeghi, M.D., Peter Hauser, M.D., Garth Olango, M.D., Ph.D., Mohammed Molla, M.D.

SUMMARY:

Background: Impaired coronary distensibility index

(CDI) is a marker of vascular dysfunction, measures an endothelial-dependent process, is associated with vulnerable plaque composition, and predicts major adverse cardiovascular event (MACE). This study investigated the relation of impaired CDI and adverse childhood experience (ACE) with MACE.

Methods: 246 subjects (age range=18–70, 31% women) with (N=79) and without (N=167) ACE who underwent computed tomography angiography (CTA) for clinical indication and their CDI was measured and followed up for a mean of 60 months. ACE was measured using the Childhood Trauma Questionnaire (CTQ) and Dimensions of Stressful Events Rating Scale (DOSE). CDI in left anterior descending artery (LAD) was defined as early diastole mid-diastole lumen cross section area (CSA) divided by lumen CSA in mid-diastole time central pulse pressure, all times 1,000. MACE was defined as myocardial infarction or cardiovascular death. Survival regression was employed to assess the relation of impaired CDI and ACE with MACE.

Results: A significant inverse correlation between CDI and Clinical Global Impression Scale (CGI) of ACE symptoms was noted ($r^2=0.61$, $p=0.001$). CDI was significantly lower in subjects with ACE, compared to those without ACE (3.1 ± 0.2 vs. 4.6 ± 0.2 , $p=0.001$). Regression analyses revealed that ACE is independently associated with MACE ($p<0.05$). The relative risk of each standard deviation decrease in CDI was 37% higher in subjects with ACE compared to subjects without ACE ($p=0.001$). The relative risk of MACE was 34% higher in those with ACE and 95% higher with each standard-deviation decrease in CDI ($p=0.001$). Regression analyses revealed a significant association between ACE and impaired CDI with increased MACE. Furthermore, regression analyses revealed a significant decrease in risk of MACE in ACE without impaired CDI, compared to ACE with impaired CDI ($p<0.01$). This study has several limitations. This study was a single center analysis of a cohort of subjects with and without ACE. We utilized CTQ and DOSE for assessing ACE due to the availability of these measures for all study subjects and lack of availability of other standardized scales for this population. **Conclusion:** Impaired CDI is strongly associated with the severity of ACEs' symptoms and predicts an increased risk of MACE in subjects with ACE. Furthermore, lack of CDI impairment in individuals with MACE is associated

with reduced risk of MACE. This highlights the important role of CDI in identifying individuals with ACE at risk for MACE.

No. 57 WITHDRAWN

No. 58 30-Day Remission Rates in Severe Postpartum Depression: Secondary Endpoints From a Phase 2 Trial of SAGE-547 Injection

Poster Presenter: Helen Colquhoun

Lead Author: Stephen Kanés

Co-Authors: Handan Gunduz-Bruce, Shane Raines, Ryan Arnold, Amy Schacterle, James Doherty, C. Neill Epperson, Kristina Deligiannidis, Robert Riesenber, Ethan Hoffmann, Jeffrey Jonas, Samantha Meltzer-Brody

SUMMARY:

Background: Postpartum depression (PPD) is a serious and common disorder affecting an estimated 10 to 20% of new mothers. Failure to effectively treat PPD can have severe consequences for the mother and family, and there are no medications specifically indicated for the treatment of PPD. Peripartum fluctuations in reproductive hormones, such as progesterone and its metabolite allopregnanolone, have been hypothesized to play pivotal roles in the pathophysiology of PPD, supporting the rationale for the exploration of allopregnanolone as a potential treatment for PPD. This phase 2 study evaluated SAGE-547 injection, a proprietary formulation of the neuroactive steroid allopregnanolone, in the treatment of severe PPD. **Methods:** This phase 2, double-blind, placebo-controlled study enrolled 21 women with severe PPD. Patients were randomized 1:1 to SAGE-547 injection (N=10) or placebo (N=11) and were administered IV infusions for 60 hours. Participants were required to have had a major depressive episode that began no earlier than the third trimester and no later than the first four weeks following delivery, to be six or more months into the postpartum period at enrollment, and have a 17-item Hamilton Rating Scale for Depression (HAM-D) total score of at least 26. The primary outcome was the change from baseline in the HAM-D total score at 60 hours compared to placebo. Secondary HAM-D

endpoints included assessment of the remission rate (total score of 7). The safety and tolerability of SAGE-547 injection were evaluated by summaries of adverse events (AEs), clinical laboratory measures, vital signs, and ECGs (including changes from baseline). **Results:** Administration of SAGE-547 injection in women with severe PPD resulted in a statistically significant reduction in HAM-D total score compared to placebo at 60 hours ($p=0.008$). The effect was statistically significant starting at 24 hours of treatment ($p=0.006$) and was maintained through the 30-day follow-up ($p=0.01$). The SAGE-547 injection-treated group also demonstrated statistically significant depression remission (HAM-D=7) versus the placebo-treated group at 24 ($p=0.024$), 48 ($p=0.030$), 60 ($p=0.008$), and 72 ($p=0.030$) hours, as well as days 7 ($p=0.003$) and 30 ($p=0.030$). The remission rate at 60 hours for SAGE-547 injection-treated group was 70% versus nine percent in the placebo-treated group. Seventy percent of SAGE-547 injection-treated patients were in remission at 30 days versus 18% of placebo-treated patients. SAGE-547 injection was generally well tolerated, with no serious adverse events (AEs), deaths or discontinuations due to AEs. Four patients reported AEs while on SAGE-547 injection, and eight patients reported AEs with placebo. **Conclusion:** Women with severe PPD who received SAGE-547 injection in the trial experienced rapid, marked and sustained reduction in HAM-D total score and statistically significant depression remission versus placebo-treated patients. SAGE-547 injection was generally well tolerated, supporting further investigation as a PPD therapy.

No. 59

The Epidemiology of Postpartum Depression (PPD) in a Commercially Insured Population

Poster Presenter: Vijayveer Bonthapally

Co-Authors: Michael Broder, Ryan Tieu, Laxmi

Gannu, Samantha Meltzer-Brody, Eunice Chang

SUMMARY:

Background: The most common complication of childbearing, postpartum depression (PPD) is associated with impaired maternal function and poor maternal-infant interactions. Published prevalence estimates vary considerably depending on setting, ascertainment method and period of

observation. We aimed to estimate prevalence in a large, nationally representative commercial insurance claims database. **Methods:** We performed a retrospective cohort study using the Truven MarketScan Commercial Claims database. The study identified claims for all women who gave birth (ICD-9-CM codes V27.x, 650 and 651.x1) between January 1, 2011 and December 31, 2014 (the ID period), were 15 to 50 years old, and were continuously enrolled one year before and one year after delivery. The main analysis used a six-month postpartum period to identify PPD, which was defined as 1) one inpatient claim for PPD (ICD-9-CM 648.44); 2) two outpatient claims with at least one for PPD plus one additional for PPD, major depression (MDD) (ICD-9-CM 296.2x, 296.3x), adjustment disorder (AD) (ICD-9 309.x), or depression not otherwise specified (DNOS) (ICD-9 311); or 3) one claim for MDD, AD or DNOS with at least one claim for treatment (psychotherapy, antidepressant or electroconvulsive therapy [ECT]). In order not to include women with ongoing MDD, women identified by non-PPD ICD-9-CM codes were excluded if they had any such code prior to the last trimester of the index pregnancy. In sensitivity analysis (SA) 1, this restriction was removed; in SA 2, the search period was expanded to one postpartum year. We reported prevalence and disease severity, including mild (no treatment), moderate (treatment other than ECT) and severe (hospitalization for PPD/MDD/suicidal ideation or ECT). **Results:** There were 80,920 deliveries in 2012, 80,184 in 2013 and 69,823 in 2014. PPD prevalence in the main analysis (six-month postpartum observation period) was 2.6% ($N=2,123$), 3.2% (2,572) and 3.7% (2,588), respectively. Prevalence was 7.7% in women up to 17 years old, 3.6% in 18- to 34-year-olds and 3.8% in women 35 and over. Mild cases were 2.2% of the population, moderate 95.4% and severe 2.4%. Overall, 82.7% used at least one antidepressant, and 23.2% of moderate and 70.3% of severe patients used two or more different ones. No use of ECT was observed. In SA 1 (allowing preexisting MDD), prevalence was 4.5%, 5.4% and 5.8% in the three years studied. In SA 2 (12-month postpartum observation), it was 4.3%, 4.9% and 5.5%. With both SAs combined, prevalence was 7.3%, 8.1% and 8.4%. **Conclusion:** In this commercially insured population, PPD prevalence, as determined by the algorithm, rose by 11 per 1,000

persons (26 per 1,000 persons to 37 per 1,000 persons) from 2012 to 2014. In 2014, the prevalence ranged between 3.7% and 8.4%, depending on the definition and time period considered for the diagnosis. The majority of patients used at least one antidepressant; nearly a quarter used two or more. Prevalence in claims is lower than seen in previous studies conducted through direct assessment, suggesting PPD may be underdiagnosed and untreated.

No. 60

PLACID: A Randomized Trial of Inhaled Loxapine Versus IM Aripiprazole in Acutely Agitated Patients With Schizophrenia or Bipolar Disorder

Poster Presenter: Luis San

Co-Authors: Olga Bukhanovskaya, Natalia Dobrovol'skaya, Gemma Estrada, Francisco Montañés, Natalia Oudovenko, Mikhail Popov, Eduard Vieta, M.D., Ph.D.

SUMMARY:

Background: Agitation is an acute and serious condition in patients with a variety of psychiatric disorders, including schizophrenia or bipolar disorder. It requires early recognition and rapid intervention to achieve symptom relief and avoid severity escalation. The treatment of acute agitation usually includes pharmacological tranquilization with antipsychotics, sometimes combined with benzodiazepines. While oral would be the preferred route of administration to maintain a non-traumatic experience for the patient, it may not be optimal to deliver a sufficiently rapid onset of therapeutic effect. Intramuscular (IM) formulations provide faster symptomatic relief but may cause a potentially traumatic experience for the patient. Inhaled loxapine is the first available treatment to provide rapid control of agitation combined with a non-coercive, noninvasive route of administration. Our PLACID study is the first comparative study of inhaled loxapine with an IM antipsychotic.

Objective: Evaluate the efficacy and safety of inhaled loxapine (LOX) as compared to IM aripiprazole (ARI) for the treatment of acute agitation in patients with schizophrenia or bipolar disorder. **Methods:** Acutely agitated patients with a value of 4 or more on the CGI-S scale with schizophrenia and bipolar I disorder and otherwise in

good health were enrolled in this phase 3b, open-label, rater blind, randomized, active control, prospective, parallel-group study conducted in 30 centers across Europe. The primary endpoint was time to response, where response is defined as a CGI-I score of 1 (very much improved) or 2 (much improved). Secondary endpoints included response rate at different time points, need of additional dose, time to rescue medication, time to second dose of study drug, patients' treatment satisfaction assessed by item 14 of TSQM, and safety and tolerability of both study drugs. **Results:** 357 patients with a diagnosis of schizophrenia or bipolar I disorder according to *DSM-5* criteria between 18 and 65 years old were enrolled. Median time to response was 50 versus 60 minutes in the LOX versus ARI groups ($p=0.0005$), respectively. Fourteen percent of patients in the LOX group achieved response as early as 10 minutes, as compared to four percent of patients in the ARI group ($p=0.001$). The percentage of responders was significantly higher in the LOX group at 20, 30, 50, and 60 minutes. 53.7% and 36.4% of patients were very satisfied and extremely satisfied, as assessed by Item 14 of TSQM in the LOX and ARI groups, respectively. Both groups showed a good safety profile. 32.4% versus 27.7% of patients presented at least one adverse event in the LOX versus ARI groups, respectively. **Conclusion:** Time to response is significantly shorter for inhaled loxapine as compared to IM aripiprazole. In addition, inhaled loxapine offers better patient treatment satisfaction with a good safety profile. These data support the use of inhaled loxapine as the standard of care for agitated patients diagnosed with schizophrenia or bipolar I disorder.

No. 61

Algorithm-Based Interventions and Protocol for the Assessment and Approach of the Psychiatric Patient With Acute Psychomotor Agitation

Poster Presenter: Eduard Vieta, M.D., Ph.D.

Co-Authors: Marina Garriga, M.D., Laura Cardete, Miguel Bernardo, Maria Lombraña, Jordi Blanch, Rosa Catalán, Mireia Vazquez, Victoria Soler, Anabel Martínez-Arán

SUMMARY:

Background: Psychomotor agitation is the most common behavioral disorder observed in emergency

and psychiatry departments. This syndrome is characterized by excessive or inappropriate motor or verbal activity and important emotional tension. Psychomotor agitation may be associated with medical conditions; substance intoxication/withdrawal; and, in a significant number of cases, schizophrenia or bipolar I disorder.

Objective: The objective of this protocol was to provide up-to-date guidance to identify, manage and treat patients with an episode of acute agitation, considering the consensus clinical knowledge, current ethical standards and available therapies. This protocol and intervention algorithms are intended to be a patient-centric tool helping to anticipate and prevent the escalation of agitation symptoms. **Methods:** The method followed to elaborate this document was through a combination of comprehensive bibliographical review (compiled in the article "Assessment and Management of Agitation in Psychiatry: Expert Consensus" by Garriga, M., et al.), interaction with patients and the clinical experience in our center. **Results:** The elaboration of this protocol resulted in a document that contains guidelines to identify, manage and treat patients efficiently, ethically and safely. One of the novelties of the protocol is the addition of dichotomies based on the patients' willingness to cooperate. The information is summarized in easy-to-use algorithms for non-specialized health care professionals. **Conclusion:** This protocol may provide the basis of a new standardized treatment paradigm for psychomotor agitation, which may help improve the patient's experience and therapeutic alliance with the health care professional and optimize resources in health care centers.

No. 62

Intensive Transitional Treatment Programme: Impact on Psychiatric Emergency Admissions and Length of Stay on the Inpatient Unit

Poster Presenter: Jonathan Fairbairn, M.D.

Lead Author: Neeraj Bajaj, M.D.

Co-Author: Mir N. Mazhar, M.D.

SUMMARY:

Background: The Intensive Transitional Treatment Programme (ITTP) offers intensive, rapid access to short-term multidisciplinary psychiatric treatment to patients presenting to the emergency department

and other acute services. ITTP provides rapid access to both psychiatric and psychotherapy input for four to six weeks. This treatment model provides an alternative to inpatient psychiatric care and facilitates the transition between the inpatient and community treatment settings. **Methods:** A retrospective study of psychiatric emergency department presentations (N=8,816) and admissions to the inpatient psychiatric unit (N=1,862) at Kingston General Hospital was performed during the 12-month period before and after implementation of the ITTP. Participant satisfaction was measured using an anonymous feedback questionnaire.

Results: Following the implementation of ITTP, a significant decrease in median psychiatric admission length of stay was observed ($p=0.03$). In addition, there was a significant reduction in the number of psychiatric admissions via the emergency department (N=134, $p=0.01$). Analysis of anonymized feedback from patients attending ITTP was very positive among participants, with all the participants surveyed recommending the program to others. **Conclusion:** The ITTP model for psychiatric services can bridge the gap between deficient community psychiatric services and expensive overburdened inpatient services. ITTP can serve as an effective alternative to inpatient admission and facilitate the transition from inpatient to the outpatient treatment settings. Participants viewed ITTP as a positive therapeutic intervention.

No. 63

Descriptive Study of the Psychiatric Ambulance Benefits of the Psychiatric Emergency Hospital "Torcuato de Alvear" in Buenos Aires City

Poster Presenter: Martin Javier Mazzoglio y Nabar

Co-Authors: Gabriel Schraier, Alicia Pellacani,

Eduardo Rubio Dominguez, Jose Mucciacciaro

SUMMARY:

Background: The emergency room of the psychiatric emergency hospital "Torcuato de Alvear" provides services outside the ambulance with a professional psychiatrist of that device. The demand for this service is by judicial office, home evaluation or in collaboration with another hospital in the network, evaluations in Buenos Aires City hospitals, or by hospital transfers (especially monovalent returns).

Objective: Study the performance characteristics

performed by the psychiatric emergency hospital “Torcuato de Alvear” ambulance during a period of three years in order to detect limiting factors for its management and operation. **Methods:** We conducted a descriptive and cross-sectional study on the performance of the psychiatric emergency hospital “Torcuato de Alvear” ambulance professionals during the 2014/2016 period. We analyzed the reasons for the application, the number of benefits per month, the population characteristics of the patients with their age and sex, the type of resolution of the benefit, and the timeframe of the benefits. Statistical parameters were applied to the data, and the current ethical and legal requirements were met. **Results:** We discovered a growth in the demand for benefits through the ambulance, in which the transfers of psychiatric patients to general hospitals or their return were significant.

Conclusion: The increase in benefits through the ambulance was significant, but did not correspond to psychiatric patients in a psychiatric emergency situation, but administrative reasons. The main cause of the increase was related to transfers that did not present emergency characteristics and may negatively impact the effectiveness of the risk aids.

Keywords: Psychiatric Emergency, Psychiatric Ambulance, Buenos Aires City

No. 64

Medical Student and Resident Knowledge, Attitudes and Behavior Regarding Physician-Assisted Suicide

Poster Presenter: Cheryl A. Kennedy, M.D.

Co-Authors: Omar Mohamed, B.S., Chiadikaobi Okeorji, M.D., M.B.B.S., Juvaria Anjum, Ghulam Khan, M.D., M.B.B.S.

SUMMARY:

Background: Physician-assisted suicide (PAS) is a hotly debated topic that raises ethical, moral and legal questions. Most surveys of the public are 50–50. PAS is currently legal in five states in the United States and in some Western European countries. Physicians do not have to participate. Since there is a growing trend toward lobbying for legalizing PAS, medical providers in training, medical students and residents are likely to encounter patients who may wish to have that discussion. There was a bill pending in our state legislature during the survey

period (still is at this writing). The topic is not in many curricula for medical trainees. At our urban academic medical center, we assessed the knowledge, attitudes and behaviors (KAB) of medical students and residents toward PAS. We hypothesized there would be differences by level of training in most areas of KAB. **Methods:** We developed an anonymous questionnaire that was distributed via email and in paper. The survey had 17 questions concerning knowledge, attitudes/perceptions and behaviors (scenarios provided) about PAS. Responses were tallied, and medical students and residents (psychiatric, emergency and internal medicine) were compared in bivariate and logistic regression analysis. Preliminary analysis was of demographics, time in training, clinical experience, religion, and conviction (Question: Do you have convictions on this matter? Answer: Yes or No). **Results:** The majority of the respondents wanted PAS to be legalized (84%) and showed willingness to participate in PAS. Of the 159 respondents, 57% (N=90) were male and 42% (N=66) were female, with one transgender. Most were medical students (76%; N=119), with 53% (N=63) in their first year, and 85% (N=103) reported some clinical experience. Residents comprised 24% (N=38) of respondents, with 81% (N=26) specializing in internal medicine. Most respondents were under 30 years old (85%; N=135). Self-identified Christians comprised 53% of the respondents, and 36% of the overall sample reported religious conviction about PAS. Only three percent are very knowledgeable about PAS; five percent were not knowledgeable at all. Most (75%) knew that PAS is not legal across the U.S. The difference in mean knowledge rates for residents and students were not statistically significant ($p=0.0591$). There was a significant effect of gender on conviction ($R^2=0.092, p<0.0005$). Females reported most conviction on the subject. The greater the clinical experience, the more favorably medical students viewed PAS. **Conclusion:** Somewhat surprising to our hypotheses, neither age, religion or educational level influenced knowledge, attitude and behavior toward PAS. Greater clinical experience in medical students seems to influence behavior toward PAS (hypothesized). It is hoped that these results can motivate educators to discuss this important topic.

No. 65

Criminogenic Risk Factors Among Forensic Psychiatric Inpatients

Poster Presenter: *Darci Delgado, Psy.D.*

Co-Authors: *Angelea Bolaños, Ben Rose, Sean Mitchell, Susan Velasquez, Andrea Bauchowitz, Barbara E. McDermott, Ph.D., Robert Morgan*

SUMMARY:

Background: Treatment within a forensic hospital system has traditionally focused on addressing mental illness, but as state hospital forensic populations rise, Warburton (2014) argues that deinstitutionalization has led to a new forensic patient—one that exhibits co-occurring mental health symptoms and criminal behavior. Draine et al. (2002) suggest that in addition to treating mental illness, other criminogenic risk factors should be addressed—antisocial behavior and associates, criminal thinking, substance use, antisocial attitudes, and deficits in social relationships. Criminogenic risk factors and mental illness play important roles in recidivism of mentally ill offenders, and only a limited understanding of these factors in forensic patients exists. **Methods:** This project examines criminogenic risk factors in a sample of forensic patients found not guilty by reason of insanity (NGRI; N=199). The results of these forensic patients were then compared to community psychiatric inpatients with a criminal justice history (CJ-PMI; N=74) and community psychiatric inpatients without criminal justice history (non-CJ-PMI; N=68). All three groups were given measures of criminogenic risk factors, perceptions of social support and symptoms inventories, including the Measure of Criminal Attitudes and Associates (MCAA), Self-Appraisal Questionnaire (SAQ), Multidimensional Scale of Perceived Social Support (MSPSS), and Brief Symptom Inventory (BSI). **Results:** An analysis of one subset of the data (NGRI, N=100) was completed. The second half of NGRI patient data (N=99) is collected but not analyzed. The following results are based on the initial data set, and a full data set will be completed and analyzed by autumn 2016. Criminal risk, as measured by the SAQ, found significant differences between all three groups ($p<0.05$), where CJ-PMI have the highest criminal risk, followed by NGRI and then non-CJ-PMI. The

SAQ mean total scores for each group were 27.7, 21.8 and 14.8, respectively. Social support, as measured by the MSPSS, indicated that NGRI are reporting significantly higher overall social support when compared to CJ-PMI and non-CJ-PMI ($p<0.05$); however, there were no other significant differences. The mean total scores for the MSPSS were 67.5, 60 and 56.5, respectively. Three of four criminal attitudes types (violence, criminal intent and associates), as measured by the MCAA Part B, were significantly different between CJ-PMI and NGRI ($p<0.05$). **Conclusion:** Forensic inpatients in this sample evidence some, but not all, criminogenic risk factors. In addition, this forensic sample evidences significant strengths in perceived social support, which could be protective for future recidivism. As criminogenic risk factors increase risk of committing future crimes, understanding the constellation of factors that forensic patients evidence is key. These results can inform future treatment for forensic patients.

No. 66

Malingering Screening for Competency Restoration Inpatients

Poster Presenter: *Kayla Fisher, M.D., J.D.*

SUMMARY:

In June 2011, the forensic education department at Patton State Hospital initiated a malingering detection program that consisted of an objective screening of collateral legal information of all patients admitted for competency restoration. Patients who had records flagged for increased risk of malingering as a result of these screens were targeted for a follow-up assessment for the forensic education department. Red flags for follow-up testing included organization during current alleged offense, history of versatile and organized criminal offenses, explicit suspicion of feigning in reports from court-appointed evaluations, documented history of feigning in previous psychiatric hospitalizations/evaluations, verifiably inconsistent or improbable endorsements of pathology during prior evaluations, lack of psychiatric history, and reasonable motivating factors (avoidance of lengthy sentences, charged with a sexual offense, indication of drug-seeking behavior). In September of 2014, the screening program was discontinued, and

malingering assessments were initiated solely by the treating clinicians. A comparison between malingering diagnosis rates between the two methods of identification (malingering detection program screening versus clinical judgement) suggest an expertly informed, objective view of collateral legal records significantly increased accuracy of malingering detection. Improved methods of malingering detection can result in more focused clinical care and improved utilization of clinical resources.

No. 67

Clozapine Markedly Reduces Severe, Frequent Self-Injurious Behaviors in a State Prison Population

Poster Presenter: Theodore Zarzar, M.D.

Co-Authors: Gabriela O'Connell, M.D., Vincent Wilson, M.D., Bryan Harrelson, Dustin Morris, Ph.D., Terri Catlett, Susan Saik, M.D., Brian Sheitman

SUMMARY:

Background: Self-injurious behavior (SIB) is a significant problem facing correctional institutions. In addition to the misery of the inmate, these behaviors may require emergency medical care, lead to staff/system disruptions and also result in significant additional costs. Management of SIB during incarceration can include behavioral and other psychosocial therapies, psychotropic medications, increased levels of observation, and seclusion or restraint. Clozapine is an antipsychotic medication used in the treatment of schizophrenia when other antipsychotic medications have been ineffective. Clozapine has also been shown to reduce self-injurious behaviors in individuals with schizophrenia and borderline personality disorder. This study assesses the feasibility and efficacy of clozapine in managing severe, frequent self-injurious behaviors among inmates in a state prison when other interventions have not been effective.

Methods: Patients at North Carolina's Central Prison psychiatric hospital were assessed for clozapine initiation based upon a recent history of repeated self-injury or suicide attempts, presence of a *DSM-5* mental illness (including a personality disorder), failure or intolerance to at least two prior antipsychotic medication trials, capacity to give informed consent, and willingness to have weekly blood draws for ongoing hematological monitoring.

Feasibility and patient satisfaction were assessed by measuring the percentage of doses missed and the number of blood draws refused. The number of urgent care (within the prison hospital) and outside hospital visits related to the medical consequences of SIB for the 12 weeks before and after clozapine initiation were the primary outcome measures. There were no benefits offered to inmates for participation. **Results:** Six male patients, all with severe cluster B personality disorders, were offered clozapine, and four consented to treatment. One patient refused clozapine after one week of treatment, while the three other patients were maintained on clozapine for 12 weeks. No blood draws were refused or delayed in the study period. Out of 471 doses of clozapine offered, there were 16 refusals, yielding a medication adherence rate of 96.6%. The doses of clozapine utilized were 75, 150 and 175mg per day. For the patients completing the 12 weeks of clozapine treatment, visits to the prison urgent care clinic for SIB decreased from 60 visits before clozapine to eight with treatment, while visits to outside hospital emergency rooms decreased from 24 to three. **Conclusion:** In this small case series, clozapine appears to be a feasible and very effective treatment in reducing episodes of severe and frequent self-injury for some male inmates. Further study of clozapine in offenders with repeated self-injury is warranted to confirm these preliminary findings.

No. 68

Patterns of Involuntary Psychiatric Admissions Among Older Adults in Western Quebec

Poster Presenter: Javad Moamai

SUMMARY:

Background: Whereas involuntary psychiatric admissions (IPA) of older adults has always been controversial, its clinical characteristics are poorly studied. Therefore, the aim of this study was to further describe the patterns of IPA in a sample of hospitalized elderly. **Methods:** A cross-sectional study was conducted using data (ICD-9 and ICD-10 format) taken from discharge records of all 1,651 older adult (64 or older) admissions to the only psychiatric hospital of the western part of Quebec between 1991 and 2016. Non-parametric descriptive statistics were used for the analysis. **Results:** The

observed prevalence rate of IPA was 12% (females: 10%, males: 15%). The rates remained stable over the study period. A logistic regression analysis indicated that IPA was correlated with neurocognitive disorders, schizophrenia, younger age, and first admission status. No association was found with the gender or comorbid personality and substance-related disorders. **Conclusion:** In spite of its limitation, this study suggests that the IPA rate among older adults was mainly correlated with psychotic disorders. Furthermore, finding that IPA is more prevalent in the first admissions subgroup, as is the case among adolescent and adult populations, makes it also a major issue in the primary psychiatric care of older adults.

No. 69

A New Approach to Treatment of Insomnia With Transcranial Magnetic Stimulation (TMS)

Poster Presenter: Khurshid Khurshid, M.D.

Co-Author: Richard Holbert, M.D.

SUMMARY:

Background: Transcranial magnetic stimulation (TMS) is a noninvasive brain stimulation technique that has been approved as a treatment of depression. We hypothesize that low-frequency TMS exerts an inhibitory effect on hyperexcitable cortical state in patients with chronic insomnia and therefore is therapeutic. Therefore, we undertook this exploratory study to test this hypothesis. We compare changes in insomnia scores between baseline and end of treatment in this open trial using bifrontal low-frequency TMS. **Methods:** We aim to enroll 25 patients with primary insomnia to get 20 completed patients in this pilot study. Patients between the ages of 21–65 years who meet *DSM-IV* criteria for primary insomnia are being studied. This is a prospective, open-label study comparing sequential bilateral low-frequency TMS in patients with chronic insomnia. Exclusion criteria are patients with comorbid depression, substance abuse in last two weeks and no psychotropic medication changes two weeks before start of TMS treatment; patients with a major medical or psychiatric disorder that may be causing or contributing to insomnia (bipolar disorder, psychosis, anxiety disorders, dementia, seizure disorder, and chronic pain); and patients with ferromagnetic material in their head or within

30cm of the coil. **Results:** We screened 35 patients. Six were enrolled, and five completed study so far. Mean age is 44 years; male to female ratio is 3:2. Mean change in sleep duration on actigraphy is one hour. Mean change in ISI scores is 15%. Mean change in sleep efficiency is 10%. **Conclusion:** This study demonstrates improvement in objective improvement seen in subjective insomnia scores on PSQI and ISI and improvement in sleep duration on actigraphy.

No. 70

Endorsing the New International Expert Consensus: Decrease in Mechanical Restraint Use in Agitated Patients in an Acute Psychiatric Ward

Poster Presenter: Antonio Benabarre, M.D. Ph.D.

Lead Author: Eva Fernandez

Co-Authors: Alonso Perez, Anna Bastidas, Cristina Fernandez, Marina Garriga, M.D., Estanis Alcover, Eduard Vieta, M.D., Ph.D.

SUMMARY:

Background: The use of coercive measures in psychiatric practice has been a continued matter of concern that raises a need to improve patient care. A more respectful and patient-centered approach may result in improved short- and long-term outcomes, including better therapeutic alliance, fewer conflicts and injuries, and reduced resource use and costs. Interventions directed to staff training on verbal de-escalation skills, conflict behavior prevention and attitudes to patients' improvement have been effective in reducing the frequency of containment. Following and according to current recommendations, a plan to reduce coercive measures in clinical practice was applied in the ward. The aim of this study was to evaluate the influence of an intervention on staff formation, organization and attitudes in the management of agitated patients on containment rate. **Methods:** This study included observational retrospective analysis of mechanical restraint registry data from 2015 and 2016. The ward has 24 beds and serves a catchment area of around 300,000 adult inhabitants. There were no changes in the number of beds or staff during this period. **Results:** In 2015, there were 399 patients admitted in the ward, accounting for 7,927 patients per day of ward occupation, and in 2016, there were 291 admissions and 5,499 patients per

day of occupation. The main characteristics of the patients admitted in the ward was very similar among both years. In 2015, there were 51 patients submitted to mechanical restraint, and in 2016, there were 21, which represents 12.8% and 7.2% of patients mechanically restrained over admissions and a rate of 6.4 and 3.8 patients mechanically restrained over 1,000 patients per day of occupation, respectively. The differences between both years were statistically significant ($p < 0.05$). In 2015, the total accumulated time in mechanical restriction was 1,435.8 hours, while in 2016, it was 483.8 hours, which represents an absolute reduction of 951 hours and a relative reduction to a third. The mean accumulated time in mechanical restriction per patient was lower in 2016 compared to 2015, but differences were not statistically significant. The main characteristics of the patients mechanically restrained was very similar among both years, except for the main reason of restraint. In 2015, there were 26 patients submitted to mechanical restraint due to psychomotor agitation, while in 2016, there were seven (6.5% and 2.4%, and 3.3% and 1.3%; $p < 0.05$). Patients restrained due to behavioral problems were not different between both years (14 and 12, 3.5% and 4.1%, and 1.8% and 2.2%, respectively). **Conclusion:** Results show a decrease in mechanical restraint use in our ward in patients with psychomotor agitation, but not in patients with behavioral problems.

No. 71

WITHDRAWN

No. 72

Frequency Analysis of Significant Factors Related to Post-Discharge Rapid Readmission of Psychiatric Inpatients

Poster Presenter: Ashwin Mehra, Ph.D., M.B.A.

Co-Authors: La'ker Kwamogi, Jessica Engelthaler, Greg Haggerty, Ph.D., Jacob Sperber, M.D., Nyapati R. Rao, M.D.

SUMMARY:

Background: The current focus on integrated care systems incorporates the aim of health care facilities' increased utilization of preventive measures in order to reduce patients' need for acute medical and mental health care. Post-discharge

rapid readmission to acute care psychiatric units can be considered as one of the major preventable steps in reducing this health care cost burden. Research studies have highlighted the importance of various psychiatric, psychosocial and medical factors that play a role in rapid readmission of some patients. Most research studies center their findings based on convenience samples or geographic locations, limiting the generalizability of their findings. Factors deemed important in any particular study may be specific only to that population. This research looked across more than a hundred existing studies to produce a frequency analysis that highlighted the most common factors identified as pertaining to rapid readmission to psychiatric inpatient units. **Methods:** The research team searched existing psychiatric and psychological databases, including PubMed, PsycINFO and Google Scholar, using keywords such as "rapid readmission," "revolving door" and "rehospitalization." The search was limited to studies of psychiatric populations, and the final list included 106 peer-reviewed articles pertaining to factors that play a role in psychiatric hospital readmission. Subsequently, the factors impacting rehospitalization were organized by article, leading to frequency results of the findings. A frequency table was produced, illustrating the identified factors and organized in descending order. **Results:** The frequency analysis found a total of 30 factors commonly identified in the literature as relevant to psychiatric inpatient rapid readmission. It was found that previous hospitalization (14%), severity of psychiatric illness (12%), younger age (8%), and shorter length of stay (7%) were the most recurring factors regarding readmission in psychiatric care units. **Discussion:** While there are various social, economic, demographic, and clinical factors that play a role in readmission, the frequency table indicates which factors were considered to be most frequent in the literature analyses. The chief limitation of this research was that some studies were conducted in other countries, which may not be a proper representation of the American population. Also, the samples centered on psychotic disorder patients, lacking a wider range of diagnoses. Further research is recommended to provide a more extensive and accurate representation of the entire psychiatric population. The results of this frequency analysis could aid in future research aimed at

developing evidence-based tools to reduce rapid readmission.

No. 73

Integrated Psychiatry at a Level I Trauma Surgery Program: A Four-Year Review of Diagnoses, Demographics and Comorbidities

Poster Presenter: Rachel Houchins, M.D.

Co-Author: Olubunmi Orekoya

SUMMARY:

Psychiatric symptoms and diagnoses are common among patients who are admitted to level I trauma surgery centers. Patients with life threatening injuries that would require hospital admission at level I trauma centers may develop psychiatric symptoms such as anxiety, depression, acute stress disorders, and posttraumatic stress disorder (PTSD). Some may also have preexisting psychiatric disorders such as alcohol and substance use disorders that may have predisposed them to severe physical injuries from motor vehicle crashes, falls or assault. Previous studies have identified a high prevalence of psychiatric disorders among trauma surgery inpatients. A recent study by at a level I trauma center follow-up clinic found that 52%, 44% and 20% of participants were identified as having PTSD, depression and alcohol problems, respectively. Therefore, we propose that prompt psychiatric consultation as part of an integrated management provided to trauma surgery inpatients may help improve health outcomes, reduce short- and long-term complications, and improve quality of life. The trauma surgery program at Palmetto Health in Columbia, SC, is one of the few level I ACS-verified trauma centers in the United States with a full-time psychiatrist integrated into the trauma surgery team. This allows a unique opportunity to evaluate this model and to assess the demographic, clinical and diagnostic characteristics of patients seen at a level I ACS-verified trauma surgery program. Retrospective review of approximately 1,500 patients who were evaluated by the integrated psychiatrist over a four-year period will be completed, collecting data including race, ethnicity, comorbidities, outcomes, diagnoses, and length of ICU and hospital stay. Outcomes including discharge location, length of stay and mortality will be examined. Descriptive statistics will be reported

using chi-square and Fishers' exact tests for categorical data and Student t-test or ANOVA tests for continuous data. Multivariate regression analysis will be utilized to assess predictors of length of hospital stay and ICU stay. Discussion will focus on the integrated nature of this system and applicability to other health systems.

No. 74

Equine Therapy Improves Mood and Cognition in Alzheimer's Dementia

Poster Presenter: Diego L. Coira, M.D.

Co-Authors: Margaret Grady, R.N., M.S.N., A.P.N., Rafael Coira, MS4, JD, Dana Spett, LSW, Jennifer Coira, MS4, JD

SUMMARY:

Background: Alzheimer's dementia is a devastating illness that causes distress to patients and their families and often leaves them searching for answers beyond the reach of conventional medicine. Equine therapy has been studied in the treatment of Alzheimer's dementia, schizophrenia, schizoaffective disorder, substance abuse, ADHD, autism spectrum disorder, and other medical conditions. In Alzheimer's patients, equine therapy has been shown to increase engagement and decrease disruptive behavior. **Methods:** We report two cases of patients with Alzheimer's dementia who were enrolled in a 12-week equine therapy program. The program consisted of once-weekly sessions involving grooming and therapeutic riding led by trained equine therapists at an equine therapy facility in northern New Jersey. Both patients were women in their late seventies diagnosed with Alzheimer's dementia with three years of progressive symptoms including memory deficits, depression, hallucinations, paranoid ideation, and aggressive behavior. Interviews with each patient and their spouses were conducted at the beginning of the program as well as at weeks four, eight and twelve. **Results:** Both patients reported improvement in depressive symptoms. Their spouses reported decreased frequency and intensity of hallucinations, paranoid ideation and aggressive behavior. They noted that the patients were able to remember details from the sessions, including the name of the horse they worked with. The spouses also reported a sustained improvement in the patients' mood.

Interestingly, both spouses reported feeling more hopeful and improvement in their own mood. Both patients and their spouses reported that they were very satisfied with the program. **Conclusion:** Our study suggests that equine therapy shows promise as a treatment for Alzheimer's dementia. Specifically, we reported improvement in mood, cognition, psychotic symptoms, and aggressive behavior. More studies are warranted to determine the role of equine therapy in the treatment of Alzheimer's dementia.

No. 75
Serum Tumor Necrosis Factor- α and Interleukin-6 Levels in Alzheimer's Disease and Mild Cognitive Impairment

Poster Presenter: Hyun Kim, M.D., Ph.D.

Co-Author: Kang Joon Lee

SUMMARY:

Background: Neuroinflammation has been recognized as a feature of Alzheimer's disease (AD); mild cognitive impairment (MCI) is believed to share several pathological features with AD. The aim of this study was to compare serum cytokine levels between patients with AD, subjects with MCI and healthy controls and assess the correlation between cytokine levels and cognitive performance in these subjects. **Methods:** Participants included 35 patients with AD, 29 subjects with MCI and 28 healthy controls from the psychiatry department of the Ilsanpaik Hospital in South Korea. Demographic and neuropsychological information were obtained, and peripheral cytokine levels, specifically tumor necrosis factor- α (TNF- α) and interleukin-6 (IL-6) levels, were measured for all subjects. **Results:** After adjusting for age, a significant difference in IL-6 ($p=0.045$), but not in TNF- α ($p=0.082$), levels was observed among the three groups. IL-6 levels were higher in patients with AD than in subjects with MCI and healthy controls. TNF- α and IL-6 levels negatively and positively correlated with MMSE-K and Global Deterioration Scale (GDS) scores, respectively. TNF- α and IL-6 levels were also positively correlated. **Conclusion:** This study suggests that serum IL-6 levels of patients with AD might be higher than those of subjects with MCI and healthy controls. Serum TNF- α and IL-6 levels might be negatively correlated with cognitive function. We

expect serum IL-6 levels might have the role of biomarkers for AD.

No. 76
Improvement of Cognition and Behavior in Seven Adults With Neurocognitive Disorders (NCD) After Daytime Administration of Zopiclone

Poster Presenter: Maryam Alikouzehgaran

Co-Authors: Daniel Li, Lisa M. Burback, M.D., Alfonso Ceccherini-Nelli, M.D.

SUMMARY:

Background: Zopiclone and zolpidem (ZOL) are alpha subunit selective GABA-A allosteric modulators approved for the treatment of insomnia. The use of ZOL has been associated with an increased risk of reversible dementia in the elderly population and of falls in inpatients. However, Cohen (2008) described a 35-year-old man who had sustained an anoxic brain injury resulting from cardiac arrest with subsequent extreme lethargy and lack of response to stimuli. Administration of twice-daily ZOL resulted in a dramatic increase in the level of alertness, including improved speech and gait. Jarry (2002) observed improved cognition and motor functions, including speech fluency, after administration of ZOL in a 60-year-old woman with unspecified dementia and an EEG marked by slow, polymorphous activity at 2Hz in the frontotemporal regions. **Methods:** Seven consecutive patients (four females, mean age 49 years) with NCD were treated off label with zopiclone. All patients demonstrated excessive expression of delta/theta resting EEG rhythms and/or a syndrome characterized by cognitive deficits, impulsivity and aggression. Whenever possible, EEGs were administered before and after the start of zopiclone. EEGs were clinically interpreted by a neurologist. **Results:** This case series included NCD due to vascular disease (2), Huntington's disease (2), frontotemporal lobar degeneration (1), traumatic brain injury (1), and alcohol (1). Daily doses of zopiclone ranged from 22.5mg to 60mg, in two to four divided doses. Six patients were very much or much improved in the domains of cognition, speech fluency, other motor functions, and aggressive/impulsive behavior. All patients were treated continuously for at least 12 weeks, and one patient has been followed up for more than two years. We have not observed any

significant adverse events or side effects, and adherence was excellent. Four patients had excessive expression of slow rhythms in their baseline EEG. **Conclusion:** This case series generates the hypothesis that a subset of NCD patients may benefit from treatment with α -1,3-selective GABA-A allosteric modulators, due to an underlying pathology of GABA interneurons. EEG could prove to be a useful biomarker to identify patients more likely to respond to this novel treatment.

No. 77

Is It Possible to Keep Job Satisfaction and Morale High in a Nonprofit Setting When Switching From Salaried Positions to a Productivity Model of Pay

Poster Presenter: Gina N. Nelson, B.S.

Co-Authors: Julia A. Langer, M.H.S., Thomas P.

Tarshis, M.D., M.P.H.

SUMMARY:

Background: In this study, a nonprofit community mental health clinic explored how clinician morale is affected by transitioning to a pay system that holds clinicians accountable for meeting their productivity requirements. **Methods:** A model of pay that guaranteed clinicians half their original base salary with the opportunity to make a bonus upon reaching or surpassing their productivity/daily revenue goal was implemented in response to declining productivity among clinicians. Clinicians' pay changed based on expected revenue from their billing. Clinicians received compensation for non-clinical time (excluding general administrative tasks) including interviews, providing supervision, etc. Under this model, clinicians have more control over their schedule and can select times to schedule patients. Protected administrative time was eliminated, as it had become a barrier for clinicians to meet their daily revenue goals. In March 2016, 14 questions from the validated "Job Satisfaction Survey" were disseminated to 19 clinical staff to assess attitudes toward supervisors, coworkers, pay, and work itself while on a salary model of pay. The same survey was repeated in October 2016. **Results:** This study received responses from 11 of the 19 clinicians originally contacted. The baseline survey highlighted clinicians' pleasure working with fellow clinicians. For example, "I work with responsible people" received a mean score on the Likert scale of

8.92 (SD=0.089); however, when asked "my clinic pays better than competitors," the response was 4.11 (SD=2.25). When questioned on opinions of management, responses ranged from 4.03 (SD=2.94) to 5.7 (SD=3.09). **Conclusion:** On a salary model of pay, data suggest staff opinions of coworkers are generally positive and opinions of management are highly variable. Reviewing changes in job satisfaction and morale during the transition to a new pay structure will provide valuable information for other mental health clinics seeking to expand services for children and families.

No. 78

Adverse Childhood Experiences Increase the Risk of Mortality: A Meta-Analysis of Retrospective and Prospective Cohort Studies

Poster Presenter: Peter Hauser, M.D.

Lead Author: Naser Ahmadi, M.D., Ph.D.

Co-Authors: Robert Pynoos, M.D., M.S., Fereshteh

Hajsadeghi, M.D., Garth Olango, M.D., Ph.D.,

Mohammed Molla, M.D.

SUMMARY:

Background: Early life exposure to adverse childhood experiences (ACE) (i.e., neglect, abuse, witnessing of domestic violence, or trauma in childhood) has been linked to alteration of the brain structure and the neurobiological stress-response systems, which have consequences for health and emotional well-being. Such experiences may be early determinants of mortality. **Methods:** To examine the association between adverse childhood experience (ACE) (i.e., trauma [sexual abuse, physical abuse, emotional/psychological abuse, neglect, parental death, and bullying]) and mortality, PubMed was searched from January 2000 through January 2016. We included prospective and retrospective cohort studies investigating the association between ACE and mortality. Mortality was defined as all-cause mortality, premature death and suicide. Meta-regression analysis was used to determine the relation of ACE and mortality. **Results:** The analysis included six cohort studies (N=34,188 subjects). ACEs' prevalence was 21% (95% CI [13.5, 28.7]). There were significant associations between ACE and mortality across all research designs, with an overall effect of OR=1.8 (95% CI [1.6, 4.2], p=0.001). This association was comparable in men and women with

ACE ($p > 0.005$). The hazard ratio of mortality increased with the increase in the number of ACE (OR=2.1, 95% CI [1.6, 2.8], $p = 0.001$), and having four or more ACEs was associated with highest risk of mortality in both genders (OR=2.9, 95% CI [1.5, 5.9], $p = 0.0001$). **Conclusion:** The estimated population attributable risk was 53% (47–64%). These findings indicate that childhood adversity is strongly associated with increased risk for mortality.

No. 79

Diagnosis, Risk and Violent Acts Among Patients in a Forensic Hospital: A Retrospective Study

Poster Presenter: Allen Azizian

Co-Authors: Charles Broderick, Susan Velasquez, Katherine Warburton, D.O.

SUMMARY:

Background: Although the vast majority of people with psychiatric diagnoses are not violent, those with certain symptoms and criminogenic tendencies have higher rates of violent incidents. Clinicians are often asked to conduct a violence risk assessment on patients involuntarily committed due to dangerousness, as well as develop treatment plans to mitigate the likelihood of future violence. We explore the conceptual pathways that link diagnoses, violence risk assessment and subsequent violent acts during hospitalization for a sample of forensic inpatients. **Methods:** Patients were a consecutive sample of 331 males (mean age 50.8, SD=10.3) in a state hospital committed under the Sexually Violent Predator Act. Patients had a range of psychiatric diagnoses and criminogenic risk factors. We examined both the risk assessment instruments (HCR-20, START, Static-99R) and psychiatric diagnostic categories for their relationship to the presence or absence of violent acts while hospitalized. As a precaution against chance findings, a main effects logistic regression was run separately for the diagnoses and risk measures. **Results:** The results of the logistic regression examining diagnostic variables showed three diagnostic groups that had a statistically significantly higher odds of violence: those diagnosed with neurocognitive disorders (N=16), those with schizophrenia or other psychotic disorders (N=71), and those diagnosed with antisocial personality disorder (N=106). Specifically, in comparison to patients without these

diagnoses, those diagnosed with neurocognitive disorders had almost four times the odds of being violent (OR=3.78, 95% CI [1.08, 13.25]); those diagnosed with schizophrenia or other psychotic disorders had over three times the odds of being violent (OR=3.21, 95% CI [1.68, 6.11]), and those diagnosed with antisocial personality disorder had over two times the odds of being violent (OR=2.20, 95% CI [1.22, 3.98]). The results of the logistic regression examining the risk assessments showed that, of the three instruments used, only the HCR-20 was significantly associated with higher odds of violence (OR=1.1075, 95% CI [1.0004, 1.23]).

Conclusion: This study highlights the differences in violence risk associated with certain diagnoses in an inpatient, forensic sample and highlights that certain risk assessment tools provide different information on violence risk while hospitalized. Our findings demonstrate that neurocognitive disorders, schizophrenia/other psychotic disorders or antisocial personality disorder diagnoses in presence of other risk factors increase the odds of violent acts while hospitalized. Risk assessment provides a structured approach to identifying risk factors and communicating violence risk, but are not always informative about how to treat such risk. Implication of this study for clinical practice is the importance of developing specific treatments based on diagnoses and dynamic risk factors.

No. 80

WITHDRAWN

No. 81

Clinical Difference Between Bipolar and Unipolar Depression : Focusing on the Bipolar Depression Rating Scale (BDRS)

Poster Presenter: Hyun-ju Yang

SUMMARY:

Background: Failure to distinguish bipolar from unipolar depression may lead to inappropriate treatment and poorer outcomes. We hereby compare unipolar and bipolar depressed subjects in order to identify distinctive clinical specificities of bipolar depression by using the Bipolar Depression Rating Scale (BDRS), which is a scale for assessment of the clinical characteristics of bipolar depression. **Methods:** The study included patients who were

hospitalized for depression treatment, being diagnosed with unipolar depression and bipolar depression. Two independent samples of depressed patients (unipolar and bipolar) were compared on a broad range of parameters, including sociodemographic characteristics, comorbidities, Montgomery Åsberg Depression Rating Scale (MADRS, assessing depression severity) and BDRS (assessing specific bipolar depression symptoms). **Results:** The study included 79 patients (38 bipolar and 41 unipolar depression). Sociodemographic characteristics were similar in both samples. On the BDRS, scores were higher in bipolar than in unipolar subjects (32.89 ± 0.91 vs. 29.83 ± 0.86 , $p=0.021$). The difference was particularly marked on the "mixed" subscale of the BDRS (4.39 ± 0.32 vs. 3.17 ± 0.29 , $p=0.006$). **Conclusion:** These findings suggest that presence of mixed symptoms during a depressive episode is in favor of bipolar depression. Furthermore, the BDRS could be integrated in a probabilistic approach to distinguish bipolar from unipolar depression.

No. 82

Clinical and Biological Determinants Associated With Confirmed Toxicology Test for Synthetic Cannabinoids (K2/Spice) in Washington, DC

Poster Presenter: John Johnson

Lead Author: Natasha Haddad

Co-Authors: Kacie Paik, Partam Manalai, M.D.

SUMMARY:

Background: Synthetic cannabinoids (SC) are a serious public hazard across the United States, particularly in metropolitan and low-income neighborhoods. SC are synthetic compounds that bind to the same receptors as tetrahydrocannabinol (THC) does (cannabinoid receptors [CB1 and CB2]). However, the effects of SC are not limited to mimicking THC; these drugs induce vastly varied behavioral changes. Patients intoxicated with these substances frequently present to emergency rooms (ER) with altered mental status and at times with extreme agitation, posing risk to their own and other's lives. In Washington, DC, a government-sponsored program encourages local hospitals to send biological samples of suspected SC use for free analysis by the Office of the Medical Examiners, since urine drug screens (UDS) are not helpful. In this

study, we attempt to identify biological and/or social determinants predicting SC use in the Washington, DC, area. **Methods:** We will obtain the clinical information on 53 individuals who have had a biological sample examined and confirmed chemical structure of the SC is reported to Howard University Hospital by the Office of Medical Examiner. **Results:** Ninety-eight samples were sent for analysis, and 69 (70%) samples were positive for synthetic cannabinoids. Our preliminary results indicate that all the positive SC samples contain either indole (N=40) or indazole (N=53) or both (N=32) in their structure (total 14 different compounds). We found that 68% of the individuals had used other illicit substances along with SC. We also found that, in the absence of immediate confirmatory measures, clinicians are intuitive in suspecting use of these compounds. We will explore the relationship between various biological (e.g., CPK, WBC, UDS) and social (e.g., age, gender, socioeconomic status) determinants that may more precisely identify the use of SC. **Conclusion:** The use of SC has become a national public health calamity, with first responders (EMS) and ER staff having very little information to arrive at a diagnosis. We hope our data, with confirmed chemical structure of SC, will not only help diagnostic and therapeutic measures taken by EMS and ER staff, but also to better understand biological mechanism of action of these compounds. In this study, we discuss the need for targeted drug abuse education and prevention, as well as the challenges such approaches pose, especially in populations where health disparities are prevalent.

No. 83

Factors Associated With Fear of Cancer Recurrence in Asian Cancer Patients: The Influence of Chronic Physical Conditions and Psychiatric Comorbidities

Poster Presenter: Rathi Mahendran

Lead Author: Jianlin Liu

Co-Authors: Shi Min Chua, Haikel Lim, Ee Heok Kua

SUMMARY:

Background: Fear of cancer recurrence (FCR) is prevalent among cancer survivors. Research that examines factors associated with FCR is always necessary in order to inform interventions and improve patient management. Past research has identified younger age as the only consistent factor

associated with FCR; contradictory findings are reported for other sociodemographic and medical variables. While cancer and treatment-related factors are largely focused in FCR studies, little is known about the influence of chronic physical conditions (e.g., stroke) and psychiatric comorbidities (e.g., depression). More importantly, minimal research has explored factors associated with FCR in Asian samples, resulting in limited knowledge on addressing FCR in Asian populations. Therefore, this study aims to identify key sociodemographic and medical variables associated with FCR among Asian cancer patients. **Methods:** Participants included 370 cancer survivors (Mean=5.17 years after treatment) from a larger study in Singapore who provided sociodemographic information (age, gender, marital status, education, and occupation), while medical-related information (cancer stage, cancer type, treatment, time since diagnosis, and chronic physical and psychiatric conditions) were retrieved from medical records. **Results:** Multivariate hierarchical regression analysis revealed that younger age ($p=0.01$), completion of chemotherapy ($p<0.05$) and radiotherapy ($p<0.01$), stroke diagnosis ($p<0.05$), and psychiatric comorbidity ($p<0.05$) were associated with FCR. **Conclusion:** The present exploratory study confirmed that younger age was significantly associated with FCR; preliminary evidence suggests the influence of other less-known medical and treatment variables on FCR in Asian cancer patients. Further research is required to confirm and replicate this study's findings.

No. 84

Lithium Toxicity Following NSAID Use: A Case Report

Poster Presenter: Pari Shelat

Co-Authors: Mustansar Raza, M.D., Sanjay Advani

SUMMARY:

A 30-year-old woman was admitted to Griffin Memorial Hospital for disorganized behavior. Mental status exam elicited signs of psychosis, as the patient was coherent but appeared to be responding to internal stimuli, as evidenced by frequently staring off into space and making random hand gestures. In addition, the patient displayed signs of mania, as she was distracted and pacing; thus, she was unable to

focus enough to engage in a fluent goal-directed conversation. Moreover, she was noted to have decreased sleep. She appeared to be severely agitated and disoriented. The patient was otherwise cooperative with good eye contact, and her mood and affect were calm. She denied depressive symptoms, including any suicidal or homicidal ideation. For the duration of her stay, the patient was placed on several medications, which included Seroquel, Zyprexa, Ativan, Risperdal, Klonopin, and Haldol. Depakote was also part of her medication regimen and was the mood stabilizing agent administered at the time of her admission. However, she was switched to lithium because Depakote was deemed suboptimal in treating the described mood symptoms. She was then started on lithium after discontinuing Depakote. One week later, her lithium level was checked and was found to be elevated, and the next day, she was started on ibuprofen for headaches. As she was beginning to show the signs of neuropsychiatric deterioration, blood testing revealed lithium to be significantly higher. She appeared to be heavily sedated, was not easily aroused and had hand tremors. Furthermore, she was drooling heavily. The patient appeared dehydrated, likely due to her poor oral intake of water and food. Due to these changes, her lithium dose was held that night. The next day, serum lithium was found to be reduced, and ibuprofen was discontinued because of the increased lithium concentration. Soon after, tests revealed that her lithium levels had dropped to within therapeutic range, and she appeared much less paranoid and was able to express herself more appropriately. This case highlights considerations physicians must take on deciding whether to use plasma concentration versus clinical signs to determine toxicity and highlights the need for physicians to closely monitor neurotoxic signs and symptoms and ensure that adequate hydration and electrolyte status are maintained to minimize complication.

No. 85

Electroconvulsive Therapy for Patients With Psychiatric Manifestations of Huntington's Disease: A Systematic Review

Poster Presenter: Antonio L. Nascimento, M.D., M.Sc.

Co-Authors: Juliana T. Buarque, Marco A. Brasil, M.D., Ph.D., M.Sc.

SUMMARY:

Background: Huntington's disease (HD) is an autosomal dominant neurodegenerative disease that affects the basal ganglia, the brain cortex and other areas of the central nervous system. The prevalence of Huntington's disorder in U.S. is four to eight cases per 100,000 inhabitants. HD's symptoms include chorea, cognitive decline and behavioral changes. These symptoms might be present in any moment of the patient's life. Psychiatric manifestations of HD include, in addition to cognitive decline, manic and depressive symptoms, as well as psychotic symptoms. Depressive symptoms affect one-third of patients with HD, and suicidal ideation is five to 10 times more prevalent in patients with HD than in the general population. Although patients with HD might present psychiatric symptoms that could be treated with electroconvulsive therapy (ECT), there are few reports of the use of this form of somatic therapy in this population. **Objective:** Review the current literature on the use of ECT for the treatment of psychiatric manifestations of Huntington's disease. **Methods:** PubMed and ISI Web of Knowledge databases have been searched with the terms "Huntington's Chorea" OR "Huntington's Disease" combined with "Electroconvulsive Therapy" OR "ECT." Articles published in English have been selected for analysis. **Results:** Thirteen articles have been retrieved with this search strategy. Two have been excluded because they were published in other languages (one in German and the other in Dutch). One article was excluded because it was a review. The 10 articles included in the review include eight case reports and two case series (one with seven patients and the other with six patients). **Discussion:** The current literature includes 21 case reports of patients with Huntington's Disease who were treated with ECT. Twenty of these patients presented favorable results with ECT. Publication bias might affect these results, as positive results are generally published and negative results are generally not published. No side effects of ECT that could render this procedure unsafe in this population have been described. **Conclusion:** ECT might be a safe and efficient therapy for psychiatric symptoms in patients with Huntington's Disease.

No. 86**Prevalence, Risk Factors and Common Medications Prescribed for Depression in Cerebral Palsy: Are We Ignoring an Already Neglected Population?**

Poster Presenter: Daniel Linhares

Co-Authors: Chun Wai Hung, Hiroko Matsumoto, Joseph P. Dutkowsky, David P. Roye

SUMMARY:

Background: Depression in patients with disabilities is severely in need of attention. Cerebral palsy (CP) is a common disability, with prevalence ranging from two to three per 1,000 live births. Increasing numbers of these patients are surviving into adulthood, with more than 500,000 adults in the U.S. alone. Depressive symptoms are reported to be two times higher in patients with CP compared to the general population. These estimates are likely underestimated, since patients with CP often have comorbid intellectual disability and may lack effective means of communication. **Objective:** The purpose of this study was to estimate the prevalence of and identify risk factors for depression in the CP population by determining the number of patients with reported depressed mood and/or prescribed antidepressants (as a surrogate measure). The most commonly prescribed antidepressants were also identified. **Methods:** This case control study examined adult (over 18 years old) patients with a diagnosis of CP treated at a tertiary medical center from January 1, 2006, to July 1, 2016. Medical records were reviewed to determine diagnosis of depression and antidepressant use. CP patients with depressive symptoms or antidepressant use were compared with those without depression to determine possible risk factors. **Results:** Of 424 total patients with CP, 93 (21.9%) had depressive symptoms, while 331 (78.1%) did not. The characteristics between the two groups were not meaningfully different for age, weight, height, BMI, and gender. The proportion of non-ambulatory patients with depressive symptoms was not significantly different than the proportion of non-ambulatory patients with no depression (22 of 93 [23.7%] vs. 89 of 329 [27.1%], OR=0.84, 95% CI [0.5, 1.4], p=0.5). However, those with depressive symptoms were associated with significantly higher incidence of oral analgesics use, compared to those

without depression (35.5% vs. 15.4%, OR=3.0, 95% CI [1.8, 5.1], $p<0.01$). The most commonly prescribed antidepressants were SSRIs (59.1%), SNRIs (16.1%), bupropion (11.8%), mirtazapine (6.5%), and tricyclics (5.4%). **Conclusion:** This study identified that approximately one-fifth of patients with CP had depression. Age, height, weight, gender, and ambulatory status were not associated with depression in our study. However, non-ambulatory patients are more likely to have communication difficulties, which could lead to an underestimation of depression. A statistically significant association between analgesics use and depression was found. While a causal relationship cannot be identified, clinicians should be wary of the potential mutually exacerbating relationship between pain and depression. Despite this, the use of SNRIs and tricyclics, which are known to be helpful with pain control, is much lower than SSRIs. Further research is necessary to determine the optimum types of antidepressant for this population in order to establish the most efficacious agents while also possibly addressing comorbid conditions such as chronic pain.

No. 87

Prevalence of Psychotropic Use in the Cerebral Palsy Population According to Level of Motor Function

Poster Presenter: Daniel Linhares

Co-Authors: Chun Wai Hung, Hiroko Matsumoto, Joseph P. Dutkowsky, David P. Roye

SUMMARY:

Background: Cerebral palsy (CP) is the most common disability of childhood, with a prevalence of approximately two in 1,000 live births. Due to advances in medical care, the number of adults with CP has been rapidly expanding (more than half a million in the U.S. alone). The Gross Motor Function Classification System (GMFCS) is a widely utilized tool for categorizing the motor function of patients with CP, with higher levels (4, 5) reflecting greater motor disability compared to lower levels (1, 2, 3). Patients with CP often suffer from multiple medical comorbidities including seizure disorders, spasticity and chronic pain. As such, one must be mindful of the side effects of psychotropic medications and risk of adverse interactions. Despite this, there is a

paucity of research on the prevalence of psychiatric illnesses and psychotropic medications used within this population. **Objective:** Identify the prevalence of different psychiatric illnesses in the population with CP, the most commonly used psychotropic medications, and if there is an association between psychotropic use and the degree of motor impairment. **Methods:** Adult (over 18 years old) patients with a diagnosis of CP were retrospectively identified from an academic medical center between January 1, 2016, and July 1, 2016. These patients' medical records were reviewed to determine demographic data, GMFCS level, psychiatric diagnoses, and psychotropic medication use.

Results: In total, 424 patients with CP were identified (age 33.3+13.5 years; 46.9% male; 53.1% female; 61.3+18.7kg; 161.6+26.8cm). Fifty-seven of 424 (13.4%) had a documented psychiatric illness, with the most common being anxiety (35.8%) and depression (33.3%). Overall, 225 of 424 (53.1%) were on some type of psychotropic medication. 123 of 424 (29%) were on psychotropic medications unrelated to any identifiable medical indication. The breakdown of the most frequently encountered psychotropic medications were anticonvulsants (25.9%), antidepressants (19.1%), benzodiazepines (18.2%), and antipsychotics (14.3%). Patients with more severe motor impairments (GMFCS 4 or 5) were associated with significantly higher prevalence of psychotropic medication use compared to those with fewer impairments (GMFCS 1, 2 or 3) (67.1% vs. 43.7%, OR=2.6, 95% CI [1.8, 3.9], $p<0.05$).

Conclusion: Psychotropic medications are widely prevalent in the population with CP, either for psychiatric purpose or for comorbid medical conditions. The clinicians caring for these patients must pay heed to the dangers of polypharmacy and adverse interactions of these psychotropic medications, especially those with higher GMFCS levels. Further research is necessary to examine which psychiatric medications work optimally and are better tolerated by patients with CP.

No. 88

Psychosis as the Presenting Symptom of a Frontal Lobe Glioma: What Psychiatrists Should Know About Frontal Lobe Lesions and How They Can Help

Poster Presenter: Jessica Cosgrove, D.O.

Co-Authors: Akash Vadalia, Humaira Shoaib, M.D.

SUMMARY:

Mr. D. was a 21-year-old male with no past psychiatric history and no past medical history who presented with his mother to an outside hospital for a “behavioral outburst.” He was then admitted medically after the patient’s mother reported that Mr. D. may have hit his head recently, and a CT scan revealed an area of “low density in the right frontal lobe.” The patient was transferred to our hospital and seen by our psychiatry service for ongoing psychotic symptoms, agitation and elopement attempts on the medical floor, not responding to a trial of aripiprazole started by the outside hospital. On interview with the patient, he endorsed the ability to read other people’s minds, decreased need for sleep, increased energy, and grandiose delusions and was hypersexual with tangential and illogical thought processes. The patient’s mother reported that Mr. D. had been acting odd for the past 1.5 years, but had not received any psychiatric care, as she did not think the symptoms warranted psychiatric evaluation at their onset. As Mr. D. remained agitated and was refusing medical evaluations as well as medications, he was switched to haloperidol IV for better compliance and eventually became more agreeable to further workup. At that time, Mr. D. was found to have a right frontal lobe glioma, which was subsequently resected by the neurosurgical team. After surgery, Mr. D. was continued on haloperidol; however, he showed almost complete remission of his psychotic symptoms, better insight and better judgment. While initially inpatient psychiatric admission had been discussed, given the patient’s improvement, he was discharged home with outpatient follow-up. As psychosis is a common cause of presentation to hospitals and is often quickly attributed to psychiatric illness, this case illustrates the importance of a complete medical workup as well as the importance of recognizing psychosis as a presenting symptom of frontal lobe pathology. In this poster, we discuss psychiatry’s role in frontal lobe lesions and the importance of recognizing psychiatric symptoms as presenting symptoms of frontal lobe pathology.

No. 89

Long-Term Psychological Outcomes of Anti-NMDA

Receptor Encephalitis in Post-Acute Care Settings

Poster Presenter: Paroma Mitra

SUMMARY:

Background: Anti-N-Methyl-D-aspartate receptor (anti-NMDAr) encephalitis is a newly diagnosed form of encephalitis that has been observed in many clinical settings. The early onset presentation includes psychosis and/or seizures, where many patients presented with depression, florid psychosis, profound agitation, and, later, a form of generalized tonic-clonic seizures. These may be nonresponsive to traditional anticonvulsants, and often, patients end up in intensive care units with significant cardiac and respiratory deficits. Anti-NMDAr encephalitis has had a progressive course considered treatable with a significant decrease in symptoms. We found that most of the clinical data available focused on detection and early presentation of the illness with few limited studies on long-term outcomes and prognosis. **Methods:** We have reported three unique cases of anti-NMDAr encephalitis that have been previously diagnosed in acute care centers across urban New York City. Carter Hospital is uniquely placed with both long-term acute care and nursing home care where previously diagnosed cases were followed up for extended periods of time. Previous studies and reviews over the past 10 years were reviewed using PubMed and Medline. Search terms “Anti-NmDAR” and “psychosis” or “encephalitis” were used. **Case:** Over the past two quarters of the year of 2016, we have had unique cases of anti-NMDAr encephalitis that have presented from various centers in the city. Each case has a unique onset and presentation that differs from the others. They involve different demographics and have different acute care presentations. The treatment courses have varied from a behavioral point of view and, importantly, there have been varied presentations of cognitive disturbances. Our management in post-acute care settings involved use of mood stabilizers, anxiolytics and psychotropic medications, as well as psychological counseling. From a psychiatric standpoint, episodic agitation was a common presentation and required multiple interventions both from medical nursing care and behavioral health staff to minimize the use of psychotropic medications. **Conclusion:** There have been particular challenges identified in the long-

term care of these cases. They have come with unique challenges in physical medicine; however, their long-term psychiatric prognosis continues to remain unsure. Most studies continue to focus on immunotherapy and tumor removal; however, the efficacy of long-term psychiatric and neurological treatment continues to be a challenge, and clear-cut guidelines for treatment have not been delineated. More prospective cohort trials are required to establish guidelines for the same.

No. 90

Questioning the Decision-Making Capacity of Surrogates

Poster Presenter: Patrick Baumgart
Co-Author: Saba Syed, M.D.

SUMMARY:

When patients are determined to lack capacity to make medical decisions as a result of a psychotic illness, many states allow their family members to act as a surrogate and provide consent for the incapacitated patient. Using the substituted judgment doctrine, family members try to make decisions on behalf of the patient that reflect the values and preferences of the patient in light of the patient's clinical status and prognosis. Ethical challenges arise for the medical team when surrogates themselves have questionable decision-making capacity due to psychosocial issues, lack of insight into the extent of the patient's illness, or the obvious projection of their own personal values and treatment preferences instead of the patient's. However, there is no consensus on how and when to override a surrogate decision maker and proceed with necessary medical treatments against a surrogate's wishes to promote patient beneficence. We describe the case of a 34-year-old female with schizoaffective disorder who demonstrated ongoing refusal of oral intake for several weeks, resulting in substantial weight loss, dehydration and electrolyte imbalances, requiring the placement of an NG tube against the wishes of patient and family to ensure the patient's survival. When a surrogate is unable to demonstrate understanding of the dangers of life-threatening physical illness, a formal evaluation of a surrogate's decisional capacity is required. If the surrogate is deemed to lack capacity or to be acting

against the patient's best interest, involvement of a hospital ethics committee is recommended.

No. 91

Unmet Medication Coverage Needs Among Adults With ADHD

Poster Presenter: Alexandra Khachatryan, M.P.H.

Lead Author: Thomas E. Brown, Ph.D.

Co-Authors: Emuella M. Flood, Phillip Sarocco, R.Ph., M.Sc., Norman Atkins, Ph.D., M.B.A.

SUMMARY:

Background: Stimulant medications have been demonstrated effective for alleviating attention-deficit/hyperactivity disorder (ADHD) symptoms in adults. However, few studies have described differing medication coverage needs experienced by these patients. Some adults with ADHD need coverage only during workday hours; others prefer extended coverage to support social interactions or work/school/family responsibilities in the early morning, late afternoon or evening. This study assessed unmet treatment needs related to duration among adults using various types of medications for ADHD. **Methods:** A cross-sectional online survey was conducted among adults with ADHD taking prescription medication for six months recruited through survey research panels. Survey respondents were stratified by current treatment: long-acting (LA) once a day (LA group), short-acting (SA) two or more times a day (SA group), and augmenters (LA more than once a day, LA plus SA or SA more than twice a day; AU group). Descriptive statistics were calculated for each survey question, and tests of independence were used to analyze responses by subgroup. **Results:** 616 patients (LA: N=201, 33%; SA: N=166, 27%; AU: N=249, 40%) completed the survey. Mean age was 39.0 (SD=12.4); 70% were female. Self-reported ADHD severity and number of comorbidities were similar across groups. Forty-four percent took one ADHD medication dose per day, 35% two doses and 21% three or more doses (same or different medication). Across the sample, the afternoon was most commonly reported as the most difficult time of day (44%). However, LAs were significantly more likely than AUs and SAs to rate evening as most difficult (LA, 49.0%; SA, 30.6%; AU, 24.0%; $p < 0.001$). Respondents commonly noted that medication wearing off had negative effects on

everyday life (work: 250 of 510 [49%]; school: 190 of 356 [53%]; household responsibilities: 307 of 616 [50%]; emotional responses/mood: 235 of 603 [39%]). Despite being on treatment, patients still experienced considerable burden on everyday life from ADHD (home life [83% for one or more impacts]; social life [76%]; work: 359 of 452 [79%]; school: 104 of 129 [81%]). **Conclusion:** Even with medication, ADHD places considerable burden on adults with the condition. Optimizing treatment for adults with ADHD involves accounting for specific patient needs for coverage not only for workday hours, but across the entire day, in particular afternoon and evening hours, while also considering individual differences in time of onset and duration of effective action. These data may be useful to clinicians in efforts to help patients optimize medication coverage for differing individual needs. This study was supported by Shire Pharmaceuticals, Inc.

No. 92

Persisting Psychosocial Impairments in Adults Being Treated With Medication for ADHD

Poster Presenter: Emuella M. Flood

Lead Author: Thomas E. Brown, Ph.D.

Co-Authors: Phillip Sarocco, R.Ph., M.Sc., Norman Atkins, Ph.D., M.B.A., Alexandra Khachatryan, M.P.H.

SUMMARY:

Background: Barkley and others have described the impact of attention-deficit/hyperactivity disorder (ADHD) on adults with ADHD in their everyday lives and how impairments compare with those of matched samples of adults without ADHD. There is less research on how much impairment in daily life is reported by adults being treated with ADHD medication. The aim of this study was to characterize impairment in daily life reported by adults with ADHD who are being treated with pharmacotherapy and compare it to a general population sample of adults without ADHD.

Methods: An online survey was conducted among U.S. adults with and without ADHD recruited through survey research panels. Survey respondents with ADHD had to be taking prescription medication for six months or more and were stratified by current treatment: long-acting (LA) once a day, short-acting (SA) two or more times a day, and

augmenters (AU)—taking LA more than once a day, LA plus SA or SA more than two times a day. Non-ADHD controls were recruited with the aim of having a similar mean age and sex distribution as the ADHD sample. Both treated ADHD and non-ADHD participants were asked to report on their everyday life challenges. Descriptive statistics were calculated for each survey question. Tests of independence were used to analyze responses by ADHD versus non-ADHD subgroups. **Results:** 616 treated adults with ADHD and 200 non-ADHD controls completed the survey. Mean ages of the ADHD and non-ADHD samples were 39.0 (SD=12.4) and 43.1 (SD=17.0) years, respectively ($p=0.0003$). Seventy percent of both the ADHD and control samples were female. Everyday life challenges were more frequently reported among treated ADHD patients versus controls, particularly with regard to finishing tasks (64% vs. 17%), being organized in daily life (49% vs. 9%) and being productive at work (51% vs. 10%) (all $p<0.0001$). ADHD was found to have impacts on social interactions as well; significantly more ADHD patients reported challenges focusing when with family and friends (29% vs. 6%), holding conversations (32% vs. 10%) and responding appropriately in social situations (29% vs. 8%) (all $p<0.0001$). The most challenging time of day for ADHD patients was most often reported as the afternoon (44%) and for controls was the early morning (33%). Additional analyses will examine whether everyday life challenges differ between adults with ADHD receiving LA, SA or AU treatment. **Conclusion:** These results suggest that adults with ADHD report significantly greater impairments in many activities of daily life, even while being treated with ADHD medication. This suggests that clinicians prescribing medications for adults with ADHD should monitor treatment response not only in terms of *DSM-5* symptoms, but also for other impairments of daily life, which may be responsive to medication and/or psychosocial treatments tailored to the wider range of ADHD-related impairments in daily life. This study was supported by Shire Pharmaceuticals.

No. 93

Resident Depression: A Predictive Study of Social Skills as a Potential Protection in Medical Residents Under Conditions of Risk

Poster Presenter: Karina Pereira-Lima

Co-Authors: José Alexandre Crippa, Srijan Sen, Sonia Regina Loureiro

SUMMARY:

Background: Medical residency has been recognized as a risk period for the development of depression, which is associated with many negative impacts on physicians and their patients. Given the relevance of interpersonal interactions for medical practice, this cross-sectional, correlational, predictive study evaluated social skills as a potential protective factor for the development of depression in residents under personal and work-related conditions of risk.

Methods: After approval from the institutional ethics committee, 450 residents of a Brazilian public university hospital were invited to complete the following validated self-reported instruments: Patient Health Questionnaire-2 (PHQ-2), Social Skills Inventory, NEO-Five Factor Inventory–Neuroticism Scale, Burnout Syndrome Inventory–Exhaustion Scale, and a complementary questionnaire assessing gender, duty hours, shift schedule, specialty, and residency year. Data analysis was conducted in a two-step process. First, Pearson correlation tests were performed to verify the associations between the study variables. Second, all variables significantly ($p < 0.05$) correlated with depression were entered into a stepwise linear regression model in order to identify significant predictors for depression while accounting for collinearity among variables. **Results:** A total of 300 medical residents completed the survey, and 68 (22.7%) screened positive for depression (PHQ-2 score=3). Among eight variables tested, four were significantly correlated with depressive symptoms (exhaustion, $r=0.501$, $p < 0.001$; neuroticism, $r=0.617$, $p < 0.001$; social skills, $r=-0.408$, $p < 0.001$; and women, $r=0.135$, $p=0.019$). When these variables were entered into the stepwise linear regression, only neuroticism ($\beta=0.437$, $p < 0.001$), exhaustion ($\beta=0.270$, $p < 0.001$) and social skills ($\beta=-0.111$, $p=0.028$) remained significant and explained the total variance of 44.4% in depressive symptoms. **Conclusion:** High levels of exhaustion experienced during medical training associated with a predisposing factor for depression (neuroticism) increased the risk for depressive symptoms in this sample of medical residents, while an elaborate repertoire of social skills reduced such risk. These results highlight the need for initiatives for reducing

the stress of medical residency, as well as the relevance of development of interpersonal skills in medical education. Considering that social skills can be learned, this systematization of data may inform the design of measures aimed at preventing depression in medical residents. This study received financial support from São Paulo Research Foundation (FAPESP) grant 2016/13410–0.

No. 94

The Relationship Between Emotional Intelligence, In-Training Exam Scores and Patient Interaction Response Styles of Residents in a Community Program

Poster Presenter: Salima Jiwani

Co-Authors: Pramil Cheriya, M.D., Ahmad Hameed, M.D., Vinod Nookala, M.D., Irina Mishagina, M.D., Joshua Jackson, M.D., Yijin Wert, Neal Mehta, M.D., Pooja Saiganesh, Sai Guduru, M.D., Michael Asken, Ph.D

SUMMARY:

Background: Research has shown that emotional intelligence (EI) can strongly predict residents' well-being, facilitate a positive physician-patient relationship and aid in the development of all six ACGME core competencies. The purpose of this study was to assess the EI of internal medicine residents and its ability to predict their in-training exam (ITE) performance and/or response styles in hypothetical physician-patient encounters.

Methods: We conducted a cross-sectional study assessing the EI of internal medicine residents in a community program. All internal medicine residents in the program were eligible to participate. After obtaining approval from the Institutional Review Board, residents consented by volunteering to participate in the study. Demographic data, including gender, postgraduate year and whether a majority of high school was completed in the United States, was collected. EI was assessed by administering the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), which was scored using Multi-Health Systems' web portal. Ten hypothetical physician-patient scenarios were developed, with each having six answer choices representing various response types including hostile, probing, supportive, dismissive, judgmental and reassuring. Chi-square, t-tests and Pearson correlation coefficient were used

for data analysis. **Results:** Of the 38 eligible residents, 35 (43% women) agreed to participate. The EI scores ranged from the 0.0012 to 86.6254 percentile. Mean EI was at the 34.9307 percentile with a standard deviation of 28.12. No significant difference in EI was noted across gender, postgraduate years or place of high school completion. We found no significant correlation between EI and ITE performance. We found no significant correlation between EI and the propensity for response type. We found a statistically significant negative correlation between a dismissive response style and ITE performance ($p < 0.001$). Supportive and reassuring response styles showed a trend for a positive correlation with ITE, but did not reach statistical significance. We found no significant correlations between ITE performance and other response choices. **Conclusion:** While we did not find a significant correlation between EI and ITE performance (consistent with previous literature) or EI and patient interaction response styles, we did find a statistically significant negative correlation between a dismissive response style and ITE performance. While not reaching statistical significance, there was a trend for a positive correlation between reassuring and supportive response styles and ITE performance. Limitations of our study include a small sample size. To our knowledge, this work complements only two other known studies involving internal medicine physicians. Our study provides initial data that may help design future studies to better characterize EI's role with physician-patient interaction response styles.

No. 95

Effect of Ketamine Plus Electroconvulsive Therapy in Treatment of Major Depressive Episode: A Pilot Study in Thailand

Poster Presenter: Pichai Ittasakul

Lead Author: Tanya Vichaikosol

Co-Author: Varinee Lekprasert

SUMMARY:

Objective: Assess the efficacy of ketamine plus electroconvulsive therapy (ECT) compared with ECT alone for treating major depressive episode in major depressive disorder and bipolar disorder **Methods:** A double-blind randomized control trial was conducted

between July 2015 and July 2016. Subjects included patients with major depressive episode who received inpatient ECT at the department of psychiatry of Ramathibodi Hospital, Bangkok. Twelve patients were randomized into two groups; the experimental group received ketamine 0.5mg/kg plus ECT and the control group received ECT alone. Montgomery-Åsberg Depression Scale (MADRS) score was used to assess depressive symptoms at baseline, after first ECT, after third, and then after three consecutive ECTs until the end of treatment. Hemodynamic changes and adverse events were recorded. **Results:** MADRS score in the experimental group had greater decrease than the control group after third ECT evaluation ($p = 0.047$). Remission rate after the sixth ECT evaluation in the experimental group was higher than in the control group ($p = 0.048$). No statistical significance between the control and experimental groups was detected in hemodynamic changes and adverse events. **Conclusion:** Intravenous injection of ketamine 0.5mg/kg plus ECT could accelerate the effect of ECT in depressive patients during the initial phase, but ketamine injection does not increase the effect of ECT at the end of treatment.

No. 96

Promoting Overall Wellness and Eliminating Risk of Burnout in Trainees (POWER BIT): An Experiential Approach

Poster Presenter: Theresa Toledo, M.D.

Co-Authors: Deepak Prabhakar, M.D., M.P.H., Cindy Devassy, M.D.

SUMMARY:

Background: Burnout during residency training is a well-known risk factor potentially inhibiting the professional growth of trainees and exposing them as well as their patients to poor outcomes. A composite of work-related exhaustion, detachment and sense of stagnation burnout has been identified as one of the leading factors associated with physician distress, depression and medical errors. Recognizing that the problem of burnout impacts the medical education continuum, medical schools have introduced wellness programs, and residencies have limited duty hours. There is a relative dearth of data on effectiveness of wellness programs during residency training. Further, even though there is

intense focus on burnout, trainees often fail to recognize signs of burnout. **Methods:** We implemented a three-segment (2.5 hours) interactive workshop during the week of orientation with the incoming class of six PGY-1 psychiatry residents. The intervention had four specific learning objectives: 1) identify symptoms of burnout; 2) identify common factors leading to physician burnout; 3) promote wellness-oriented strategies; and 3) familiarize themselves with available local resources. The workshop was co-led by residents to potentially help facilitate candid discussion among resident participants and increase their confidence in the feasibility of mitigation strategies that were presented. The workshop began with an overview of physician burnout: what burnout entails, signs and symptoms, rates, and associated poor outcomes. We then discussed a “five-factor” model of burnout focusing on work hours, poor physical conditioning, minimal family quality time, insomnia, and financial insecurity. After discussing the “what and whys” of burnout, the participants engaged in a group exercise designed to create awareness of individual-level, generally unrecognized multifactorial causes of daily stress. In the second segment, we demonstrated common stressful scenarios in residency, with active role play around suggested scenarios from the participants. We then had a resident demonstrate stress-reducing strategies derived from skills training in dialectical behavioral therapy with in-vivo examples and suggestions for practical application. In the third segment, we explored mindfulness in an interactive session with the help of an illustrated fable and addressed common burnout-related cognitive errors and closed with a comprehensive overview of specific resources for individuals seeking further assistance. **Results:** The pilot workshop demonstrated the feasibility and potential value of this program as a tool for burnout prevention programs during residency training. Participant feedback regarding the timing, duration, applicability of content, and senior resident participation was positive and included the need for a “post-intervention” resource sheet to remind participants of the common stressful scenarios and coping strategies.

Young Investigators' New Research Posters 1

No. 1 Fluphenazine-Induced Agranulocytosis: A Case Report and Literature Review

Poster Presenter: Alejandro M. Ramirez, M.D.

Co-Author: Yassir Mahgoub

SUMMARY:

Background: Fluphenazine-induced agranulocytosis is a rare and lethal side effect, the incidence of which is unclear, with one report suggesting a consensus of 1:700 compared to clozapine (0.05 to 2:100). Several risk factors have been proposed, such as sex, with female to male ratio being 6:1; older age; oral formulation; and earlier stage of medication use. Though the exact mechanism remains elusive, literature suggests an immunological or enzymatic process. **Objective:** To increase the awareness of agranulocytosis following treatment with fluphenazine, discuss the risk factors and evaluate the need for regular screening as an integral part of follow-up, we present a case of a patient with fluphenazine-induced agranulocytosis.

Methods: A literature search was conducted on PubMed and Google Scholar using the keywords “fluphenazine” and “agranulocytosis,” in addition to data collection of this individual case. **Case:** A 35-year-old male with a history of schizoaffective disorder and autism spectrum disorder required inpatient admission in context of psychotic decompensation when fluphenazine was discontinued due to onset of drug-induced agranulocytosis. The patient has a history of multiple medication trials, resulting in drug-induced agranulocytosis with haloperidol, risperidone, quetiapine, and valproate, and these events resulted in decompensation with multiple hospitalizations. This warranted an annual follow-up for blood count. Three years prior to the current presentation, the patient was stabilized on fluphenazine decanoate. While on fluphenazine, six months ago, his absolute neutrophil count (ANC) was found to be 1,500 cells/ μ L, resulting in closer monitoring until ANC dropped to 800 cells/ μ L, and it was discontinued five months back. Following discontinuation of fluphenazine, his ANC again increased to 1,500 cells/ μ L. Poor medication compliance resulted in decompensation and the patient’s hospitalization. A week before admission, ANC rose to 2,200 cells/ μ L. Viral infection was suggested, and it was

recommended to be rechallenged on fluphenazine with close monitoring. ANC on current admission was 9,300 cells/ μ L; therefore, the patient was restarted on fluphenazine, and ANC dropped to 2,430 cells/ μ L in two days. ANC decreased further to 1,960 cells/ μ L following increased dosage of fluphenazine. Given the downward trend of ANC, it was decided to suspend fluphenazine. Only one other case reports occurrence of agranulocytosis first with fluphenazine decanoate use after long-term treatment and subsequently with other medication trials following this first event. Currently, there are no recommendations for screening and management of fluphenazine-induced agranulocytosis. **Conclusion:** Fluphenazine could cause agranulocytosis, and frequent monitoring of ANC may be useful. Prior medication-induced agranulocytosis could be a risk factor. It is suggested that patients with previous agranulocytosis should be monitored regularly.

No. 2

Patient Overdosed on Zoloft Leading to Diagnosis of SSRI-Induced Acute Pancreatitis: Case Report

Poster Presenter: Angela Sureen

SUMMARY:

Acute pancreatitis is a severe disease with an increasing incidence in recent history. The two most common risk factors for pancreatitis include alcohol use and gallstones. Medication use is a less frequently documented risk factor for pancreatitis, which causes approximately two percent of acute pancreatitis cases. We report a case of a 46-year-old female with a history of depression and anxiety who presents with abdominal pain and an elevated lipase after overdosing on Zoloft, consistent with acute pancreatitis. After discontinuing Zoloft and supportive care, the patient's pancreatitis clinically improved. Although several cases have been reported documenting sertraline-induced pancreatitis at standard doses, this case was unique, as the patient overdosed on an SSRI. Research is lacking with regards to whether there is a dose-dependent adverse effect to sertraline presenting as acute pancreatitis. Due to the potential severity of the disease and the widespread use of Zoloft, our case reminds us of the complications of SSRI use, especially during states of psychological crisis.

No. 3

The Somatic and Psychiatric Manifestations of Gabapentin Withdrawal: A Case Report

Poster Presenter: Ariela D. Green

Co-Author: Kenneth M. Certa, M.D.

SUMMARY:

Use of gabapentin is rapidly increasing, especially off label. Among the off-label indications are alcohol use disorder, anxiety, insomnia, peripheral neuropathy, and dystonia. Some cases of gabapentin withdrawal have been reported in the literature. This case report details the prolonged hospital course of a 65-year-old woman with obsessive-compulsive disorder and degenerative scoliosis who experienced gabapentin withdrawal postoperatively. The medication had been abruptly discontinued in the postoperative period, and the patient displayed altered mental status, agitation and rigidity. After gabapentin was restarted, the patient's symptoms dramatically improved. This case report presents the evidence of severe gabapentin withdrawal syndrome in the setting of abrupt cessation and the dramatic dissipation of symptoms following return of the medication to the patient's regimen.

No. 4

Long-Term Effectiveness of Lurasidone in Treatment-Resistant Bipolar Disorder

Poster Presenter: Dennis Do

Co-Authors: Terence Ketter, M.D., Shefali Miller, M.D.

SUMMARY:

Objective: Assess lurasidone effectiveness in treatment-resistant bipolar disorder (BD) patients. **Methods:** We naturalistically administered open lurasidone to outpatients assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation and monitored longitudinally with the STEP-BD Clinical Monitoring Form. **Results:** Sixty-one patients (32 type I, 26 type II, three type not otherwise specified, mean \pm SD age 45.1 \pm 14.0 years, 63.9% female) received lurasidone, combined with on average 3.1 \pm 1.4 (in 88.5% of patients at least two; in only 3.3% as monotherapy) other non-benzodiazepine prescription psychotropic medications, started most

often during syndromal depression (57.4%) and less often during subsyndromal depression (23.0%) and euthymia (19.7%). Lurasidone was taken for a median 126 days, with final dose 54.6±31.2mg per day. Lurasidone tended to primarily relieve syndromal depressive symptoms and maintain euthymia. By final visit taking lurasidone, the syndromal depression rate decreased by nearly half to 31.1%, the euthymia rate more than doubled to 42.6%, whereas the subsyndromal depression rate did not change at 23.0%. In 14.8% of trials, lurasidone was continued on average 445±338.3 days with no subsequent psychotropic medications added. In 8.2% of trials lurasidone was continued on average 895±649 days, but had subsequent psychotropic added. CGI-BP-OS improved significantly in patients with baseline syndromal depression and did not worsen significantly in patients with baseline euthymia or subsyndromal depression. However, lurasidone was discontinued in 77.0% of trials, after median 103 days, due to adverse effects in 50.8%, most often central nervous (including akathisia in 14.8% and sedation/somnolence in 13.1%) or gastrointestinal/metabolic (including nausea in 8.2% and weight gain in 6.6%) problems, and due to inefficacy and other reasons in only 16.4% and 9.8%, respectively. At least seven percent weight gain was seen in 9.8% of patients. Aside from akathisia, sedation/somnolence, nausea, and weight gain, lurasidone was generally well tolerated. **Conclusion:** In American BD specialty clinic outpatients with treatment resistance, primarily adjunctive (96.7%) longer-term lurasidone commonly yielded relief of syndromal depression and maintained euthymia, suggesting efficacy. However, 50.8% discontinued lurasidone due to adverse effects, suggesting tolerability limitations in these challenging patients, nearly 90% of whom were already taking at least two other psychotropic medications.

No. 5

Re-Challenge With Clozapine After NMS and Seizure in a Patient With DiGeorge Syndrome: Case Report and Review of Literature

Poster Presenter: Katherine M. Edwards, M.D.

SUMMARY:

Mr. O., a 25-year-old Caucasian male with a

psychiatric history of schizophrenia, moderate intellectual disability, and DiGeorge syndrome (chromosome 22q11.2 deletion syndrome [DS]), was admitted to an acute psychiatric hospital for worsening aggression and suicidal and homicidal ideations. Over many years, he was tried on a combination of several psychotropic medications, including risperidone, citalopram, quetiapine, aripiprazole, carbamazepine, divalproex, clonazepam, temazepam, fluphenazine, and venlafaxine. Despite these multiple medications, the patient continued to have refractory psychotic symptoms and aggression. A plan was developed to initiate clozapine in an inpatient psychiatric setting so as to minimize his symptoms and avoid polypharmacy. Individuals with 22q11.2DS, a genetic subtype of schizophrenia, respond as well to clozapine as those with other forms of schizophrenia. It has been reported that serious and rare adverse events, including seizures and myocarditis, have been associated with clozapine treatment in this population. However, to the best of our knowledge, the incidence of neuroleptic malignant syndrome (NMS) as an adverse effect of antipsychotic use in patients with this disorder has not yet been reported. We present the first case of clozapine-induced NMS and subsequent rechallenge in a patient with 22q11.2DS-associated schizophrenia.

No. 6

Extrapyramidal Symptoms With Aripiprazole: Results of the IRL-GREY Randomized Clinical Trial for Treatment-Resistant Late-Life Depression

Poster Presenter: Jonathan H. Hsu, M.D.

Co-Authors: Benoit Mulsant, Eric Lenze, Marcos Sanches, Jordan Karp, Charles Reynolds, Daniel Blumberger

SUMMARY:

Background: There is increasing evidence supporting the use of aripiprazole augmentation in treatment-resistant late-life depression. Extrapyramidal symptoms (EPS) like akathisia and Parkinsonism are distressing adverse effects that can lead to treatment discontinuation, yet there is a paucity of data. We investigated the prevalence and clinical correlates of EPS in older patients receiving aripiprazole for treatment-resistant major

depression. **Methods:** We analyzed outcome data from a placebo-controlled randomized clinical trial of aripiprazole augmentation in treatment-resistant late-life depression. After an open-label lead-in phase with venlafaxine XR, non-remitters were randomized to augmentation with aripiprazole or placebo. Akathisia and Parkinsonism were measured at each visit during the 12-week trial using the Barnes Akathisia Scale and Simpson Angus Scale, respectively. Clinical correlates analyzed included age, sex, ethnicity, weight, medical comorbidity, baseline anxiety, depression severity, concomitant medications including benzodiazepines, and aripiprazole dosage. Among the participants randomized to aripiprazole, we compared these variables between those with and without treatment-emergent EPS using Fisher's exact test for categorical variables and the Mann-Whitney U Test for continuous variables. We used logistic regression to identify potential correlates for each outcome. A moderator analysis was used to investigate characteristics that explain the additional adverse effects of EPS in the aripiprazole arm compared to the placebo arm. **Results:** Twenty-four of 90 (26.7%) participants developed akathisia; predictors of akathisia were more severe depression and not receiving benzodiazepines. Participants who developed akathisia had higher depression severity with a mean Montgomery-Åsberg Depression Rating Scale (MADRS) score of 25.9 (SD=6.1) versus 22.7 (SD=6.4), Mann Whitney U Test, $p=0.03$. Using logistic regression for predictive modeling where nonsignificant variables were excluded with backward selection, only MADRS score remained significant (OR=1.09, 95% CI [1.01, 1.18]). A moderator analysis revealed that participants taking benzodiazepines did not show any treatment effect—they had the same level of akathisia regardless of whether they were randomized to aripiprazole or placebo. Those who were not taking benzodiazepines showed a treatment effect: levels of akathisia were significantly higher in the aripiprazole group than in the placebo group. Fifteen of 91 (16.5%) participants developed Parkinsonism, but no clinical correlates were identified. **Conclusion:** In older depressed patients treated with aripiprazole, depression severity may be an important risk factor for developing akathisia.

Benzodiazepines may prevent the development of akathisia.

No. 7

Difficulty Managing Phantosmia in a Patient With Mood Disorder

Poster Presenter: Kumail Hussain, M.D.

Co-Author: Fernando Espi Forcen, M.D.

SUMMARY:

Mr. B. is a 51-year-old Caucasian male with a past history of alcohol use disorder who presented to the emergency department with worsening depressive symptoms and new-onset olfactory hallucinations. The patient's alcohol use consisted of six packs of beer or up to a pint of alcohol for three to seven days a week, which the patient stopped three months prior to his presentation to the ED. He came to the ED reporting olfactory hallucinations. He reported using an AC unit given to him by his friend for his apartment a month prior to his presentation to the ED. After three days of using the unit, the patient stated he woke up choking from his sleep and smelled a malodorous scent and discovered his AC unit had mold in it. Thereafter, the patient discarded his AC unit; however, he continued to endorse a repulsive odor he described as a "poisonous smell." The patient endorsed decreased sleeping, weight loss and depressed mood. Due to the bad smell, he had stopped performing as a musician and had moved out of his apartment to his mother's house. However, the patient still reported the malodorous smell in his mother's house. It is important to note that the patient's mother and friends could not smell this odor, even at his apartment. Therefore, he was brought to the ED and after a medical cause for his symptoms was not found, he was admitted to the inpatient psychiatric unit for the treatment of primary olfactory hallucinations and depressive symptoms. Olfactory hallucinations, or phantosmia, are characterized by a person smelling odors that are not present in the environment. The "phantom" smell can come and go and be present in one or the two nostrils. Usually, phantosmia can present secondary to a medical cause such as epilepsy, traumatic brain injury, an upper respiratory infection, or tumors in the nostrils or the brain. When a medical cause is not detected, patients are often diagnosed with primary olfactory

hallucinations. In those cases, the hallucination can happen in the context of a mood, anxiety, psychotic or conversion disorder. The patient while on the inpatient unit was treated with risperidone, quetiapine, clomipramine, and clonazepam. He was ultimately diagnosed with bipolar disorder. His symptoms finally remitted with treatment with an SSRI and lithium. This poster will discuss the rare phenomenon of phantosmia or olfactory hallucinations associated with mood disorders. We will discuss some of the challenges in treating olfactory hallucinations and will discuss the case of our patient whose olfactory hallucinations refractory to multiple psychotropic medications eventually remitted to a combination of SSRI treatment augmented with a moderate dose of lithium.

No. 8

Aripiprazole as an Adjunctive Treatment for Depression in Combination With Antipsychotic Treatment in Schizoaffective Disorder

Poster Presenter: Rakel Salamander

Co-Author: Brenda Jensen

SUMMARY:

Mr. T., a 38-year-old African-American male with schizoaffective disorder, depressive type and GAD presented to his weekly outpatient clinic appointment with pronounced paranoia and progressing intrusive thoughts of harming his family. He was subsequently hospitalized on the acute psychiatric unit. This is a well-known patient to psychiatry since 2010, with multiple past hospitalizations, who has struggled with profound treatment-refractory depression and paranoia. Since 2010, multiple treatment regimens consisting of combinations of SSRIs/SNRIs with different first- and second-generation antipsychotics have been trialed, with discontinuation of several due to side effects such as nausea and weight gain and others due to lack of efficacy. When Mr. T. was hospitalized, he was started on paliperidone long-acting injectable and continued on lurasidone, duloxetine and sertraline. Aripiprazole was discontinued, as the patient was already on two antipsychotics and it was felt that aripiprazole would not provide additional benefit. During his hospitalization, Mr. T. had significant improvement in paranoia and was no longer having thoughts of harming his family, so he

was discharged on the aforementioned regimen. When Mr. T. presented to his one-week post-hospital follow-up visit, his paranoia was still well controlled; however, he had a marked increase in depressive symptoms, mainly anhedonia, and new-onset suicidal ideations without intent or plan. Despite the patient already taking two second-generation antipsychotic medications, it was felt that restarting aripiprazole may improve depressive symptoms given its efficacy with treatment-resistant depression. Upon restarting aripiprazole 2.5mg, Mr. T. presented the following week with a significant improvement in depression symptoms and fewer suicidal ideations. Aripiprazole was then increased to 5mg, and over the subsequent two months, Mr. T. stabilized without depressive symptoms and no suicidal ideations. Second-generation antipsychotics, along with medications such as lithium and thyroid hormone, have been a focus in the study of adjunctive therapy for treatment-resistant depression. Aripiprazole is the first medication approved by the FDA as an adjunct to SSRIs for treatment-resistant depression based on results from two multicenter, double-blind, randomized, placebo-controlled studies. While these two studies examined aripiprazole as an adjunct to SSRIs in major depression disorder only, it may also be a possible adjunct treatment for depression in patients who have both psychosis and depression, even when a patient is taking other second-generation antipsychotic medications. In this poster, we present a case that describes aripiprazole as an adjunct therapy for depression in a patient with schizoaffective disorder as evidenced by worsening depressive symptoms after discontinuation of aripiprazole, followed by rapid improvement with its reinstatement.

No. 9

A Lesson to Learn From the Relapse of a Stable Clozapine Patient Following Roux-en-Y Gastric Bypass Surgery: A Case Report and Literature Review

Poster Presenter: Yassir Mahgoub

SUMMARY:

Objective: Describe a case report of a clozapine patient who was stable for three years and decompensated following Roux-en-Y gastric bypass

surgery (RYGB), review the literature regarding the effects of gastric bypass surgery (GBS) on clozapine treatment and highlight important considerations. **Background:** Clozapine is the treatment of choice for treatment-resistant schizophrenia. Weight gain is particularly common among patients on clozapine and may frequently undermine treatment compliance. On the other hand, RYGB has emerged as a popular procedure for the treatment of obesity. GBS changes several pharmacokinetic factors. Some changes happen instantly, such as changes in the absorption surface area, acidity and intestinal metabolism of medications, while others such as fat storage and the volume of distribution change later. Some recent studies focused on RYGB postsurgical changes on antidepressants; however, to our knowledge, no literature was published on changes with clozapine with the exception of one in-vitro study that suggested lowering of clozapine following GBS. **Methods:** A case summary of a patient maintained on clozapine who decompensated soon following GBS; a systematic PubMed search for “clozapine,” “gastric bypass” and “psychotropic;” and a review of literature pertaining to the effects of RYGB on the pharmacokinetics of psychotropic medications were performed. **Case:** This is the case of a 31-year-old man, diagnosed with schizoaffective disorder and with history of multiple inpatient hospitalizations in the past. Prior to the surgery, he was taking his medications regularly and was functioning in society for three years. He was maintained on clozapine (total of 325mg daily), lithium 1200mg daily and Effexor 225mg daily. His last clozapine level was 451ng/dl and lithium was 0.8ng/dl a few days prior to RYGB. Within three months after his RYGB, no lithium toxicity symptoms were reported. He became nonadherent to his medications and started exhibiting paranoid and grandiose delusions, requiring inpatient hospitalization. **Conclusion:** RYGB can influence the response to multiple psychotropic medications by altering several pharmacokinetic factors. Some changes happen instantly, such as absorption surface, acidity and intestinal metabolism of medications, while others change later, such as fat amount and the volume of distribution. Changes in lithium levels and toxicity should be anticipated following RYGB. To date, only one in-vitro study suggested decrease of clozapine level following

RYGB, with no human studies or case reports about the topic. Given the significant correlation between clozapine levels and clinical response in treatment-resistant populations, close follow-up of clinical symptoms and blood levels and appropriate dose titration following RYGB might be required.

No. 10

Gabapentin for Treatment of Alcohol Use Disorder: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Poster Presenter: Davit Khachatryan, M.D., M.H.Sc.

Co-Authors: Christian Schutz, Jamey Adirim, Mir Nadeem Mazhar

SUMMARY:

Background: Alcohol use disorder (AUD) is a psychiatric condition associated with significant morbidity, mortality and disability adjusted life-years. Gabapentin may constitute a novel management approach and has been tested recently in a number of trials. We conducted a meta-analysis to examine the effectiveness of gabapentin for treatment of AUD. **Methods:** A systematic review of databases for randomized, double-blind, placebo-controlled trials of adults diagnosed with AUD who were treated with gabapentin was conducted in June 2016. No limitations were placed on language or year of publication. **Results:** Six randomized controlled trials of gabapentin for treatment of patients with AUD were included (sample N=393). We found that the dropout rate did not differ significantly between placebo and gabapentin (N=319 participants, RR=0.97, 95% confidence interval [CI] [0.69, 1.37]), with homogeneity of included studies ($I^2=24.7$). We also found that gabapentin had statistically significant positive effects on heavy drinking, with a large effect size (N=333, $g=1.07$, 95% CI [0.85, 1.29]) and with high heterogeneity of included studies ($I^2=87.8$), as well as statistically significant positive effects on craving with a small effect size (N=291, $g=0.35$, 95% CI [0.015, 0.676]) and low heterogeneity of included studies ($I^2=37.6$). **Conclusion:** Gabapentin was more effective than controls in decreasing heavy drinking and cravings in adults with AUD and had a more favorable safety profile. While promising, results should be interpreted with caution given the limited total number of participants, as well as a significant

number of dropouts in the largest included study. In addition, gabapentin itself may present a potential for abuse; therefore, risk-benefit analysis is necessary prior to treatment initiation. **Keywords:** Gabapentin, Alcoholism, AUD, Abstinence, Meta-Analysis

No. 11

Acute Presentations of Patients With Synthetic Cannabinoid Compared to Cannabis Use in a Psychiatric Emergency Room

Poster Presenter: Daniel DeFrancisco

Co-Authors: Anahita Bassirnia, M.D., Sharron Spriggs, M.D., Charles Perkel, M.D., Igor Galynker, M.D., Ph.D., Yasmin L. Hurd, Ph.D.

SUMMARY:

Background: Synthetic cannabinoids (SC) are similar to cannabis in their effect, but are much more potent and efficient at binding cannabinoid receptors. Despite recent legal efforts to curb their use, SCs remain an attractive alternative to cannabis for many people, as they are cheap, readily available and undetectable on standard urine toxicology screens. In our previous study in an inpatient setting, we found that SC use was more strongly associated with psychosis and agitation than cannabis use. However, we did not evaluate patients' initial presentations in the emergency room. This study attempts to better characterize the more acute signs and symptoms associated with SC versus cannabis use by examining the clinical presentation of the same patient population upon their arrival to the psychiatric emergency room. **Methods:** The patient population for this study included individuals admitted to a dual diagnosis psychiatric unit at Mount Sinai Beth Israel (MSBI) from March 1, 2014, to February 28, 2015. Of the total 594 inpatient encounters, 226 were selected for this study based on their use of SC and/or cannabis as determined by self-report and urine toxicology. The electronic records from the emergency room visits of those 226 patients were then reviewed. We compared clinical symptoms, vital signs, routine blood and urine laboratory values, and medications used to manage acute symptoms between the following four study groups: 1) SC and cannabis use (SC+MJ+; N=49); 2) SC use without cannabis use (SC+MJ-; N=32); 3) cannabis use without SC use (SC-MJ+; N=94); and 4)

no SC or cannabis use (SC-MJ-; N=51). **Results:** The mean age of our sample was 36.5 years (SD=12.1), and 73.8% were men. Psychosis was significantly more common in the SC+MJ- group (80.0%) than the SC+MJ+ group (65.0%), followed by the SC-MJ+ group (51.2%) and finally the SC-MJ- group (25.6%) ($p<0.05$). Likewise, agitation was much more common among SC users than nonusers, with the highest rates in the SC+MJ- group (60.0%) and the SC+MJ+ group (45.0%), and the lowest rates in the SC-MJ+ group (31.7%) and the SC-MJ- group (34.9%) ($p<0.05$). Rates of physical aggression and use of restraints were also significantly different between groups, and occurred most frequently in the SC+MJ+ group at 17.5% and 30%, respectively ($p<0.05$). There was not a statistically significant difference in vital signs or laboratory values, including glucose and creatinine, between groups. **Conclusion:** The acute effects of SC use, compared to cannabis use, in patients with mental illness predominantly relate to psychosis, agitation, physical aggression, and need for physical restraints. These findings have important treatment implications for mental health care providers.

No. 12

The Dark Web and the Future of Addiction

Poster Presenter: Dwight Zach Smith, M.D.

SUMMARY:

Background: The dark web, an anonymous and hidden part of the deep web of the Internet, has received increasing attention as an area in which a multitude of illegal drugs can be relatively easily, quickly and anonymously obtained. Sellers using online auction forums promote thousands of different natural and synthetic drugs and chemicals and employ a variety of technological methods, including the use of multiple anonymizing Internet relays as well as the largely untraceable bitcoin currency, to prevent law enforcement agencies from tracking and enforcing restrictions regarding drug distribution and purchasing. The proliferation of the dark web and the vast quantity of substances available on it, including many largely unknown and untested synthetic analogs of opioids, stimulants and hallucinogens, pose unique challenges to physicians treating addictions as well as potentially significant health concerns. Given the ready

availability on the dark web of multiple powerful drugs, designer drug analogs and research chemicals and the limited understanding of the interactions and harmful consequences of these substances, it is expected that as use of the dark web expands, adverse outcomes associated with substances obtained through it will increase. **Methods:** In this report, we describe a case of an individual who, while being maintained on Suboxone, discovered the dark web and the many drugs of abuse available on it. We outline the ways he used to illegally and anonymously obtain “china white,” an analog of fentanyl with unique pharmacokinetic and pharmacodynamics properties. His experiences with this process as well as the challenges this largely undescribed opioid led to in his ongoing addiction and its management are discussed, including the process of opioid identification and his detoxification. The results of a literature search on this topic are also reviewed and summarized. **Results:** Use of the dark web to obtain illegal drugs is becoming increasingly common, with annual sales estimated to be in the \$100 to \$200 million range. Little technological savvy is needed to purchase drugs through the dark web, and identifying distributors and buyers, as well as intercepting shipments, is a challenging process for law enforcement. Despite well publicized crackdowns, this form of illegal commerce appears to be flourishing, and increasingly sophisticated methods of avoiding detection are being used. **Conclusion:** The dark web, with its anonymity and easy access to thousands of illegal drugs, is likely to continue to expand and pose challenges to individual clinicians treating addiction, as well as to society at large. Recognition of this source of drugs and the implications of potentially expanded use of synthetic analogs and other addictive substances will likely become increasingly important in the upcoming years.

No. 13

Prevalence of Prescription Stimulant Abuse Among a Sentinel Surveillance Population of Substance Abusers

Poster Presenter: Joanna L. Burtner

SUMMARY:

Background: Prescription stimulant abuse is often

characterized in young adult and college-age populations. However, misuse and abuse of prescription stimulant medications may also be problematic among older adults, particularly poly-substance abusers and those with high-severity drug issues. This observational study examined the prevalence of prescription stimulant abuse in a population of substance abusers. **Methods:** A sample of 174,640 adults (age 18–90) were assessed on the severity of their substance abuse problem, as well as their use of prescription stimulants, by completing the Addiction Severity Index-Multimedia Version from January 1, 2013, through June 30, 2016. Prevalence of stimulant abuse was calculated using generalized estimating equation (GEE) models among the total observed sample, adjusted for prescription volume to account for drug availability, and by routes of administration. Patterns of abuse were also examined among five levels of self-reported drug severity. Stimulant drug categories included amphetamine extended release (ER), amphetamine immediate release (IR), any amphetamine, mixed amphetamine salts, methylphenidate ER, methylphenidate IR, and any methylphenidate. **Results:** Among this sample of adults assessed for substance abuse problems, the prevalence of abuse by drug category was 0.33% for methylphenidate IR, 0.42% for methylphenidate ER, 0.92% for amphetamine ER, 1.08% for amphetamine IR, and 1.61% for amphetamine mixed salts. Accounting for drug availability, per 1,000,000 retail prescriptions dispensed, the prevalence of abuse was 0.0028 for amphetamine ER, 0.0033 for methylphenidate ER, 0.0041 for amphetamine mixed salts, 0.0048 for amphetamine IR, and 0.0051 for methylphenidate IR. The most common route of administration for amphetamine and methylphenidate products was oral (swallowed whole), followed by snorting and then injection. For amphetamine mixed salts, among abusers, 74.0% reported oral abuse, 38.3% snorting and 9.5% injection. When stratified by drug severity, patterns of increasing abuse prevalence by drug severity were seen for amphetamine and methylphenidate products within the total sample and when adjusted for prescription volume. Among the total sample, the prevalence of amphetamine mixed salt abuse was 3.80% for the highest severity group and 0.11% among the lowest severity group. Across all

stimulant products, as drug severity increased, oral use was less frequent, while alternative routes (e.g., injection, snorting) were more frequent. **Conclusion:** In adults assessed for substance abuse problems, the prevalence of prescription stimulant abuse ranges from 0.33% to 1.64% and is even greater among the highest levels of drug abuse severity. Reducing abuse by alternative routes of administration among stimulant users with high-severity drug issues may be effective in reducing overall abuse of stimulants in a substance-abusing population. This study was supported with funding by Grunenthal USA Inc.

No. 14

WITHDRAWN

No. 15

Case Report: New-Onset Psychosis Associated With Medical Marijuana Use in a 46-Year-Old Male

Poster Presenter: Matthew J. Sherman

SUMMARY:

Background: With changes in marijuana approval at the state level, there has been a rise in interest in the association between cannabis use and psychosis. Our case aims to describe a male in middle age with a history of chronic recreational cannabis use and no history of previous psychosis who developed prolonged psychotic symptoms after initiation of cannabis for medical purposes. This case should warn prescribers to exercise caution when administering medical cannabis. **Methods:** We present a case of psychosis in the context of recreational and medical marijuana use. His recreational use was daily for 35 years, while his medical use spanned two months. He was admitted to our ER and was referred to our outpatient clinic following psychiatric hospitalization. **Case:** Mr. R. was a 46-year-old Caucasian male with a complicated past medical history and no previous psychiatric history other than daily marijuana use for 35 years and alcohol use disorder in long remission. His neurologist recommended medical cannabis to address his chronic pain, so the patient began daily use of both vaporized cannabis and a sublingual cannabis tincture. Three weeks after starting medical marijuana, Mr. R. began to experience delusional ideas that his neighbors meant him harm. He was admitted medically multiple times, including one

admission during which Mr. R. was found to be in a delirious state. Despite resolution of his delirium and a thorough medical workup, Mr. R.'s psychotic symptoms persisted two months beyond his cessation from cannabis. It was only after two months of complete abstinence from cannabis and treatment with an antipsychotic medication that his symptoms resolved. **Discussion:** Several case studies have shown a linkage between medical marijuana use and psychotic symptoms. Most cases demonstrate males who first developed psychotic symptoms in their twenties, which is the typical age of onset for schizophrenia in males. Our case is unique in that it demonstrates a male in his 40s, which is an atypical age of onset of a primary psychotic illness. Also striking about our case is the duration of his psychotic symptoms, which lasted well beyond the typical period of acute intoxication. High THC levels and low CBD levels in today's marijuana likely played a role in his presentation. In fact, studies have shown evidence of a dose-response relationship for cannabis leading to psychosis. Also of significance is the prospect of high potency cannabis to result in a greater proportion of first-onset psychosis cases. **Conclusion:** This reported case is significant because of the association of his psychosis with medical marijuana use, his atypical age at onset, and his extended duration of psychosis after stopping cannabis. Given high THC and low CBD in today's strains of cannabis and the common use of recreational and medical marijuana together, this case should warn doctors to exercise caution when recommending medical cannabis.

No. 16

Therapeutic Benefits of Using Marijuana (Cannabis): A Review of Current and Past Scientific Literature

Poster Presenter: Neelambika Revadigar, M.D.

SUMMARY:

Background: Marijuana (cannabis) is the most widely used illegal drug in the world. Medical studies have shown that the active ingredient in marijuana, delta-9-tetrahydrocannabinol (THC), might provide some medical benefits in some patients. There is a significant controversy at present for potential therapeutic use of marijuana. The vast majority of

these studies are examining the medical benefits of individual cannabinoid chemicals derived from or related to those in the marijuana plant, not the plant itself. This poster reviews various past and current studies that explore effects of marijuana in a segmented population. **Methods:** We searched PubMed, Medline, EMBASE, PsycINFO, Web of Science, and Scopus. The search yielded 1,729 abstracts. We examined the listed conditions and excluded surgery-related pains as well as non-placebo-controlled trials. Of the 1,729 abstracts, we reviewed the full text of 63 articles and found that 33 met inclusion criteria. Criteria for inclusion were double blind studies within the past 10 years and ongoing current studies by NIDA. The keywords used were cannabis, marijuana, marihuana, hashish, cannabinoids, tetrahydrocannabinol, THC, randomized, randomized double-blind, simple blind, placebo-controlled, and human studies. **Results:** Cannabis and some cannabinoids are effective antiemetics and analgesics and reduce intraocular pressure. There is some evidence that it may reduce anxiety and improve sleep. Anticonvulsant activity requires clarification. Other properties identified by basic research await evaluation. Standard treatments for many symptom reliefs have shown improved well-being in selected neurological conditions (MS), AIDS and certain cancers. Cannabis is safe in overdose, but often produces unwanted effects, typically sedation, intoxication, clumsiness, dizziness, dry mouth, lowered blood pressure, or increased heart rate. **Conclusion:** A small number of medical conditions respond to treatment with cannabis or cannabinoids. With further study, it is likely that more disorders will be shown to benefit from careful use of marijuana-like drugs. As is true with any medicine, the potential benefits versus potential risks of such treatment must be considered. The discovery of specific receptors and natural ligands may lead to drug developments. Research for potential use of marijuana has anecdotal results. The use of medical marijuana for a wide range of disorders is inconsistent with the science supporting its effectiveness, highlighting the need for high-quality, nationally funded research. Randomized-controlled studies are necessary to determine the efficacy of this medication class. Cannabinoids should be studied similar to how other drugs are studied to determine their efficacy and,

when evidence is available, should be prescribed similarly to other drugs.

No. 17

The Relationship of Smartphone Addiction With Impulsivity Among Korean Smartphone Users: Vulnerability to Smartphone Addiction in Adolescents

Poster Presenter: Hyun-sic Jo

Lead Author: Hyun-sic Jo

Co-Authors: Dai-Jin Kim, Euihyeon Na

SUMMARY:

Background: The smartphone ownership rate has been growing steeply worldwide, and there are various adverse effects of smartphone overuse. Previous studies suggest that adolescents are vulnerable to addiction because they lack the ability to control impulsive behavior, but only a few studies have investigated psychiatric factors related to smartphone addiction among adolescents. This study compared smartphone addiction prevalence in adolescents and adults and investigated associations between impulsivity and smartphone addiction.

Methods: A total of 7,003 of participants answered the entire questionnaire. Participants completed self-report Korean questionnaires on demographic characteristics, level of smartphone addiction and trait impulsivity. They were divided into three groups based on age: an adolescent group (14–18 years old), an early adulthood group (19–25 years old) and an adulthood group (over 26 years old). Smartphone addiction was assessed with the Smartphone Addiction Proneness Scale, and impulsivity was assessed with Dickman's Impulsivity Inventory (DII).

Results: The level of smartphone addiction was significantly different between age groups, and the adolescent group had the highest percentage of smartphone addiction. Dysfunctional DII score was highest in the adolescent group, and there were significant difference between the adolescent group and the other two age groups. Moreover, the higher the level of smartphone addiction, the greater the dysfunctional impulsivity score. **Conclusion:** Results suggest that adolescents are vulnerable to smartphone addiction. It is similar to other substance addiction or behavioral addiction.

No. 18

The OPRD1 rs678849 Variant Moderates Outcome of Disulfiram Treatment for Opioid and Cocaine Dependency in Methadone-Maintained Patients

Poster Presenter: Patrick S. Thomas Jr., M.D., Ph.D.

SUMMARY:

Background: Recently, it was demonstrated that, in African Americans, d-opioid receptor (OPRD1) rs678849 genotype influences opioid use in those treated with methadone. We examined whether this variant moderated opioid use in our clinical cohort treated with methadone and disulfiram in a recently completed clinical trial. **Methods:** Opioid and cocaine co-dependent (*DSM-IV*) patients were stabilized for two weeks on methadone and subsequently randomized into groups treated for 12 weeks with methadone+placebo (N=40) or methadone+disulfiram (250mg per day, N=35). Subjects were genotyped for the OPRD1 (rs678849) variant. We evaluated the effect of the interaction of the OPRD1 variant and treatment on opioid or cocaine drug use using repeated measures analysis of co-variance (ANCOVA) corrected for population structure. **Results:** The number of opioid-positive urine samples in T-allele carrier patients fell from 44% to 17% on methadone+disulfiram ($F=4.3267$; $df=1$; $p=0.038807$), while those on methadone showed no treatment effect. We also found a significant treatment by genotype interaction effect on cocaine-positive urine samples. The number of cocaine-positive urine samples in CC genotyped patients dropped from 77% to 52% in the methadone+disulfiram group ($F=8.7086$; $df=1$; $p=0.003634$), but not methadone alone. T allele carrier patients treated on methadone alone had a larger decrease in cocaine-positive urine samples than CC genotype patients (76% to 71% vs. 86% to 84%; $F=6.8643$; $df=1$; $p=0.009475$), but did not have a significant drop in cocaine-positive urine samples when treated with methadone+disulfiram. **Conclusion:** These findings suggested that the product of the genotype at rs678849 locus may predict the response of patients to treatment for opioid and cocaine co-occurring dependence.

No. 19

Completing the Picture: The PAG and Alcohol Addiction

Poster Presenter: Shram D. Shukla, M.D.

Co-Author: David T. George, M.D.

SUMMARY:

Given recent advances in neuroimaging, it is now possible to link brain structure and function with behaviors characteristic of addiction and, more specifically, alcoholism. Such knowledge will afford insights into the mechanisms underlying the decision to use despite knowledge of the extreme consequences, substance use to alleviate emotional discomfort and increased craving during periods of inactivity. Previous work has focused almost exclusively on the amygdala's role in modulating addiction, particularly regarding the negative reinforcement model; however, it has become clear through numerous failed clinical interventions that our understanding of addiction is incomplete. We propose the examination of another structure, the periaqueductal grey (PAG), as there is reason to believe it plays a key part in addiction formation, maintenance and relapse. The PAG is a small grey matter structure implicated in both emotional and physical pain regulation. In alcoholics, it is likely that the PAG functions to dampen pain after alcohol use, thus rewarding the individual for using alcohol through negative reinforcement and priming the individual for addiction, as well as maintaining established addiction. In the absence of alcohol use, the lack of pain dampening, especially when the individual is at rest, may serve to promote relapse. While the relationship between the PAG and negative reinforcement may seem straightforward at first glance, it is complicated by the numerous mechanisms involved. The general functioning of the PAG to regulate pain, in conjunction with its highly connected nature, makes the PAG a prime candidate for the modulation of these mechanisms. Previous work has illuminated the involvement of two key networks in alcoholism (salience and default mode), both of which are connected to and influenced by the PAG. Functional magnetic resonance imaging (fMRI) of alcoholics shows functional connectivity between the salience regions (dmPFC and OFC) and PAG, suggesting a regular updating of pain perception and possibly accounting for addictive cravings in the absence of direct cueing. The PAG is also connected to the precuneus, through which it exerts influence on the default mode network. This influence may explain increased craving during times

of rest when the default mode network is more active than any other network. Finally, the ability for pro-stress hormones to bind to the PAG, combined with the PAG's connections with the amygdala, brings everything together to parallel negative reinforcement in addiction. The arguments for the PAG as an addiction modulator are quite compelling. Future research in the realm of addiction should focus on this missing piece of the picture.

No. 20

Cannabis Use and Cocaine Use Are Independent Predictors of Phencyclidine (PCP) Use in DC Urban Population With Lower Socioeconomic Status

Poster Presenter: Walid Aziz

SUMMARY:

Background: Cannabis use and cocaine use are independent predictors of phencyclidine (PCP) use in DC urban populations with lower socioeconomic status. Compared to local areas, PCP use is more prevalent in Washington, DC. There has been fluctuation in PCP use in DC areas over time; from the 1980s to 1990s, the use of PCP in the DC area decreased; however, unfortunately, the trend has been increasing. For example, Artigiani and Wish reported 10% of arrested adults in DC have active PCP urine toxicology screen, and almost all of PCP seizure in Baltimore/Maryland/Washington, DC, metropolitan areas occurred in greater Washington, DC. Howard University is a unique institution serving a mostly underserved African-American population. In this study, we sought to identify the correlates of PCP use in our patient population. **Methods:** In this study, we obtained data from a quality improvement project that psychiatry residents conduct continuously at Howard University Hospital. We included patients admitted to the inpatient psychiatric services from June 1, 2013, to June 30, 2015. Of the 1,241 patients, we included 132 patients in the study. We reviewed the charts and accessed their laboratory workup, including UDS results. Tobacco and synthetic cannabinoid use were self-reported by the patients recorded in medical records. We used chi-square to analyze the association between PCP use and other variables and used linear regression to correct for confounding factors. **Results:** A total of 132 patients were selected for the study; males accounted

for 40% (52 individuals); 85% were African American, while seven percent, three percent and four percent were Caucasian, Latino and others, respectively. Only 12% were employed, and UDS was positive for PCP in seven percent of the patients. The majority of the patients are from three zip codes (23 individuals from 20001, 21 from 20011 and 12 from 20011), which corresponds with the patient population the hospital primarily serves. Our analysis showed that PCP use was positively associated with cannabis and cocaine use ($p < 0.02$ and $p < 0.01$, respectively). In a regression model taking in account other substances and gender, the relationship between PCP use remained statistically significant ($p < 0.046$), cannabis and cocaine explaining the difference ($p < 0.001$ and $p < 0.01$). **Conclusion:** PCP intoxication poses a serious danger to patients and health care providers. The use of PCP has been unfortunately consistently higher in the DC area compared to the rest of the United States. Although cocaine remains the most commonly used substance in DC, PCP has historically continued to be a concern. In our patient population, about seven percent of patients were using PCP. Only cannabis and cocaine were positively associated with PCP use. In our previous study, cocaine predicts poor outcome for patients maintained in buprenorphine treatment. Our current results indicate that treatment strategies addressing substance use in DC should take into account co-occurring substance use patterns.

No. 21

Purple Hex: A Case of Psychosis Associated With Abuse of Over-the-Counter Propylhexedrine Nasal Inhalers With Literature Review

Poster Presenter: Abigail Rae Cohen

SUMMARY:

Propylhexedrine is a sympathomimetic drug structurally similar to methamphetamine. Currently, it's widely available over the counter for under \$10 as a Benzedrex inhaler. We report the case of a patient who developed psychosis after ingesting propylhexedrine in the form of the contents of nasal inhalers on a daily basis after learning about their stimulant effects on the Internet. To our knowledge, the last case of propylhexedrine-associated psychosis was published in 1972. This case highlights the potential for abuse of a widely available over the

counter medication and the associated risk of psychosis. Physicians will learn to recognize and screen for the abuse of this “legal speed.” We present a case of a patient with ADHD and substance use disorder who presented with psychosis after daily ingestion of over the counter propylhexedrine—a sympathomimetic nasal decongestant available over the counter—as well as review of the literature on psychiatric symptoms associated with propylhexedrine use. A PubMed search using the keywords “propylhexedrine,” “psychiatry” and “psychosis” was performed. This is a case of a 26-year-old man with past psychiatric history of ADHD and stimulant/K2/cannabis use disorders, who was admitted after he presented with psychosis and suicidal ideation in the context of daily propylhexedrine ingestion. The patient stated he had a prior diagnosis of ADHD treated with stimulant medication with good effect, but when he stopped seeing a psychiatrist, he looked to the Internet to provide possible alternative medications that could be obtained without seeing a physician. The patient read about propylhexedrine and began purchasing it from his local pharmacy, breaking open the inhalers and ingesting the contents. As his tolerance grew, he moved on to stealing the inhalers to maintain his supply. On admission, the patient was disorganized and extremely aggressive and was treated with olanzapine. Over the course of hospitalization, the patient showed improvement in psychosis and mood symptoms and was discharged to an inpatient rehab program. Bensedrine amphetamine medication was a popular drug of abuse, immortalized in Jack Kerouac’s *On the Road*. In 1949, amphetamine sulfate-based Bensedrine was replaced by propylhexedrine-containing Bensedrex inhalers after reports of psychosis, sudden death and widespread abuse associated with Bensedrine use. Bensedrex inhalers are widely available over the counter at pharmacies for \$5–8 and, at least in New York, are not subject to the same sales restrictions as pseudoephedrine. Structurally similar to methamphetamine, propylhexedrine has a salicylic cyclohexyl group in place of amphetamine’s aromatic phenyl group and provides local vasoconstriction with reportedly 1/12 the central nervous system stimulant effects of amphetamine.

No. 22

Predictors of Initiation of Nicotine, Alcohol, Cannabis, and Cocaine Use: Results of the National Epidemiologic Survey on Alcohol and Related Conditions

Poster Presenter: Ludwing Florez Salamanca

Co-Authors: Roberto Secades-Villa, Deborah Hasin, Shuai Wang, Carlos Blanco-Jerez, M.D., Ph.D.

SUMMARY:

Background: Identifying predictors of substance use initiation is essential for our understanding of the etiology and natural history of SUD and to develop empirically based preventive interventions to reduce initiation of substance use. To date, there is not a good understanding of the overlap in the risk factors for substance use and substance use disorders (SUD). In this research, we aim to cover this gap in knowledge by examining, for the first time, common and specific predictors of lifetime use of nicotine, alcohol and cannabis and cocaine use initiation in a national sample, using a retrospective survival analysis with time-dependent variables. **Methods:** Analyses were done on wave 1 participants of the National Epidemiological Survey of Alcohol and Related Conditions (NESARC) (N=43,093). Estimates of the cumulative probability of substance use initiation were obtained separately for nicotine, alcohol, cannabis, and cocaine. Discrete-time survival analyses with time-varying covariates were implemented to identify predictors of substance initiation. **Results:** The lifetime cumulative probabilities of substance initiation were 45.5% for nicotine, 82% for alcohol, 19.6% for cannabis, and 6.4% for cocaine. Among respondents with lifetime use of any substance, 50% had used it by age 20. Some predictors of initiation were substance-specific. Social anxiety disorder predicted initiation of cannabis use; cluster A and C personality disorders predicted initiation of nicotine and alcohol, respectively. Previous use of another substance, being male, having a cluster B personality disorder, family history of SUD, and being separated, divorced or widowed increased the risk of use of all the substances assessed. **Conclusion:** Although most risk factors of substance use initiation are common across substances, some psychopathology predictors are substance-specific. Some of them may also overlap with liability for SUD. This information may

help in the development of empirically based preventive interventions.

No. 23

Evidence-Based Psychopharmacology in an App: Extending the Harvard South Shore Psychopharmacology Algorithms Project

Poster Presenter: John Torous, M.D.

SUMMARY:

Background: For nearly 20 years, The Psychopharmacology Algorithm Project at Harvard South Shore has created evidence-based and peer-reviewed algorithms to guide rational use of psychiatric medications. These algorithms have been published in many journals, including the *Harvard Review of Psychiatry*, and are currently accessible in said journal articles as well as at our website.

However, to increase access and engagement with these algorithms, we developed a native smartphone application that allows users to interact with these algorithms in an engaging manner.

Methods: We converted five peer-reviewed algorithms into interactive diagrams featured on a native smartphone app. We found that showing the entire treatment algorithms could be massive to handle at the point-of-care. Instead, the app is designed in a way that physician users can choose the current conditions of a patient (e.g., SSRI failure or comorbidities such as substance abuse), then an optimized subset of algorithm is generated. We chose Apple operating system (iOS) platform and used XCODE8 as the software development tool. The app design is consistent with iOS Human Interface Guideline. We demonstrated the app with the Massachusetts Psychiatric Society and received feedback from that group. We now plan to offer the app to all residents at the Harvard South Shore Psychiatry Residency Program and will systemically collect their feedback in order to further improve the app. **Results:** Early feedback has been positive. We will have formal feedback and usability results by the time of the APA meeting and present those on the poster. We will also offer live demonstrations of the app during the poster session and help users access and download the app free of charge. Of note, the app is noncommercial and designed to be a free tool for all to access and use. **Discussion:** As psychiatry trainees turn more to digital resources

like apps for information, it is increasingly important that high-quality, evidence-based and peer-reviewed material is available in a mobile app format. By extending The Psychopharmacology Algorithm Project at Harvard South Shore into an app, we hope to be able to better share our evidence-based approved to psychopharmacology and inspire others to make useful mobile tools for psychiatric care.

No. 24

Can a Therapeutic Alliance Be Established With a Simulated Psychiatric Patient?

Poster Presenter: Nadia Daly, M.D.

Co-Author: Mona Gupta, M.D., Ph.D.

SUMMARY:

Background: In psychiatric education, simulated patients have been used at both the undergraduate and postgraduate levels to teach and evaluate clinical skills and knowledge. However, some authors argue that simulated patients in psychiatry may be less believable than real patients and that clinicians may have greater difficulty developing empathy for them. **Objective:** This project investigated the question of whether psychiatrists and simulated patients can establish a therapeutic alliance.

Methods: We interviewed 16 psychiatrists who each had conducted a diagnostic assessment of a patient they knew was simulated (by one of three actors) and the actors regarding their perception of the relational bond component of the therapeutic alliance. We used the Working Alliance Inventory to structure our qualitative analysis of the correlation between the perceived quality of the bond and the extent to which the psychiatrists were conscious of the simulation. **Results:** Our results suggest that a relational bond can be established between psychiatrists and simulated patients. However, some psychiatrists were sufficiently distracted by the simulation that it interfered with their ability to conduct their assessment. **Discussion:** While simulated patients may be useful for certain pedagogical tasks, learner awareness of simulation may interfere with clinical performance and potentially with learning and/or evaluation.

Conclusion: Our findings contribute to the debate about the appropriate uses of simulated patients in psychiatric education. Future research should investigate whether similar issues arise in

unannounced simulation in order to distinguish the effect of simulation itself from clinicians' awareness of it.

No. 25

"We and Not Them": Using Face-to-Face Relationship Building to Facilitate Interdepartmental Collaboration and Education

Poster Presenter: Samantha Latorre

Co-Authors: Lulu Zhao, Sarah Nagle-Yang, Jaina Amin, Mary Duarte

SUMMARY:

Learning to work collaboratively is an acquired skill that must begin at the learner's level, as mentalities about other professionals, and one's own professional identity, are often formed by the end of residency. We implemented a half-day collaborative care symposium to improve professional dynamics between the OB/GYN and psychiatry departments to further knowledge in women's mental health and to educate learners about interdepartmental collaboration. Pre- and post-intervention quizzes were given to assess knowledge of the other department (Can you name residents from the other department? What is the number for the other department's clinic? How would you communicate a curbside consult to the other department?) and general medical knowledge on women's mental health topics. Midwifery students and psychology candidates were also invited to participate. The symposium activities included a meet and greet with breakfast and an icebreaker activity, patient cases involving contraceptive choices in women with psychiatric illness, and an interactive didactic workshop on motivational interviewing. The patient cases were presented in a small group format in which each group had articles for pre-reading, read and discussed the case the day of symposium, summarized important learning points, and shared with the other small groups. Patient cases included eating disorders and weight gain on contraception, mood changes with contraception, state laws on guardianship and consent for sterilization, bipolar disorder in pregnancy, and postnatal adaptation syndrome when prescribed SSRIs. Two residents were previously selected, one from each department, to participate in an interdepartmental health care quality improvement project and

presented their project at the symposium. Post-symposium questionnaire results showed increased comfort among residents in their ability to contact and communicate with different departments, increased numbers of correct responses in the medical knowledge questionnaire, and very positive feedback on the motivational interviewing workshop. In moving forward, this interdepartmental symposium is planning to grow in topics including substance use, psychiatric medications during pregnancy, understanding types of contraception, and postpartum psychiatric illness. Resident learners are also requesting more interdepartmental symposia with neurology, internal medicine and emergency medicine. Our final goal is to help facilitate additional interdepartmental health care quality improvement projects every year.

No. 26

Can You See Me Now? Telepsychiatry and Intellectual/Developmental Disability

Poster Presenter: Nita Vasudev Bhatt, M.D., M.P.H.

SUMMARY:

Background: Telepsychiatry opportunities for individuals with autism spectrum disorder (ASD) and Down syndrome (DS) are becoming more readily available. Data are lacking regarding which interventions are better suited for varying degrees of either diagnosis. The purpose of this study is to identify differences, if they exist, in patients with ASD and DS when utilizing telepsychiatry.

Hypothesis: It is hypothesized that ASD individuals will have an increased frequency of introversion and that DS individuals will have a decreased frequency of introversion. **Methods:** Data are gathered from individuals with ASD and DS who receive care via telepsychiatry at an intellectual disabilities mental health clinic. Patients' preferences of web cam displays are compared. The subjects are screened for introversion characteristics and its impact on decision making. **Results:** A pre-test introversion/extroversion scale enables a post hoc assessment that will illustrate the impact of introversion on screen display preference for ASD and DS. **Discussion:** Telepsychiatry is an emerging medium for treatment of mental health disorders in individuals with intellectual disability. These patients have preexisting communication challenges, which

interfere with effective diagnosis and management of these individuals. Identifying barriers to effective communication can enhance the patient experience via telepsychiatry.

No. 27

Predicting 30-Day Psychiatric Readmission Using Electronic Medical Records

Poster Presenter: M. Mercedes Perez-Rodriguez, M.D., Ph.D.

Co-Authors: Roy Bachar, Shameer Khader, Armando Cuesta, Kipp W. Johnson, Li Li, Benjamin S.

Glicksberg, Jebakaran Jebakumar, Patricia Kovatch, Robert Freeman, Natalia Egorova, Sabina Lim, M.D., M.P.H., David L. Reich, Joel T. Dudley

SUMMARY:

Background: Over 14% of individuals hospitalized for psychiatric reasons worldwide are readmitted within 30 days of discharge. This high readmission rate represents a negative clinical outcome (i.e., a treatment failure) and causes significant disruption to the patients and their families. There is some evidence that certain interventions can reduce readmission rates. In order to implement interventions, it is important to be able to predict those individuals who are at highest risk for 30-day readmission. Our aim was to develop predictive models to identify those at risk for 30-day readmission using data from electronic medical records (EMR). **Methods:** Patients aged 18–65 hospitalized for psychiatric reasons (i.e., to an inpatient psychiatric unit) at Mount Sinai Hospital (MSH), a quaternary academic medical center in New York City, between January 1, 2013, and December 31, 2015 (N=3,165) were included in the study. We identified cases (psychiatric hospitalizations at MSH followed by a psychiatric readmission to MSH within 30 days of discharge) and controls (psychiatric hospitalizations without any psychiatric readmission within 30 days of discharge). We calculated the rate of 30-day psychiatric readmission. We compared sociodemographic and clinical variables across cases and controls using chi-square and Student's t-tests for categorical and continuous variables, respectively. We used logistic regression models to identify predictors of 30-day readmission. **Results:** There were 4,136 discharges from psychiatric inpatient units at MSH. Of those,

260 were readmitted to a psychiatric unit at MSH within 30 days of discharge (6.3%). Readmitted patients were more likely to be Black ($p<0.001$), to have Medicare insurance ($p=0.003$) and to suffer from developmental disorders ($p<0.001$). They had higher rates of medical comorbidities and longer index admissions ($p<0.005$). Variables significantly associated with 30-day readmission in the logistic regression model included age, race, comorbid valvular disease, hypertension, neurological disorders, lymphoma, and metastatic cancer, as well as a history of noncompliance. The c-statistic (equivalent to the area under the receiver operating characteristic curve), a standard measure of the predictive accuracy, was 0.663. Prescription data analyses of a subset of these patients (N=1,275 discharges, readmission rate=6.98%) also revealed that cardiovascular medication (for example, pravastatin, OR=13.10, $p<0.01$) exposure was significantly associated with hospital readmissions. **Conclusion:** Using EMR data, we developed a predictive model to identify patients at risk for 30-day psychiatric readmission with moderate accuracy (66%). Enhancing the cohort size and including additional variables could improve the hospital readmission prediction model. Identifying individual patients at high risk for psychiatric readmission is a critical step in any efforts to address this potentially avoidable negative outcome.

No. 28

Original Animation App: Lab Guide for Psychotropics

Poster Presenter: Matthew C. Lally, M.D.

SUMMARY:

Psychiatric medication prescribing is often a dynamic process involving a number of factors simultaneously. These factors include diagnosis, patient risk factors, family history, prior response to other medications, patient preferences, comorbidities, and others. Given that the medication options and recommendations are often made in real time with the patient present, accessible references are very helpful to the clinician. Accessible timely references currently include a number of handbooks and desktop websites that typically focus on doses, side effects, indications, and black box warning. However, as a practicing

psychiatrist, I could not find a unified reference for recommended labs for psychotropics, including which meds require levels, when to draw levels, how frequently, routine monitoring labs for adverse events, timeline of recommended labs, and clozapine lab parameters. Using Adobe Flash software, I designed my own mobile reference for psychotropic lab monitoring. Much of the effort went into design. I wanted the app to be animated so it would be quick and self-explanatory. I also designed it to be touchscreen sensitive. It is also designed so that no typing is needed; this makes it very quick. Any medication's labs are only two taps away. It is color-coded and organized by class. It took approximately one year to design, code and publish the app. It is available for free on any Android device and has been downloaded by users in over 30 countries, including third-world countries. Because it is animated, not text-based, only a very basic knowledge of the English language is necessary, and a significant portion of the app requires no English. The app has not been advertised. Currently, over 40% of people who view the app in the Google Play Store download to their device.

No. 29

Mobile Device Applications for Autism Spectrum Disorder: A Review of Current Evidence

Poster Presenter: Jung W. Kim, M.D.

Co-Authors: Ah Lahm Shin, M.D., Shih Yee-Marie Tan Gipson, M.D., Thuc-Quy Nguyen, M.D., John Torous, M.D.

SUMMARY:

Background: Autism spectrum disorder (ASD) is marked by core features, such as impaired social communication and restrictive and repetitive behaviors and interests. However, current treatment options are largely based on addressing comorbid psychiatric, neurological or medical conditions. Currently, there is a growing number of mobile applications, such as smartphone/tablet apps being developed and commercially available for patients with ASD and their families. Despite the growing availability and use, patients, clinicians and families often do not have evidence-based information to guide them through the numerous choices. There are nearly 700 mobile device apps according to the "Autism Apps" section on the Autism Speaks

website, as of December 2016. We aim to review currently available mobile device-based applications and discuss available evidence to help guide clinicians, patients and families. **Methods:** We reviewed evidence for commercially available mobile apps listed on "Autism Apps." We reviewed apps based on four criteria, including safety/privacy, evidence/efficacy, usability, and data interoperability, per the APA app review framework on psychiatry.org. **Results:** Preliminary results suggest that only a small fraction of currently available mobile device applications for ASD have any evidence. Much of that evidence is indirect and/or weak, given limitations in size, study design and conflict of interest. We also provide our reviews of those apps based on four criteria, including safety/privacy, evidence/efficacy, usability, and data interoperability, per the APA app review framework on psychiatry.org. **Conclusion:** Research studies are not keeping up with the rapid development of technology, namely mobile applications. Our preliminary results demonstrate that the scarcity and weakness of currently available evidence for those applications call for more studies and structured guidelines or tools to guide them.

No. 30

"Do I Have to Do This Every Time?" Implementing a PTSD Screening Instrument in an FQHC That Serves People Experiencing Homelessness

Poster Presenter: Aislinn Bird, M.D., M.P.H.

Co-Authors: Melanie Thomas, M.D., Jennie Xu, B.S., Jeffrey Seal, M.D., James Dilley, M.D., Christina Mangurian, M.D., M.S.

SUMMARY:

Background: In 2015, the U.S. Health Resources and Services Administration (HRSA) required that federally qualified health centers (FQHCs) screen for depression in all patients over the age of 12. However, screening for depression without considering other diagnoses may not be sufficient in certain populations. For example, the prevalence of PTSD in people experiencing homelessness is known to be high. Unfortunately, there is little data regarding screening for PTSD in vulnerable populations. Screening instruments may identify those who otherwise may not be diagnosed with a psychiatric condition, especially in a primary care

clinic, and provide data that may help change patient behavior and improve quality of care. However, patients and providers often find screening tools unhelpful, requiring time and resources that potentially interfere with patient engagement. Providers are often unsure of how to utilize the screening data to inform treatment for the individual patient and their patient panel. Thus, it is critical that we investigate best practices regarding screening instruments, especially in underserved populations. **Objective:** We will examine the feasibility and acceptability of using a validated screening tool for PTSD in a busy, urban primary care FQHC that predominately serves African-American adults experiencing homelessness in Oakland, California. **Methods:** Through PDSA (Plan, Do, Study, Act) cycles, focus groups and semi-structured interviews, we will characterize the experience of the screening process for patients, providers and frontline staff. We have implemented the PTSD Checklist-Civilian Version (PCL-C) into the clinic workflow. Study measures will include number of patients screened, prevalence of positive scores on the PCL-C, percentage referred to behavioral health services and/or started on medication, and number of patients whose scores improved, along with qualitative data from patients, providers and frontline staff before and after the implementation of the screening tool. **Results:** We have started the implementation of the screening tools for new and follow-up patients in our clinic that currently serves 450 people. Preliminary results indicate that, overall, the screening tool is feasible, yet acceptability is mixed. All data collection and analysis will be completed in time for presentation of final results at the APA Annual Meeting. **Conclusion:** The successful implementation of mental health screening tools in safety net settings such as FQHCs necessitates the integration of patient, provider and frontline staff perspectives. Our study will extend the growing evidence base for using screening tools in collaborative care practice models serving vulnerable populations.

No. 31

“Doctor, I Am a Smoker. Can We Talk?” Prompting Providers to Engage in a Conversation About Smoking Cessation Among Patients With Severe Mental Illness

Poster Presenter: Farah Zaidi

Co-Authors: Hung-Ming Chu, John Herbert, Sneha Modi, Melanie Thomas, M.D., Christina Mangurian, M.D., M.S., James Dilley, M.D.

SUMMARY:

Background: Cigarette smoking rates among people with severe mental illness (SMI) are approximately double when compared to the general population. Such high incidence of smoking may be an important contributor to the 20-year decreased life expectancy among those with SMI. The simple physicians’ advice to “quit smoking” can be effective, but these opportunities are often missed due to barriers such as time constraints, low provider confidence in addressing smoking cessation and misperceptions regarding patient motivation to quit. Our specialty mental health services clinic in San Mateo, California, serves a diverse patient population with SMI. Given the prevalence and clinical significance of smoking among individuals with SMI, we have designed a quality improvement project to develop, implement and evaluate a patient-initiated smoking screening and treatment referral tool. **Objective:** Assess feasibility and acceptability of implementing a novel smoking cessation screening and referral tool and explore psychiatrists’ experience of using this novel tool and whether it had impact on their smoking cessation practice with their patients.

Methods: This is a prospective cohort study designed to evaluate a novel intervention to improve smoking cessation in a specialty mental health clinic. For a three-month period, all English- and Spanish-speaking patients will be given a simple questionnaire upon registration for their appointments. The questionnaire asks 1) Do you smoke cigarettes? (Yes, No) and 2) Are you interested in quitting? (Yes, No, Maybe). Patients will be asked to discuss the questionnaire with their psychiatrists. Psychiatrists in the clinic will be provided with the tool to facilitate a conversation about smoking with their patients and to choose which intervention they offered: 1) educational handout; 2) counseling; 3) medications; 4) referral to total wellness’s smoking cessation group; and 5) none. **Results:** The sample size for our study will be approximately 800 patients. Pre-intervention data gathered from our electronic health record suggests that only 10% of clinic patients are smokers. We

hypothesize that this novel patient-initiated tool will reveal higher rates that more appropriately reflect the actual smoking incidence and will also prompt providers to engage in conversation with their patients and to choose one of the interventions noted above. Data collection and analysis will be completed in time for presentation of final results.

Conclusion: The descriptive data gathered from this project will provide a more accurate count of the population of patients who smoke cigarettes and their interest in quitting. In addition, providers' experiences will be used to improve our clinic's approach to smoking cessation. The challenges and successes of our implementation study can inform other systems attempting to address this important issue.

No. 32

Destigmatizing Mental Illness Through Film: A Memphis Community Project

Poster Presenter: Jacob Marion Poole

SUMMARY:

Psychiatric disease is a common subject in film, taking on many forms: deranged criminal, infantile hero, unreliable narrator. But the stories told can sometimes connect with audiences more deeply, revealing to us a new perspective on another life and, more often, on our own. Although the power of film as a medium to both stigmatize and destigmatize is well documented, few examples exist of film's effect on a community level. If movies move the soul, for better or for worse, how can this feature of film be used to help patients? Our team hosted two community film screenings: 2009's *The Soloist* and 2002's *The Hours*, chosen for their thoughtful portrayal of key mental health challenges in Memphis: schizophrenia, bipolar disorder and homelessness. The films were shown at the Benjamin L. Hooks Central Library in Midtown Memphis and advertised on social media and posters throughout the city. Each film was preceded by an interactive discussion with Dr. Valerie Arnold (West TN Branch of the APA), Dr. Veronica Murphy (UTHSC) and Veronique Black (NAMI Memphis). Discussion included information about the making of and story behind each film, along with mention of its critical acclaim and an explanation of the featured disease from a panelist with personal experience. All

audience members were adults, many of whom had personal or familial experience with mental illness. Pre-screening and immediate post-screening questionnaires featuring a series of 15 to 21 statements were distributed to all participants. Audience members were contacted by email after three months with a follow-up questionnaire. Statements from the questionnaire were divided into three categories: establishing, positive perception and negative perception. Five responses were available for each statement: strongly disagree, disagree, neutral, agree, and strongly agree. Audiences were oriented to the meaning of these statements, as well as the use, importance and purpose of the questionnaire. Advertisement, venue, hosting, and follow-up were all carried out by volunteers at zero cost. Both an immediate and sustainable positive impact on public perspective can be observed in both film groups across all three statement categories. This includes a negative post-film response to negative perception statements. Participant feedback that the film series "was helpful," "should be repeated in the future," and encouraged them to "read about schizophrenia or depression" was also promising. Based on these findings, and with an understanding of the study's limitations, the UTHSC psychiatry department will continue to support and improve upon an annual film series in the hope of forging a more amicable environment for mental health patients and inspiring similar work in cities around the globe.

No. 33

Continuing Antipsychotic Medications for Newly Incarcerated Patients

Poster Presenter: Kory B. Combs

SUMMARY:

Background: The large numbers of newly incarcerated individuals with mental illness present a complex challenge for providers in any county jail system. Many have serious mental illness and many are dual diagnosed with a co-occurring substance use disorder that can obfuscate their diagnoses, especially if they are intoxicated when received into jail. As individuals are received into the San Francisco County Jail, they undergo multiple screenings for medical and psychiatric illnesses to ensure their safety and to develop care plans. Non-psychotropic

medications for chronic conditions are generally continued immediately, but this is not the current practice for psychiatric medications. Reasons for this delay include a desire to assess mental status after a period of “detox” (for a clearer diagnostic picture) and the reality that 65% of those incarcerated are released within seven days or sooner, often before a psychiatrist can perform a full evaluation. However, there is evidence that abruptly discontinuing psychotropic medication can have a deleterious effect, both acutely and chronically, such as studies that show increased rates of relapse for individuals with schizophrenia who are abruptly discontinued from antipsychotics. **Objective:** The purpose of our quality improvement study is to develop, implement and evaluate an algorithm that jail health staff can use during intake screenings to continue verified psychiatric medications (focusing on antipsychotic medications) for newly incarcerated individuals. **Methods:** This is a pre-post comparison study to gather pilot data on the feasibility, acceptability and effectiveness following the implementation of a new protocol. The primary outcome measure is continuation of antipsychotic medications for newly incarcerated individuals upon entry into our county jail system. Secondary outcomes to be measured include patient safety and well-being measures such as safety cell placement, initiation of psychiatric holds and number of transfers for psychiatric hospitalization. We will use descriptive statistics to examine the cross-sectional data from this cohort as well as chi-square tests to compare the pre- and post-intervention groups on outcome measures as above. **Results:** Approximately 1,200 individuals are received into San Francisco County Jail every month, and 750 of these are referred to behavioral health services. We hypothesize that the implementation of this tool will be feasible and acceptable and will lead to better outcomes in terms of safety cell placement, initiation of psychiatric holds and numbers of transfers for psychiatric hospitalization. This study is currently underway and will be completed with data collection and analysis for presentation of final results in May 2017. **Conclusion:** The development of an evidence-based algorithm as a guide for continuing psychotropic medications for newly incarcerated individuals is an important care improvement tool for a vulnerable and marginalized population.

No. 34

Impact of a Psychosocial Program on the Clinical Outcomes of Severe and Chronic Mental Illness

Poster Presenter: Obiora E. Onwuameze, M.D., Ph.D.

SUMMARY:

Objective: This study evaluated the impact of a psychosocial program on a cohort of patients with severe and chronic mental illness. It also examined potential modifiable predictors of hospitalization. **Methods:** The sample was comprised of 94 patients with severe and chronic mental illness followed in the community support network (CSN), a psychosocial program. All participants were assessed twice: first during their initial assessment before admission into the CSN program and second after admission into CSN (the most recent visit to the psychiatrist). Data were analyzed in SAS using T-tests before and after for hospitalization, accommodation and employment, while the logistic regression procedure was used to analyze the relationship between potential modifiable clinical independent variables and hospitalization. **Results:** The results showed that, after admission into the program, hospitalization was significantly reduced, while the proportion of participants employed significantly increased. Presence of psychotic symptoms significantly increased the likelihood for hospitalization, while use of support group, antidepressants and mood stabilizers significantly decreased the likelihood for hospitalizations. However, only use of support group and mood stabilizers remained significant in multiple regression controlling for confounding variables. **Conclusion:** Our findings suggest that the CSN reduced hospitalization as well as increased employment. The overall significant reduction in psychiatric symptoms perhaps explains this finding. **Keywords:** Community Support, Schizophrenia, Hospitalization, Schizoaffective Disorder, Diagnosis, Employment

No. 35

Exploring the Practice of Chronic Sedative-Hypnotic Prescribing in a Community Mental Health Clinic

Poster Presenter: Regan M. Carey

Co-Authors: Melanie Thomas, M.D., Sneha Modi, Ana Gonzalez, James Dilley, M.D., Christina Mangurian, M.D., M.S.

SUMMARY:

Background: Experts generally advise against long-term sedative-hypnotic use due to concerns of abuse and dependence, memory impairment, decreased cognitive functioning, respiratory depression, rebound insomnia, falls, and withdrawal symptoms. Such concerns about sedative-hypnotics have led several medical organizations to develop guidelines that discourage their use in favor of alternative treatments. San Francisco's county behavioral health system recently implemented a multimodal intervention designed to decrease inappropriate chronic sedative-hypnotic prescriptions. This approach resulted in a decrease in the rate of chronic sedative-hypnotic prescriptions from 1,764 (15.3%) before intervention to 1,018 (9.8%) at 24 months after intervention. There were no significant differences in the rate of chronic sedative-hypnotic prescriptions by patients' gender, race or diagnoses. A clearer understanding of these results can be used to inform future practices and recommendations both for our system and for others interested in replicating our approach. **Objective:** Identify factors associated with those patients who remain on chronic sedative-hypnotic prescriptions in one county clinic following a systemic effort to reduce this practice and inform best practices related to the prescribing of sedative-hypnotics in a county-based system of specialty mental health care serving a low-income, diverse patient population with severe mental illness **Methods:** We performed a retrospective cohort study involving all patients seen at Mission Mental Health, a specialty mental clinic in San Francisco, who were prescribed chronic (60/90 days) sedative-hypnotic medications during the first three quarters of 2016. Data will be abstracted from the electronic medical record by a trained research assistant using a standardized form. We will collect basic demographic information as well as the presence of specific symptoms, historical factors and secondary diagnoses including past suicide attempts, auditory hallucinations, paranoid ideations, diagnosis of personality disorder, sleep disturbance, and panic attacks. We will use descriptive statistics to examine cross-sectional data and linear regression models to examine the relationship between mental health symptoms and diagnosis with ongoing sedative hypnotic use. **Results:** Preliminary results

indicate that 71 patients at Mission Mental Health meet criteria for inclusion. Data abstraction is underway, and we expect completion of the study and analyses in time for presentation of final results at the APA Annual Meeting. **Conclusion:** Findings from this project will further the efforts in our county mental health care system toward proper usage of sedative-hypnotics and more generally to inform the challenging process of changing system-wide prescribing practices, especially in systems that serve our most vulnerable and underserved patients with severe mental illness.

No. 36**Developing a Curriculum in Child Trauma for Psychiatry Residents**

Poster Presenter: Geetanjali Sahu, M.B.B.S.

Co-Authors: Bibiana Mary Susaimanickam, George Alvarado, Ingrid Walker-Descartes, Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Objective: Gain an understanding of the current knowledge of residents in the department of psychiatry about child trauma recognition, treatment and referral process; identify resident views of the perceived difficult aspects about child trauma, as a means to identify the core competency deficiencies in child trauma; and create a curriculum based on the information obtained to improve resident education and work toward a process of building a trauma-informed systems of care.

Methods: The project team created a pre-curriculum survey to detect current knowledge, patient care and interpersonal communication skills; the survey was given to all residents, and after the surveys were collected and analyzed, based on the survey information, a curriculum was developed for the residents and residents were educated. This was followed by a post-curriculum survey to see any difference in their understanding or comfort level. The surveys were anonymous, so each resident had a different pre- and post-survey ID. **Results:** Statistically, the two sets of data obtained from the pre- and post-curriculum surveys were compared and showed high internal consistency and alpha coefficient (0.83). The T-test showed higher confidence levels for two questions in the survey, which were about identifying barriers in

communication during reporting (0.05) and how often child abuse is screened in a patient (0.03). The total confidence level was 0.27. There were two aspects of child abuse screening and reporting that, during the survey, the residents showed becoming more comfortable after the curriculum, which were 1) reporting where the cross-tabulation score decreased from 32% to 20% and 2) management of patient families, which decreased from 50% to 35%. Overall the residents appear to be less uncomfortable about reporting possible child trauma as well as managing the family. PGY level did not appear to show any relationship with any change in comfort level in our study. **Conclusion:** Based on the results, we found a lacuna of knowledge. This was a small pilot of two classes given to the residents on child trauma; it gave us an idea of what trauma-specific core competencies to teach residents, and it also gave us the opportunity to discuss future directions in building a trauma-informed system as evidenced by the practice gap that exists, the interest of residents on this topic and the changes it brought about in their attitudes. This curriculum helped us in improving the residency training education and will be continued to help us move forward in our steps to building trauma-informed systems of care.

No. 37

Comparison of Interpersonal Sensitivity Properties Between Depressive Patients With and Without Bipolarity

Poster Presenter: Jehyun Sohn

Co-Authors: Kangyoon Lee, Taeuk Kang

SUMMARY:

Background: Patients with depressive disorder have hypersensitivity to interpersonal rejection, especially with atypical depression. However, there is lack of evidence for the differences in interpersonal sensitivity profiles between depressive patients with and without bipolarity. **Methods:** We recruited 110 patients who have been experiencing major depressive disorder, dysthymic disorder and depressive disorder not otherwise specified. Bipolarity was evaluated by using the Mood Disorder Questionnaire (MDQ), which screens for a lifetime history of a manic or hypomanic syndrome with 13 yes/no items. Interpersonal sensitivity was measure

by using the Interpersonal Sensitivity Measure (IPSM), which have five subscales: interpersonal awareness, need for approval, separation anxiety, timidity, and fragile inner-self. The comparison between depressive disorder with and without bipolarity was established from analysis of covariance (ANCOVA) using SPSS version 18.0 to adjust the influence of age. **Results:** Patients with depressive disorder who screened positive on the MDQ showed higher IPSM (IPSM total, $p=0.001$; interpersonal awareness, $p=0.001$; need for approval, $p=0.001$; separation anxiety, $p<0.001$; fragile inner-self, $p=0.008$) than those with negative MDQ scores. Similar results were obtained after adjustment for age (IPSM total, $p=0.018$; interpersonal awareness, $p=0.011$; need for approval, $p=0.005$; separation anxiety, $p=0.009$). **Conclusion:** These results suggest that bipolarity may be associated with different interpersonal sensitivity profiles in depressive patients. Consideration of bipolarity measured by the MDQ may be necessary for the treatment of depressive patients with interpersonal sensitivity. A large-scale study would be needed to confirm the results. **Keywords:** Depressive Disorder, Interpersonal Sensitivity, Bipolarity

No. 38

Serum Lipid Levels in Depression and Suicidality: The Korea National Health and Nutrition Examination Survey (KNHANES) 2014

Poster Presenter: Hyunsic Jo

Lead Author: Jihoon Oh

Co-Authors: So-Yeon Kim, Tae-Suk Kim

SUMMARY:

Background: Serum lipid levels have been reported to be associated with depression and suicidality, but the exact relationships between these factors remain controversial. The aim of this study was to investigate the association of lipid levels with depression and suicidality in a large population. **Methods:** We examined the association between serum lipid levels and the degree of depression measured with the Patient Health Questionnaire-9 (PHQ-9) in a national sample of the Korean population. Data from 2,055 men and 2,894 women who participated in the Sixth Korea National Health and Nutrition Examination Survey (KNHANES VI)

were used. Serum concentrations of high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), triglycerides, and total cholesterol were dichotomized, and complex samples logistic regression was employed in the analysis. **Results:** There was a significant association between high HDL-C levels (40mg/dL) and depression in adult men and between high triglyceride levels (150mg/dL) and depression in adult women. Furthermore, in middle-aged adults (45 to 64 years old), high triglyceride levels were related to increased levels of depression and suicidality (depression, OR=2.20, 95% CI [1.26, 3.85]; suicidality, OR=3.66, 95% CI [1.41, 9.51]).

Conclusion: Our findings support a significant association between depression and high HDL-C and triglyceride levels in a large population. Triglyceride levels were highly associated with suicidality in younger and middle-aged adults, but not in elderly adults. Further assessments could delineate the relationship of serum lipid levels with depression and suicidality in other ethnic groups. The authors wish to acknowledge the financial support of the Catholic Medical Center Research Foundation made in the program year of 2014.

No. 39

Antidepressant Augmentation and Co-Initiation Treatment in Acute Major Depressive Disorder: A Systematic Review, Meta-Regression and Meta-Analysis

Poster Presenter: Christoph U. Correll, M.D.

Lead Author: Britta Galling

Co-Authors: Dinesh Sangroula, M.D., Amat Calsina Ferrer

SUMMARY:

Background: Management options for patients with major depressive disorder (MDD) remain suboptimal, with response rates to initial antidepressant (AD) monotherapy of 50 to 75%, and remission rates of only around 30%.

Recommendations after nonresponse include AD dose optimization, switch to another AD, switch to or augmentation with other psychotropic agents, or the augmentation with a second AD. AD+AD co-treatment is frequent in clinical practice, mostly being employed as augmentation, rather than co-initiation from the beginning of treatment. However,

evidence for the efficacy and tolerability of both co-treatment strategies is slim. In view of the prevalence of AD+AD co-treatment and the paucity of evidence in its support, we conducted a comprehensive meta-analysis of the efficacy and safety of AD+AD augmentation and AD+AD co-initiation compared to AD monotherapy in patients with MDD. **Methods:** We performed a systematic PubMed/Medline/PsycINFO/CJN/WangFan/CBM search from database inception through January 26, 2016, for randomized trials comparing AD+AD co-treatment to AD monotherapy in MDD. Random effects meta-analyses identified coprimary outcomes (overall symptom reduction, study-defined response) and secondary outcomes (all-cause and specific-cause discontinuation, partial response, remission, adverse effects). Separate analyses for augmentation and co-initiation studies and for double-blind (DB) plus intent-to-treat (ITT) data were performed. **Results:** Meta-analyzing 45 studies (N [comparisons [C]]=58, N=4,238, 6.7±1.9 weeks), no difference emerged for AD augmentation (N/C=8, N=1,216, 5.9±2.9 weeks) compared to monotherapy regarding overall symptom reduction (N/C=7, N=822, SMD=-0.23, 95% CI [-0.60, 0.14], p=0.224) or response (N/C=6, N=1033, RR=1.08, 95% CI [0.87, 1.33], p=0.499). AD+AD co-initiation (N=37/C=50, N=3,022, 6.9±1.6 weeks) was superior for symptom reduction (C=46, N=2713, SMD=-0.93, 95% CI [-1.20, -0.66], p<0.001) and response (C=33, N=1,996, RR=1.29, 95% CI [1.22, 1.37], p<0.001). However, while overall effect sizes were large, they were only small in DB/ITT studies for symptom reduction (C=16, N=715, SMD=-0.304, 95% CI [-0.566, -0.042], p=0.023) and response (C=11, N=430, RR=1.22, 95% CI 1.09, 1.38], p=0.001]. No differences emerged regarding all-cause, inefficacy-related or adverse effect (AE)-related discontinuation in both strategies. The AE burden was higher in three out of nine outcomes (33%) reported in two or more augmentation studies (one AE: p<0.001; dry mouth: p=0.006, 7% weight gain: p=0.010), and in one of 21 outcomes (5%) reported in two or more co-initiation studies (hypersomnia: p=0.041). In DB/ITT co-initiation studies, tremor (p=0.047) and sweating (p=0.006) emerged more often with co-initiation. **Conclusion:** In short-term studies, AD augmentation after partial or full nonresponse lacks evidences for superior efficacy, whereas AD+AD co-initiation

seems to potentially increase or speed up depressive symptom reduction and response.

No. 40

Metabolic Biomarkers in Ketamine Anesthesia for Improvement of Depression During Electroconvulsive Therapy (ECT)

Poster Presenter: Anna Borisovskaya, M.D.

Lead Author: Charles W. Carspecken, M.D., M.B.A., M.Sc.

Co-Authors: Irene Rozet, M.D., Thomas J. Campbell, B.S., Daniel Raftery, Ph.D., Shu-Tsui Lan, P.A.-C., G.A. Nagana Gowda, Ph.D., Jonathan Buchholz, M.D.

SUMMARY:

Background: Although ketamine anesthesia during electroconvulsive therapy (ECT) may potentiate the antidepressant effect of ECT due to ketamine's antidepressant properties, prior studies using ketamine in ECT have been inconclusive. To date, there are no studies available evaluating an effect of ECT and ketamine on biomarkers relevant to depression outcomes. The aim of this study is to rigorously evaluate ketamine's antidepressive effect and safety profile during an index course of ECT with assessment of metabolic serum biomarkers pertaining to the primary depression score endpoints; in this poster, we report preliminary data.

Methods: After IRB approval, patients with major depression or bipolar disorder were randomized to receive either methohexital (N=9) or ketamine (N=11) (1.0mg/kg) for general anesthesia for every index course seizure utilizing right cerebral hemispheric stimulus. All subjects were blinded to study intervention. Patient Health Questionnaire-9 (PHQ-9) and Hamilton Rating Scale for Depression (HAM-D) scores were measured before and after completion of index course. Two serum samples were collected from every patient at the same time points to measure serum concentration of 56 metabolites using 1H-NMR spectroscopy. Unpaired two-tailed Student t-test and linear seemingly unrelated regression modeling in Stata v14 were used for analysis. **Results:** Of the 20 subjects enrolled, there were no differences in patients' demographics (45±11 years old, 90% male), baseline PHQ-9, HAM-D, symptom duration, or psychiatric/medical comorbidities between trial arms. Median number of seizures in the ketamine

(6±3) and methohexital (5.5±2) arms were similar. Both PHQ-9 and HAM-D significantly decreased in both groups at the end of the index course, but 72 hours later, there was a significant decrease in PHQ-9 scores in the ketamine over the methohexital arm (3.8±1.9 vs. 10.2±5.8, p=0.02). Improvement of HAM-D scores in the ketamine arm were more substantial than the methohexital arm, measured before and after ECT (17±6 vs. 10±6, p=0.03). Lower serum tyrosine levels were significantly correlated with worse baseline PHQ-9 score prior to initiation of ECT (p=0.039). The percentage change in PHQ-9 depression score from baseline after index course was significantly correlated with tryptophan and tyrosine fold changes in both ketamine and methohexital arms (p=0.02, p=0.01); however, serine, glycine and glutamine metabolites were significantly correlated with PHQ-9 score changes only in the ketamine arm (p=0.001, 0.003, 0.003). **Conclusion:** This is the first study to utilize a metabolomics approach to identify biologically relevant amino acid biomarkers in ketamine ECT. Preliminary data from this study suggest ketamine might be beneficial for improvement of depression following ECT. Forthcoming results from this trial will include long-term depression outcomes at one year.

No. 41

Variation in Allostatic Load Biomarker Association With Depression Among Black and White Women and Men

Poster Presenter: Ganga Bey, M.P.H.

SUMMARY:

Background: Allostatic load (AL), a composite of neuroendocrine, cardiovascular, immune, and metabolic biomarkers measuring the physiological stress burden, is known to be associated with depression. As growing attention is given to identifying which components of AL specifically predict depression, it is important to evaluate whether the relationships of individual biomarkers with depression vary with respect to race and sex. **Objective:** Identify which specific AL components predict depression in Black and White women and men. **Methods:** Using data from the National Health and Nutrition Examination Survey (NHANES) 2005–2010, we estimated risk of depression based on AL profiles in a nationally representative sample of U.S.

Black and White adults aged 18–64 (N=6431). We assessed nine biomarkers (systolic and diastolic blood pressures, pulse rate, BMI, total and HDL cholesterol, glycosylated hemoglobin, serum albumin, and C-reactive protein) as comprising AL. Depression was assessed using the PHQ-9; scores of 10 or higher indicate clinical depression. Logistic regression models estimated odds of elevated depressive symptoms as a function of individual AL biomarkers for each race/sex group, adjusting for age and socioeconomic status. **Results:** High-risk levels of C-reactive protein were significantly associated with increased risk of depression among White men (1.8, 95% CI [1.1, 2.8]) and women (1.7, 95% CI [1.1, 2.5]) but not black men (0.88, 95% CI [0.53, 1.5]) or women (0.79, 95% CI [0.56, 1.1]). Among black men, high-risk pulse rate (1.7, 95% CI [1.1, 2.7]) and serum albumin levels (1.7, 95% CI [1.0, 2.9]) predicted depression. None of the included AL biomarkers were associated with depression in Black women. **Conclusion:** The association between individual AL biomarkers and depression varies by race and sex, suggesting psychosocial influences on the interaction between immunological and neurological processes that lead to psychopathology. Identifying sociodemographic differences in the pathways from chronic stress to depression pathogenesis can both inform approaches to individualized treatment and elucidate mechanisms for the effects of social inequity on health.

No. 42

Demographic Associations With Seasonal Changes in Mood in the Old Order Amish

Poster Presenter: Hira Mohyuddin

Co-Authors: Uttam Raheja, Sonia Y. Postolache, Naila N. Karim, M.D., Amar R. Sleemi, M.D., Gagan V. Nijjar, M.D., Mary A. Pavlovich, M.P.H., Theresa M. Roomet, R.N., B.S.N., Patrick E. Donnelly, R.D.M.S., R.V.T., Nancy M. Weitzel, L.P.N., Melanie Daue, B.S., Mary H. Morrissey, R.N., B.S.N., Teodor T. Postolache, M.D.

SUMMARY:

Background: Previous studies have related seasonal changes in mood and behavior, termed “seasonality,” to annual photoperiodic fluctuations. We have previously found that the Old Order Amish of Lancaster, PA, who are prohibited by self-imposed

religious norms to use network electric light at home, report a significant seasonal variation in mood. Contrary to our expectations, considering that poorer indoor lighting would result in a lesser buffering of photoperiodic influences, the Amish perceived these seasonal changes as less ample or problematic in comparison to previous studies in non-Amish samples at similar latitude. Furthermore, we reported in the Old Order Amish a negative association between a morning circadian preference and seasonality, as previously reported in other studies. Although morningness and eveningness are considered, at least in part, expressions of genetic, or more broadly, heritable factors, a plausible alternative interpretation is that in predominantly agrarian populations, such as the Old Order Amish, occupational demands determine seasonality in sleep, mood and behavior. As there are major differences in occupational demands between genders, we examined the associations between gender and age with seasonality of mood in the Old Order Amish. **Methods:** Responses given on the Seasonal Pattern Assessment Questionnaires (SPAQ) by 1,305 Amish participants (736 women, 569 men) with an average age of 55.67 years (SD=14.761) were analyzed for association with age group determined based on median age of the sample (median age=57; old \geq 57, young \leq 56), gender and their interactions. The SPAQ-derived variables included the Global Seasonality Score (GSS) and “total” winter SAD (either syndromal or subsyndromal SAD). Statistical methods included ANOVAs with post hoc t-test, chi-squares, and linear and logistic regressions. **Results:** We found that gender ($p=0.036$), age group ($p=0.015$), and interaction between gender and age group ($p=0.013$) were significantly associated with “total” winter SAD. The younger individuals displayed more than twice the rate of total winter SAD than the older population (age 57 or older). Women had a higher frequency of total winter SAD (almost three times higher) than men ($p=0.041$). The ANOVA results showed that GSS was significantly related to age group ($p=0.000$), but not to gender. **Conclusion:** The association between demographic factors and seasonal changes in mood and behavior in the Amish are similar to those previously reported in other populations at similar latitudes. Additional research is necessary to dissect heritable versus non-heritable, modifiable versus non-modifiable and

biological versus psychosocial factors contributing to our gender and age group differences. This study was funded by K18MH093940 from the National Institutes of Health (TTP).

No. 43

Biomarkers and Clinical Predictors of Antidepressant Response to Ketamine in Unipolar and Bipolar Treatment-Resistant Depression

Poster Presenter: Lorena Catarina Del Sant

Co-Authors: Eduardo Magalhães, Ana Cecília Lucchese, Hamer N. P. Alves, Luciana Maria Sarin, José Alberto Del Porto, Acioly L. T. de Lacerda

SUMMARY:

Background: Non-competitive N-methyl-D-aspartate glutamate receptor antagonist ketamine has been shown to have rapid antidepressant effects in treatment-resistant depression (TRD). However, few studies have investigated the role of biomarkers as well as clinical characteristics that predict a response to ketamine treatment. This review assesses sociodemographic variables, clinical markers and biomarkers that predict response to ketamine in TRD patients. **Methods:** Medline searches were conducted for clinical trials and systematic reviews through October 2016 using the following keywords: biomarker, predictor, major depressive disorder, bipolar depression, ketamine, glutamate, N-methyl-D-aspartate receptor antagonist, neuroimaging, BDNF, rapid-acting antidepressant, clinical predictors, and treatment-resistant depression. **Results:** Findings support the following clinical characteristics and biomarkers as predictors of response: 1) sociodemographic variables, i.e., positive family history of alcohol abuse disorder in first-degree relative (increased antidepressant response and fewer depressive symptoms for up to four weeks after infusions), higher BMI (improvement in depression severity at 230 minutes and one day after infusion) and negative history of suicide attempt (greater improvement at day 7); 2) infusion-associated events, i.e., greater dissociation during infusion (better antidepressant response at 230 minutes and one week after infusion) and rapid response to first infusion (sustained response to subsequent infusions in one-third of responders for up to 83 days); 3) symptomatology, i.e., anxious depression (fewer depression symptoms at day 1 up

to 25 associated with longer time to relapse) and neurocognitive performance (lower attention) predicting change in severity of depressive symptoms over six infusions; 4) peripheral measures, i.e., increased serum BDNF levels, peripheral levels of BDNF val66met (rs6265) genotype (Val/Val BDNF allele), lower baseline D-serine plasma concentrations, higher baseline serum levels of IL-6, increased baseline expression of Shank3, and higher levels of Vitamin B12; 5) neuroimaging, i.e., magnetoencephalographic (MEG) and facial task paradigms (increased rostral anterior cingulate activity), MEG and working memory (WM) task (little engagement of pgACC in response to increased WM load), proton magnetic resonance spectroscopy (lower Glx/glutamate ratio), MEG and tactile stimulation (increased somatosensory responses), and lower baseline left hippocampal volume; and 6) EEG/PSG, i.e., low baseline delta sleep ratio.

Conclusion: Although preliminary, these findings suggest that different biomarkers and some clinical characteristics may be used as predictors for ketamine response in TRD subjects. Future studies to confirm reliable predictors will assist clinicians in implementing efficacious and individualized treatment for TRD patients.

No. 44

Urokinase Versus tPA-Mediated Activation of BDNF by Human Astrocytes: Potential Role in the Molecular Regulation of Depression

Poster Presenter: Richard Idell, M.D.

Co-Authors: Galina Florova, Kathy Koenig, Tatiana Gaydenko, Mignote Chamiso, Rene Girard, Andrey Komissarov, Steven Idell

SUMMARY:

Background: Systemic inflammation induced by stress or illness may promote depression via inhibition of fibrinolysis in the brain. Within the brain parenchyma, the fibrinolytic system contributes to the cleavage of brain-derived neurotrophic factor (proBDNF) to its active, mature form (mBDNF). Availability of mBDNF is vital to normal synaptic transmission, neurogenesis and euthymic mood. We therefore sought to discern the effects of the inflammatory mediators linked to the pathogenesis of depression and altered cellular phenotype—TNF- α and TGF- β —on the regulation of expression of

components of the fibrinolytic system—urokinase (uPA) or tissue plasminogen activators (tPA)—and plasminogen activator inhibitor-1 (PAI-1) and activation of proBDNF by human brain astrocytes. **Methods:** Normal human astrocytes (NHA) were cultured in AMB3 media and were treated in the presence or absence of TNF- α (20ng/ml) and TGF- β (5ng/ml). Conditioned media and cell lysates were analyzed using qPCR, western blotting (WB) and fibrin enzymography. **Results:** TGF- β increased NHA expression of uPA and PAI-1 mRNA, while TNF- α promoted expression of tPA mRNA at 24 hours. WB and enzymography demonstrate that TGF- β induced astrocyte expression of PAI-1, which forms inhibitory complexes (approximately 100kDa) with tPA. Both enzymography and WB analyses demonstrated accumulation of a free single-chain uPA accompanied with formation of tPA/PAI-1 complexes. Neither plasminogen nor mBDNF were detected by WB in naïve or cytokine-treated NHA. Media supplemented with plasminogen (20 μ g/ml) but not BDNF (1 μ g/ml) induced a phenotypic activation of the cells associated elongation and concurrent decreased levels of plasminogen activating activity. Cleavage of proBDNF to the mBDNF was readily detectable by WB in the media of cells supplemented with both proBDNF and plasminogen. Formation of uPA/PAI-1 complexes was detected in the presence of plasminogen supplementation. **Conclusion:** Astrocytes treated with TGF- β show increased expression of uPA and PAI-1 and formation of tPA/PAI-1 complexes that results in accumulation of single chain uPA. These data allow us to infer that TGF- β may increase availability of uPA in situ to activate plasminogen secreted by microglia, representing a newly recognized and potentially targetable pathway by which mBDNF can be generated to alleviate depression.

No. 45

Eating Psychopathology in Bariatric Surgery Candidates With and Without Obstructive Sleep Apnea

Poster Presenter: Hedieh Tehrani

Co-Authors: Sanjeev Sockalingam, M.D., Raed Hawa, M.D., Marlene Taube-Schiff, Vincent A. Santiago, B.Sc.

SUMMARY:

Obstructive sleep apnea (OSA), eating psychopathology and major depression are highly prevalent in patients with severe obesity. Our study aimed to identify differences in binge eating disorder (BED) prevalence in bariatric surgery candidates with and without OSA. Data were collected retrospectively on 1,099 bariatric surgery candidates from the Toronto Western Hospital Bariatric Surgery Program (TWH-BSP). Variables collected included demographic data, psychiatric diagnoses, OSA, and binge eating diagnoses, as well as depressive and quality of life symptoms. Differences in psychopathology and quality of life between groups with OSA and BED, OSA alone, BED alone, and neither BED nor OSA were identified. Study participants' mean age was 44.7 years, with a mean body mass index of 49.3kg/m². Approximately 53% of patients had OSA, with 88% using continuous positive airway pressure (CPAP) as treatment. OSA patients were found to be significantly more likely to have a diagnosis of past BED and current major depressive disorder (MDD). Binge eating and depressive symptoms were significantly higher in patients with comorbid BED and OSA compared to patients with OSA alone or patients with no diagnosis of BED or OSA. Patients with comorbid BED and OSA and OSA alone had significantly lower health-related quality of life scores compared to patients with no diagnosis of BED or OSA. This is the largest study to examine relationships between obstructive sleep apnea, eating psychopathology and depression in pre-operative bariatric candidates. While further investigation is required, the current finding could be explained by early-onset BED predisposing individuals to weight gain, a risk factor for the development of OSA. Clinical applications of these results include early identification and treatment of BED, as well as enhanced/targeted screening for bariatric surgery candidates. In this poster, we discuss the emerging relationships and their potential clinical application.

No. 46

Preference for Different Types of Food in Women With Bulimia Nervosa and Binge Eating Disorder

Poster Presenter: Jaeun Ahn

SUMMARY:

Background: Recurrent episodes of binge eating are a cardinal symptom of both bulimia nervosa (BN) and binge eating disorder (BED); however, the type of food consumed during binge eating varies across individuals. We investigated what types of foods were preferred by women with recurrent binge eating episodes and compared the differences between BN and BED. **Methods:** We selected 30 photographs, which included four different types of food to stimulate appetite: 1) desserts/snacks; 2) meat; 3) fruits/vegetables; 4) rice/pasta; and 5) stationary objects as a control condition. Each type was composed of six different items within the type. After six hours of fasting, 39 participants (15 BN, 12 BED, 12 healthy controls) were instructed to score their appetite in Likert scales from 1 to 7 for each photograph. **Results:** The BN group reported stronger appetite to photographs of desserts/snacks, while the BED group and healthy controls reported stronger appetite to photographs of rice/pasta and meat. Statistical analysis showed that the mean appetite rank to desserts/snacks was significantly higher in the BN group compared to the BED group and healthy controls (Kruskal-Wallis test; BN=26.4; BED=19.2; control=15.5; $p=0.047$). The between-group differences for other types of food were not significant. **Conclusion:** Women with BN showed stronger preference toward desserts/snacks, while women with BED demonstrated no difference with the healthy control group, ranking photographs of meat (beef, pork and poultry) highest. This difference implies satiety disturbance in women with BN, which might be related to larger gastric capacity, slower gastric emptying rate and lower postprandial CCK release. This research was supported by a grant from Yonsei University College of Medicine (6–2014–0142).

No. 47

Effects of Autonomous and Controlled Motivations Upon Treatment Response of People Undergoing Outpatient Therapy for an Eating Disorder

Poster Presenter: Jeanne Sansfaçon, M.D.

Co-Authors: Howard Steiger, Ph.D., Lise Gauvin, Ph.D., Danaëlle Cottier, Émilie Fletcher, Esther Kahan, Erika Rossi, Lea Thaler, Mimi Israël, M.D.

SUMMARY:

Background: Previous research has shown that

individuals who are autonomously motivated for treatment show better response to in- and outpatient treatments for eating disorders, while controlled motivation does not seem to impact outcome. This before-after study assessed the effects of autonomous and controlled motivations for change in a large sample of adults engaged in specialized outpatient treatments for an eating disorder. **Methods:** We studied responses to day hospital and less-intensive outpatient treatments in a sample of adults with anorexia nervosa, bulimia nervosa, or other specified feeding or eating disorders. Prior to and following an interval of roughly 16 weeks of therapy, participants were weighed and completed the Eating Disorder Examination Questionnaire (EDE-Q) and the Autonomous and Controlled Motivations for Treatment Questionnaire. A subsample of patients subsequently completed the EDE-Q between two and 12 months after termination of treatment. **Results:** This study included data from 890 participants recruited consecutively between 2002 and 2016 (231 with anorexia nervosa, 351 with bulimia nervosa, and 308 with other specified feeding or eating disorders). Of those, 59.3% completed treatment and filled in the questionnaire package at both beginning and end of the therapy segment. After controlling for initial symptoms, treatment intensity and diagnosis, multiple regression analyses showed that higher autonomous motivation was associated with superior symptom reductions on the EDE-Q total score ($p<0.001$) and on all four EDE-Q subscales (restraint, eating, weight, and shape concerns) (all $p<0.01$). In contrast, controlled motivation was associated with significantly lower symptom reduction throughout treatment on the same indices, except for shape concerns ($p<0.05$ for weight concerns, all other $p<0.01$). Higher autonomous motivation was furthermore linked to greater decrease in bingeing frequency ($p<0.01$), while higher controlled motivation was not. Neither autonomous motivation nor controlled motivation were associated with vomiting frequency or weight restoration. The findings described remained the same when performing intent-to-treat analyses and at the two- to 12-month follow-up time point. **Conclusion:** Our results suggest that autonomous and controlled motivations have transdiagnostic influences upon

response to a range of specialized treatments for an eating disorder. In support of an autonomy-supportive approach to treatment, findings associate autonomous motivation with favorable outcomes and controlled motivation with undesirable effects.

No. 48

Assessing Spirituality in Mental Health Patients: A Study of Mental Health Trainees

Poster Presenter: James Palmer, D.O.

Co-Authors: Stephanie Hernandez, D.O., Benjamin L. Cook, Ph.D., Sanda DeJong, M.D.

SUMMARY:

Background: “Spirituality” has many definitions in health care literature. This study defines spirituality as a belief in a sacred being or supreme reality that also encompasses religiosity, or the active practice of spirituality. Research suggests patient spirituality can significantly impact medical and mental health care of patients. Professional practice guidelines recommend assessing patient spirituality as part of a full evaluation. Spiritual knowledge is a requirement of psychiatric training; however, very little is known about the knowledge, skills and attitudes of trainees in assessing spirituality in psychiatric patients. This pilot study explores mental health trainees’ self-descriptions of comfort and skill in assessing patient spirituality, as well as the influence they feel spirituality has on patient encounters. We hypothesize that the more trainees self-identify as spiritual, the more likely they will be to report feeling skilled and comfortable in assessing patient spirituality and to report that spirituality has a greater influence on their clinical encounters.

Methods: Trainees for the 2016–2017 academic year in the department of psychiatry (N=89) at an urban, community-based, academic hospital serving a socioeconomically and culturally diverse population were invited to complete a research survey with discrete and free-text options. The survey queried trainee demographics, personal spirituality description (agnostic, atheist, spiritual, religious, other), self-described comfort and skill in assessing patient spirituality, and its perceived clinical influence. Results were reviewed using qualitative, chi-squared and regression analyses. **Results:** Our preliminary results suggest that most trainees, regardless of their spiritual self-description, felt

comfortable assessing patient spirituality. Those self-describing as religious are more likely to not feel weakness in assessing patient spirituality ($\beta=-0.51$). Conversely, those self-describing as spiritual or who grew up in the western region of the United States were more likely to report feeling weakness ($\beta=0.43$, $\beta=0.55$, respectively). Most trainees did not report patient spirituality influences in half or more of their patient encounters; however, qualitative responses indicated that most trainees desired further spirituality training. **Conclusion:** Regardless of own comfort or perceived influence on clinic encounters, most trainees perceived weakness in their assessment skills of patient spirituality. As trainees feel more skilled in assessing spirituality, their perception of its influence on patient encounters may also increase.

No. 49

Mapping for Refugee Health in Houston

Poster Presenter: Weijie V. Lin

Co-Author: Sophia Banu, M.D.

SUMMARY:

Background: Houston is a hub for refugees, resettling upward of 1,500 refugees per year. This is especially notable in light of recent global crises. However, health is often an overlooked issue for refugees struggling to adjust to a new life in the United States, and many are not able to take advantage of the Medicare offered to them in the first few months because they are unable to find and reach clinics or health professionals that can understand their health issues and perspectives.

Methods: Our project’s objective is to bridge the barriers to health care access for refugees here in Houston. We have created an online map directory that is organized along searchable criteria of language, accepted insurance, specialty, and location. This can be accessed by case workers and refugees to identify the most relevant clinics for their needs. We have collated over 50 clinics across Houston, with recommendations from case workers. These clinics were organized and compiled by the criteria identified to be most important by a needs assessment conducted with case workers.

Conclusion: Currently, a beta version of this project is available to a select group of case workers for trial purposes. This project has gotten substantial interest

and support from case workers at refugee agencies across Houston, including YMCA International, Alliance, Amaanah, and Interfaith Ministries. It is supported by the Albert Schweitzer Fellowship of Houston and Galveston. We have also presented this project at two refugee health care fairs in Houston in 2016. This project is also getting interest from Houston PBS to be included in an online series. From our discussion with the refugee agencies across Houston, we project use by case workers at every agency in the next year.

No. 50

Ethical Dilemma—Should Risperidone Ever Be Prescribed for Gender Dysphoric Patient? A Trainee’s Perspective, Case Report and Literature Review

Poster Presenter: Malini Neramballi, M.D.

SUMMARY:

Objective: The goal of this case report is to educate providers, especially trainees, to recognize the reasons transgender men request a certain class of antipsychotic drugs. Trainees should be diligent in exploring the reasons and seek appropriate supervision from their clinical supervisors regarding the ethical dilemma in prescribing these medications. **Background:** Hyperprolactinemia is one of the most common antipsychotic-induced adverse events in psychiatric patients, especially patients treated with first-generation antipsychotics or the second-generation antipsychotic risperidone. A number of studies have demonstrated that treatment of schizophrenia with risperidone may cause a substantial plasma prolactin increase and an unacceptably high incidence of prolactin-related symptoms (PRS), including gynecomastia and sexual dysfunction. Gynecomastia, defined as benign proliferation of male breast glandular tissue, is typically caused by increased estrogen activity, decreased testosterone activity or the use of various medications. It can cause considerable anxiety in young adolescents and adult men. However, transgender men tend to seek this medication looking for the same “side effect” that psychiatrists warn, educate and caution rest of the patient population. Transgender men with psychiatric illness who are considering undergoing sex reassignment surgeries are keen to be started on risperidone

medication hoping for gynecomastia in spite of the warning of other side effects of risperidone.

Methods: We present a young transgender male with schizophrenia requesting risperidone for psychotic symptoms and hoping for the side effect of gynecomastia. **Conclusion:** The use of medications is critical to effective health care. It is important that physicians prescribe medications appropriately and patients use them as directed. Improving medicine use through patient-oriented interventions can be expected to improve treatment outcomes, improve doctor-patient relationships, and reduce costs of medications and time spent by health care personnel in dealing with patients. However, ethical dilemmas that arise from these interventions should be addressed appropriately early during a trainee’s career.

No. 51

Gun Violence and Mental Disorders: Decriminalizing Mental Illness

Poster Presenter: Rahn K. Bailey, M.D.

Co-Author: Preston Gentry

SUMMARY:

Gun violence in the United States is a growing problem that has gained more notoriety in the last few decades, especially due to increased mass shootings. This seems to be a uniquely American trend, as evidenced by the fact that, compared with the 25 highest-income nations in the world, the United States has the highest rate of firearm deaths. There are an estimated 310 million firearms owned by American citizens, or 90 firearms for every 100 people. According to the CDC, approximately 31,000 deaths occur due to gun violence, with an average of 80 deaths per day, and 70,000 others treated for gunshot wounds each year in the United States. Annually, nearly 70% of all homicides, 52% of suicides, 43% of robberies, and 21% of aggravated assaults are committed using a firearm. To put this into perspective, guns are implicated in nearly 400,000 crimes a year within the United States alone. The younger American population is disproportionately affected by gun violence. Each year, young people (up to the age of 24) represent over 40% of all the firearm deaths and non-fatal gun injuries. In the year 2005 alone, the number of children and teenagers killed by guns could have

filled 120 public school 25-student classrooms. Aside from the immeasurable loss of life, the economic burden of gun violence is staggering: recent estimates of the direct medical costs due to gun violence are \$2.3 billion annually, with indirect costs of medical, legal and other societal annuities equaling an additional \$100 billion. About half of the direct medical costs accrued from gun violence are passed on directly to the American tax-payer. The rate of gun violence involving those with mental illness is significantly less than that of the general public. Only three to five percent of crimes committed in the United States involve people with mental illness, and the percentage of gun violence perpetrated by those with pervasive severe mental illness (SMI) is lower than those without mental illness. Despite the overwhelming data supporting that those with mental illness are less likely to commit acts of gun violence toward others, to completely ignore the fact that acts of violence, and specifically acts of gun-related violence, have been perpetrated by those with SMI would make for an unrealistic look at the overall issue of gun policy in the United States. However, the subject of violence committed by those with SMI is multifaceted at its most basic.

No. 52

The Impact of Fluctuation of Corticosteroids on Psychiatric Symptoms: New-Onset Psychosis in an Elderly Patient With Addison Disease

Poster Presenter: Maryam Hazeghazam, M.D., Ph.D.

SUMMARY:

The main line of treatment for Addison disease is corticosteroids. Glucocorticosteroids originate from Zona Fasciculata in adrenal glands. Treatment of Addison disease involves replacement of absent hormones. Psychiatric symptoms, mainly mania and depression, have been reported in five to 18% of patients treated with corticosteroids. Although psychotic symptoms are less frequent among patients treated with corticosteroids and are often overlooked by physicians, they could be the initial presentation of a life-threatening adrenal crisis. We report new-onset psychosis in an elderly patient with Addison disease who had been on corticosteroid treatment for 17 years and stopped her medications prior to admission. The mechanism

of the impact of corticosteroid level fluctuations on psychiatric symptoms includes the impact on neuronal excitability and enhanced ability to sensory inputs, to the direct impact of electrolyte changes and hypoglycemia from low cortisol levels. In this report, we emphasize the importance of detailed medical history for patients with endocrine abnormalities and no reports of substance abuse or past psychosis before developing a treatment plan or prescribing medications.

No. 53

Psychosocial Predictors of U.S. Marine Corps Attrition

Poster Presenter: Daniel Drew Tarman

Co-Author: Jeffrey Millegan, M.D., M.P.H.

SUMMARY:

Since 1973, the United States Armed Forces have operated as an all-volunteer force with the need to recruit and train qualified civilians. Traditionally, the military has used age at enlistment, level of education and performance on the Armed Services Vocational Aptitude Battery (ASVAB) as the primary factors for screening potential recruits. However, the ongoing conflicts in the Middle East have strained the ability of the military to attract qualified volunteers. At the height of the conflicts, the military experienced a decrease in standards and an increase in retention of servicemembers who would not normally be retained. The current conflicts also resulted in increased attention on mental health factors involved in military suicide, misconduct and new mental health diagnoses potentially caused by combat exposure. However, recruit screening and preexisting risk factors for early attrition have received minimal attention and may actually play a larger role in the above issues by limiting downstream effects. In civilian populations, psychosocial factors such as adverse childhood experiences are well known to increase the risk of negative medical and psychologic outcomes as an adult; however, their effects on military performance and attrition are not as well understood. Given the high cost of training, even a small reduction in attrition from improved screening would produce significant cost savings and improve mission readiness. This study examines the impact of demographic and preexisting physical and

psychosocial factors that may affect attrition using data from the Recruit Assessment Program questionnaire on over 150,000 Marine recruits entering training at MCRD San Diego since 2002. Military discharges and separations within the first year of enlistment are then correlated with identified questionnaire data in order to determine potential pre-service factors that are predictive of first-year attrition in the U.S. Marine Corps. Study results indicate that significant risk factors affecting attrition during the first year of enlistment include older age at accession, history of four or more adverse childhood experiences, prior mental health consultation, preexisting self-harming behavior, preexisting exposure to trauma, recent symptoms of depression, and decreased functioning. To the best of our knowledge, this is the first large population study that examined increased first-year attrition risk due to preexisting physical and mental health factors and adverse childhood events and is presented to add to the current body of knowledge on military attrition.

No. 54

Inpatient Psychiatric Admission Rates in a U.S. Air Force Basic Military Training Population

Poster Presenter: Joseph A. Mansfield, M.D.

Co-Authors: Christopher Jorgensen, Royce Molick

SUMMARY:

Background: Mental health admission rates for those with no active mental health disorders have been shown to have no correlation with age, except with young adults (age 18–25) with no mental health history, who have the largest incidence of inpatient admissions. The U.S. Air Force is predominantly made up of this demographic and almost exclusively within its Basic Training population. This study investigated the incidence of inpatient psychiatric admissions of U.S. Air Force basic military trainees over a 12-month period compared to U.S. inpatient psychiatric admission rates of the same demographic. **Objective:** Compare inpatient psychiatric admission rates in a U.S. Air Force basic military training population against the national average. **Methods:** A deidentified database with demographic information from psychiatric inpatients actively enrolled in Air Force basic military training (BMT) was collected and compared to a nationally

collected, deidentified database that stratified national mental health admissions over the 2015 calendar year. These were used to compare the relative admission rates. The subjects compared were adults aged 18 to 25 with no history of mental illness. Inclusion criteria for the database required admission to the San Antonio Military Medical Center (SAMMC) inpatient psychiatric ward or screening by the SAMMC emergency department and subsequent transfer to an inpatient mental health facility. **Results:** Inpatient psychiatric admission data of 244 U.S. Air Force BMT patients out of a population of 34,107 U.S. Air Force basic military trainees over a span of 12 months revealed an admission rate of 7.2 admissions per 1,000 population. National admission data for the same population demographic revealed an admission rate of 6.0 admissions per 1,000 population. **Conclusion:** U.S. Air Force basic military training is positively associated with a significant increase (20%) in inpatient psychiatric admissions. Findings suggest a need to better understand the cause of this increased admission rate and to elucidate potential risk factors that may be targets for future studies.

No. 55

The Curious Case of Mr. H.: Diagnosing Complicated PTSD in the Primary Care Setting

Poster Presenter: Ngoc Bui

SUMMARY:

In Western countries, 10 to 12% of women and five to six percent of men report experiencing exposure to traumatic stressors and symptoms sufficient to qualify for a diagnosis of posttraumatic stress disorder (PTSD). Nonspecific symptoms that present in the primary care clinics make PTSD a frequently undiagnosed and disabling condition. These vague symptoms include episodic palpitations, diaphoresis, dyspnea, poor concentration, sleep disturbance, and persistent negative emotional state. It is essential that primary care providers understand the root cause of these symptoms to provide appropriate treatments and referrals. Mr. H., a 56-year-old African-American male veteran with a past psychiatric history of delusional disorder and a past medical history of chronic pain, presented to the primary care behavioral health clinic for an evaluation of PTSD. This mental health clinic is

integrated within the outpatient primary care system at our veteran hospital. He complained of depression with poor concentration, constant anxiety and chronic insomnia. He exhibited PTSD symptoms, including nightmares and flashbacks with episodic palpitations, anxiety, diaphoresis, and dyspnea. Mr. H. explained that in 1981, while on active duty in the air force, he saw a spaceship physically obtaining energy from a nuclear plant. He remembered the military tying him up and performing tests on him, sticking needles into his head, right arm and right chest to erase his memory. He stated that the military has been after him ever since. His symptoms met most of the *DSM-5* criteria for PTSD, including re-experiencing the trauma, avoidance, hyperarousal, and negative changes in cognition and mood. Per the *DSM-5*, a diagnosis of PTSD requires exposure to actual or threatened death, serious injury or sexual violence. Although his trauma is a delusion, it is nevertheless real to him, as he felt that his life was truly threatened. The subjective trauma may have been traumatic enough to precipitate PTSD. Several cases have proposed that PTSD could be a response to the experience of psychosis. In the proposed PTSD criteria of the latest ICD-11 beta draft, trauma is more broadly defined as a threatening or horrific event that cause classic symptoms including re-experiencing the trauma, avoidance and hypervigilance. Mr. H. exhibited these core symptoms and was thus diagnosed with PTSD. He was started on initial treatment with risperidone with plans for close outpatient monitoring. Although rare, cases of psychosis leading to PTSD have been previously reported. This multidisciplinary case highlights the importance of understanding complicated PTSD and potential confounding symptoms in diagnosing PTSD and primary psychotic disorders.

No. 56

Purpose in Life and Mental Health of U.S. Military Veterans: Results From the National Health and Resilience in Veterans Study

Poster Presenter: Ritvij M. Satodiya, M.D.

Co-Authors: Stefan E. Schulenberg, Ph.D., Timothy Amoroso, B.S., Steven M. Southwick, M.D., Robert H. Pietrzak, Ph.D.

SUMMARY:

Background: Purpose in life (PIL) or “meaning-making” have been linked to positive psychological development and well-being. To date, however, few studies have examined the relation between PIL, which is modifiable, and mental health outcomes in population-based samples of individuals at risk for psychiatric morbidities, such as military veterans. In this study, we analyzed data from a large, contemporary and nationally representative sample of U.S. military veterans to determine the cross-sectional association between PIL and common psychiatric disorders, as well as suicidal ideation and attempts. **Methods:** Data were analyzed from the National Health and Resilience in Veterans Study (NHRVS), which surveyed a nationally representative sample of U. S military veterans in 2011. The sample was comprised of 3,157 veterans ranging in age from 21 to 96 (mean=60.3, SD=15.0) and 90.6% men. Multivariable logistic regression analyses were conducted to evaluate associations between scores on the Purpose in Life Test–Short Form (PIL-SF) and common psychiatric disorders and suicidal ideation and attempts, which were assessed using the Mini-International Neuropsychiatric Interview, Patient Health Questionnaire-4, Alcohol Use Disorders Identification Test–Consumption, and Fagerström Test for Nicotine Dependence. Age, sex, race, education, employment status, income, traumatic life events, combat veteran status, and scores on measures of resilience (Connor-Davidson Resilience Scale-10) and social support (Medical Outcomes Study Social Support Scale-5) were entered as covariates; analyses of suicidal ideation and attempts were additionally adjusted for lifetime major depressive and/or posttraumatic stress disorder. **Results:** Greater PIL-SF scores were independently associated with a significantly reduced likelihood of lifetime major depressive disorder (MDD) (odds ratio [OR]=0.87), alcohol (OR=0.64) and drug (OR=0.76) use disorders, nicotine (OR=0.67) dependence, and suicide attempt (OR=0.82), as well as current MDD (OR=0.66), GAD (OR=0.84) and suicidal ideation (OR=0.77), even after adjustment for a broad range of sociodemographic, military and psychosocial variables. **Conclusion:** Results suggest that a greater sense of purpose in life is associated with reduced likelihood of a broad range of common mental disorders, as well as suicidal ideation and attempts

in U.S. military veterans. The magnitudes of these associations were moderate, ranging from 13 to 36% reduction in risk for mental disorders and 18 to 23% reduction in suicidality for each standard deviation unit increase in PIL score. While longitudinal studies are needed to characterize the directional association between purpose in life and mental health outcomes, results of this study underscore the potential importance of intervention efforts to enhance purpose in life in order to mitigate risk and promote recovery from psychiatric morbidities and suicidality in this population.

No. 57

Hippocampal Subfield Volumes Correlated With PTSD Symptom Severity

Poster Presenter: Ritvij M. Satodiya, M.D.

Co-Authors: Christopher L. Averill, B.S., Teddy J. Akiki, M.D., Lynnette A. Averill, Ph.D., Timothy Amoroso, B.S., Kristen M. Wrocklage, Ph.D., J. Cobb Scott, Ph.D., Steven M. Southwick, M.D., John H. Krystal, M.D., Chadi G. Abdallah, M.D.

SUMMARY:

Background: Two decades of human neuroimaging and postmortem research have resulted in sizable evidence implicating the hippocampus in the pathophysiology of posttraumatic stress disorder (PTSD). Not without inconsistency, bilateral volumetric changes in the hippocampus have been repeatedly described in the literature. Different hippocampal subfields have unique cellular architectures as well as distinct developmental and functional properties. Therefore, identification of specific subfield abnormalities in PTSD has particular pathophysiological and treatment implications. Recent advances in neuroimaging methods have made it possible to accurately delineate hippocampal subfields. In this poster, we report a pilot exploratory volumetric analysis of hippocampal subfields in a group of combat-exposed veterans.

Methods: Sixty-eight U.S. combat-exposed veterans (PTSD: N=36; combat control [CC]: N=32) completed high-resolution structural magnetic resonance imaging (sMRI). Based on previously validated methods, hippocampal global and subfield segmentation and volume measurements were conducted using Freesurfer 6.0. The Clinician-Administered PTSD Scale (CAPS) was used to assess

PTSD symptom severity. Controlling for age and total brain volume, partial correlation analysis examined the relationship between hippocampal region of interest (ROI) volumes and CAPS scores. Correction for multiple comparisons was performed using FDR.

Results: Of the 11 ROIs examined, CAPS scores negatively correlated with total hippocampal volume ($r=-0.33$, $df=64$, $p=0.007$, corrected $p=0.04$) and the hippocampus-amygdala transition area (HATA; $r=-0.34$, $df=64$, $p=0.005$, corrected $p=0.04$). CAPS did not significantly correlate with the volumes of dentate gyrus, CA1, CA2/3, CA4, presubiculum, subiculum, parasubiculum, molecular layer, or hippocampal tail. **Conclusion:** This study provides evidence of selective volumetric abnormalities within the hippocampus in the HATA. The HATA is highly connected to the amygdala. Also, the HATA is connected to the prefrontal cortex and hypothalamus. This architecture could affect the acquisition of traumatic memories, as well as behavioral and neuroendocrine response to traumatic stress.

No. 58

Demographic Characteristics of Posttraumatic Embitterment Disorder in Korean General Population and Relationship with Depressive Disorder

Poster Presenter: Seung-Hoon Lee

Co-Authors: Sangwon Jeon, Younghoon Ko, Yongku Kim, Changsu Han

SUMMARY:

Background: Korean society has experienced long-term unemployment and social inequality, and this situation may have contributed to increased feelings of embitterment in the Korean population. In this poster, the authors implemented a survey on posttraumatic embitterment disorder (PTED) symptoms, perceived stress and depression in the Korean general population and studied the relationship between PTED and major depressive disorder. **Methods:** Participant data were pooled from an Internet panel survey based on the Korean population census by randomization in age, region and sex. The Posttraumatic Embitterment Disorder Self-Rating Scale (PTEDS), Patient Health Questionnaire-9 (PHQ-9) and Perceived Stress Scale (PSS) scores were gathered from participants, along

with their demographic characteristics. Pearson correlation has been examined on the participants' PTEDS, PHQ-9 and PSS scores. Stepwise multiple regression of PTEDS score was performed to demonstrate contribution of participants' demographic features, depression and perceived stress. **Results:** This analysis included 2,101 adults from Korean general participants' data (mean age=43.70±14.46, 48.9% male). The mean PTEDS score of all participants was 1.48±0.87, and the prevalence of PTED among the participants (PTEDS score of 1.6 or more) was 42.7%. Pearson correlation results showed a significant relationship with PTEDS, PHQ-9 and PSS ($r=0.691$, $p<0.001$; $r=0.771$, $p<0.001$; $r=0.706$, $p<0.001$). Stepwise multiple regression analysis results concluded that PHQ-9 score explained 58.8.1–60.1% of PTEDS score. **Conclusion:** Prevalence of posttraumatic embitterment disorder was high among the Korean general population. This may be because of long-term employment and social inequality. Depression was significantly related to embitterment symptom, and further study is promising to find out whether PTED is an independent psychiatric disorder, which is different from depression.

No. 59

Psychotic Symptoms Predict Suicidal Behavior After Discharge in High-Risk Psychiatric Inpatients

Poster Presenter: Hae-Joon Kim

Co-Authors: Elvira Rudner, Zimri S. Yaseen, M.D., Igor Galynker, M.D., Ph.D.

SUMMARY:

Psychotic disorders are associated with a greater risk of suicidal behavior; however, psychotic symptoms are more common than actual diagnoses of psychotic disorder. Furthermore, studies have shown that psychotic symptoms are more likely to predict suicidal behavior during an acute psychiatric episode, such as an inpatient hospitalization. This study assesses whether psychotic symptoms predict postdischarge suicidal behavior in psychiatric inpatients independent of a psychotic disorder diagnosis. Data were collected from 201 psychiatric inpatients at Mount Sinai Beth Israel Hospital. Primary psychiatric diagnoses were extracted from patient charts and categorized as four diagnostic groups: 1) psychotic disorders; 2) bipolar mood

disorders; 3) unipolar mood disorders; and 4) all other disorders. Observed psychotic symptoms were assessed by clinicians at patient admission, defined as either the presence or absence of these symptoms in the past week. Self-reported psychotic symptoms were assessed by the psychoticism subscale of the Brief Symptom Inventory (BSI), administered within 72 hours of admission. Postdischarge suicidal behavior (SB) was assessed by the Columbia Suicide Severity Rating Scale (C-SSRS) and is defined as an aborted, interrupted or actual suicide attempt during the follow-up period, four to eight weeks after discharge. Both observed psychotic symptoms ($\chi^2[1, N=127]=4.05$, $p=0.044$) and self-reported psychotics symptoms (Mann–Whitney $U=442$, $p=0.019$) were associated with postdischarge suicidal behavior. There was no significant difference between the SB and non-SB groups based on primary diagnosis, however. Stepwise logistic regressions were performed to assess the relationships between psychotic symptoms and suicidal behavior, controlling for primary psychiatric diagnoses. Only BSI psychotic symptoms remained an independent and significant predictor of postdischarge SB when entered into the regression model ($OR=1.992$, $p=0.049$). These results suggest that psychotic symptoms assessed during inpatient hospitalization, independent of a psychotic disorder diagnosis, may be an important factor in predicting short-term, postdischarge suicidal behavior.

No. 60

Suicide After Psychiatric Hospitalization for Depression in Finland 1991–2014

Poster Presenter: Kari I. Aaltonen

Co-Authors: Reijo Sund, Sami Pirkola, Erkki T. Isometsä, M.D., Ph.D.

SUMMARY:

Background: Patients with depression have a high risk of suicide. Great efforts have been undertaken to improve treatment of depression, and ecological associations exists between increasing sales of antidepressants and declining suicide mortality. Contemporaneously, mental health service changes over past decades have included a substantial reduction in the number of psychiatric beds. Therefore, updated estimates for suicide mortality

are needed. In this national study of subjects hospitalized for depressive disorders in Finland, we investigated suicide deaths during the current diagnostic and treatment era. **Methods:** Register data from 1) the Finnish Hospital Discharge Register, containing data on all psychiatric hospitalizations in Finland; 2) the Census Register of Statistics Finland, providing sociodemographic information; and 3) Statistics Finland's register on causes of death were linked pertaining to years 1990–2014. All first psychiatric hospitalizations in 1991–2011 with a principal diagnosis of a depressive disorder were included, and the subjects were followed up until death by suicide, death for other reasons, or end of follow-up in 2014 (maximum 24 years). **Results:** A total of 56,826 first psychiatric hospitalizations for depression in Finland during the years 1991–2011 were included. Overall, 2,567 suicide deaths (1,598 men; 969 women) had occurred during the follow-up period. Cumulative incidence (4.5% overall) was higher among males (6.3%) than females (3.1%). The age- and sex-adjusted hazards of suicide (reference years 1991–1995) for three years after discharge declined for consecutive five-year cohorts. In Cox models, the hazard for suicide was about twofold in men and increased by severe depression without psychotic symptoms, psychotic depression, alcohol dependence, and associated with several sociodemographic factors at baseline. A suicide attempt within the past four years increased the hazard of suicide about twofold. Analysis of data is ongoing; final and detailed results, including those clarifying possible gender differences in risk factors and temporal trends in suicide mortality, will be presented. **Conclusion:** To our knowledge, this is the largest prospective study of both risk of suicide and several risk factors for suicide in depression to date. Findings are broadly concordant with previous Scandinavian studies, but a declining temporal trend in risk of suicide was observed.

No. 61

Predicting Suicide With the SAD PERSONS Scale

Poster Presenter: Cara Katz, M.D.

Co-Authors: Jason Randall, Jitender Sareen, Dan Chateau, Randy Walld, William Leslie, JianLi Wang, James Bolton

SUMMARY:

Background: Suicide is a major public health issue, and a priority requirement is accurately identifying high-risk individuals. The SAD PERSONS suicide risk assessment scale is widely implemented in clinical settings despite limited supporting evidence. This poster aims to determine the ability of the SAD PERSONS scale to predict future suicide in the emergency department. **Methods:** 5,462 consecutive adults were seen by psychiatry consultation teams in two tertiary emergency departments with linkage to population-based administrative data to determine suicide death within six months, one year and five years. **Results:** Seventy-seven (1.4%) individuals died by suicide during the study period. When predicting suicide at 12 months, medium- and high-risk scores on SAD PERSONS had a sensitivity of 49% and a specificity of 60%; the positive and negative predictive values were 0.9% and 99%, respectively. Half of the suicides at both six- and 12-month intervals were classified as low risk by SAD PERSONS at index visit. The AUC at 12 months for the Modified SAD PERSONS scale was 0.59 (95% confidence interval [CI] [0.51, 0.67]). High-risk scores (compared to low risk) were significantly associated with death by suicide over the five-year study period using the SAD PERSONS scale (hazard ratio [HR]=2.49; 95% CI [1.34, 4.61]) and modified version (HR=2.29; 95% CI [1.24, 2.29]). **Conclusion:** Although widely used in educational and clinical settings, these findings do not support use of the SAD PERSONS and Modified SAD PERSONS scales to predict suicide in adults seen by psychiatric services in the emergency department.

No. 62

Circulating T Lymphocyte Subsets, Cytokines and Immune Checkpoint Inhibitors in Patients With Bipolar II or Major Depression: A Preliminary Study

Poster Presenter: Shao-hua Hu

Co-Authors: Wei Wu, Jian-bo Lai, Yi Xu

SUMMARY:

Objective: This study aimed to investigate the less known activation pattern of T lymphocyte populations and immune checkpoint inhibitors on immunocytes in patients with bipolar II disorder depression (BD) or major depression (MD). **Methods:** A total of 23 patients with BD, 22 patients with MD and 20 healthy controls (HCs) were

recruited. The blood cell count of T lymphocyte subsets and the plasma level of cytokines (IL-2, IL-4, IL-6, IL-10, TNF- α , and IFN- γ) were selectively investigated. The expression of T-cell immunoglobulin and mucin-domain containing-3 (TIM-3), programmed cell death protein 1 (PD-1) and its ligands, PD-L1 and PD-L2, on T lymphocytes and monocytes was detected. **Results:** The blood proportion of cytotoxic T cells significantly decreased in BD patients compared to either MD patients or HCs. The plasma level of IL-6 increased in patients with BD and MD. The expression of TIM3 on cytotoxic T cells significantly increased, whereas the expression of PD-L2 on monocytes significantly decreased in patients with BD as compared to HCs. Moreover, correlation analysis indicated that, in BD patients, the blood proportion of cytotoxic T cells was negatively correlated with the onset age of disease ($p=0.034$ and $r=-0.444$). Besides, the expression of TIM3 on cytotoxic T cells tended to negatively correlate with the MADRS score ($p=0.075$ and $r=-0.457$). **Conclusion:** These findings extended our knowledge of the immune dysfunction in patients with affective disorders.

No. 63

Effect of Childhood Trauma and Abuse and Adult Resilience on Suicidal Ideation Severity

Poster Presenter: Rachael Lerner

Co-Authors: Hae-Joon Kim, Zimri S. Yaseen, M.D., Igor Galynker, M.D., Ph.D.

SUMMARY:

Childhood trauma is a well-established risk factor for suicidal ideation and behavior. Moreover, current research suggests that resilience may be a protective factor for suicidal behavior in those with a history of childhood trauma. This study assesses whether adult resilience moderates the relationship between childhood trauma and suicidal ideation severity. Data were collected from 190 outpatients recruited from three urban hospitals. Participants were administered the Childhood Trauma Questionnaire (CTQ), a self-report questionnaire that assesses childhood physical and emotional abuse and neglect, as well as childhood sexual abuse; the Connor-Davidson Resilience Scale (CD-RISC), a self-report questionnaire that measures resilience; and the Beck Scale for Suicide Ideation (BSS), a self-report

questionnaire that assesses the severity of current suicidal ideation. Multiple linear regression analyses were performed to investigate whether childhood trauma and adult resilience were significantly and independently associated with current suicidal ideation severity. In multivariate models, only resilience ($b=-0.157$, $p<0.001$) and the emotional abuse subscales of the CTQ were significantly associated with suicidal ideation severity ($b=-0.277$, $p=0.031$). In order to examine whether resilience is a moderator of the relationship between trauma and suicide risk, total childhood trauma scores and adult resilience scores were entered in the first step of the regression analysis; this model was significant, accounting for 23% of the variance in suicidal ideation ($p<0.001$). In the second step, the interaction term between childhood trauma and adult resilience was added to the regression, which significantly improved the model ($\Delta R^2=0.04$, $p=0.012$). The regression analysis was repeated to test for a moderation effect of resilience specifically on emotional abuse. Emotional abuse and resilience were entered into the regression, and the model was significant, accounting for 25% of the variance ($p<0.001$). In the second step, the interaction term between emotional abuse and resilience was added to the regression, which significantly improved the model ($\Delta R^2=0.04$, $p=0.012$). These analyses reveal that the relationship between suicidal ideation severity and both childhood trauma globally and emotional abuse specifically are moderated by the effects of resilience. Thus, resilience is more protective against suicidal ideation among patients with higher levels of trauma.

No. 64

The Relationship Between Attachment Styles, Childhood Trauma and Suicide Crisis Syndrome

Poster Presenter: Shoshana Linzer

SUMMARY:

Background: Insecure attachment styles and childhood trauma have been previously linked to suicidal behavior. In our prior work, we have validated the construct of suicide crisis syndrome (SCS), which describes an acute negative affect state that is thought to precede an actual suicide attempt. SCS is characterized by experiences of entrapment, ruminative flooding, panic-dissociation, emotional

pain, and fear of dying. The goal of this analysis is to determine if individuals with specific attachment style traits and childhood trauma are more likely to experience suicide crisis syndrome. **Methods:** Adult (ages 18–65) psychiatric inpatients admitted for suicidal ideation or attempt were recruited from the Mount Sinai Beth Israel inpatient service as part of a larger study. As part of a battery of tests, patients were administered the Suicide Crisis Inventory (SCI), Relationship Scales Questionnaire (RSQ) and Childhood Trauma Questionnaire (CTQ). The RSQ subscales include secure, preoccupied, dismissing, and fearful attachment scores. The CTQ subscales include physical abuse, emotional neglect, emotional abuse, physical neglect, and sexual abuse scales, assessing different types of childhood trauma. Correlations were performed to assess the relationship between attachment styles, childhood trauma and the SCI. **Results:** Eighty-five (85) inpatients were recruited and analyzed in regard to attachment style. The results show preoccupied attachment ($r=0.298$, $p=0.006$) to be significantly and positively correlated with SCI scores, while fearful attachment ($r=0.200$, $p=0.068$) was only marginally correlated with SCI score. Secure attachment ($r=-0.239$, $p=0.030$) was significantly and negatively correlated. Dismissing attachment was not significantly correlated with the SCI. Both physical abuse ($r=0.264$, $p=0.014$) and emotional abuse ($r=0.243$, $p=0.026$) showed significant correlations with the SCI. Emotional neglect, physical neglect and sexual abuse were not significantly correlated with the SCI in our data set. **Conclusion:** Adult psychiatric inpatients with fearful and preoccupied attachment styles were more likely to score high on the SCI scale and patients with secure attachment to score low. Additionally, patients who experienced both physical and emotional abuse as children had significantly higher scores on the SCI than those who did not. The results indicate a relationship between both attachment style and childhood trauma and the likelihood of experiencing suicide crisis syndrome in adulthood among psychiatric inpatients with a history of suicidal ideation or behavior.

No. 65

A Cross-Sectional Study of Common Mental Disorders and Suicidal Behaviors in Chifeng City of

Inner Mongolia Autonomous Region in China

Poster Presenter: Xiao Wang

Lead Author: Zhaorui Liu, M.D., Ph.D., M.P.H.

Co-Authors: Guohua Li, Yueqin Huang

SUMMARY:

Objective: The purpose of the study was to describe the prevalence and transitions of suicidal behavior in an Inner Mongolia city of China and to explore impact of comorbidity of common mental disorders to suicidal behaviors. **Methods:** This was a cross-sectional study conducted in 6,376 community residents. The Composite International Diagnostic Interview-3.0 (CIDI-3.0) was used to make diagnoses of mental disorders, measure suicidal behaviors and collect social demographic information. **Results:** A total of 4,528 respondents were interviewed by CIDI-3.0. The response rate was 75.0%. The lifetime prevalence of suicidal ideation, suicide plan and suicide attempt were 1.52%, 0.70% and 0.54%, respectively. The transition probabilities were 40.8% from an ideation to a plan and 27.6% from an ideation to an attempt. Among those respondents with suicidal ideation, 21.1% of them had a planned suicide attempt and 6.6% had an unplanned suicide attempt. When comorbidity was not considered in the model, mood disorder and anxiety disorder were the most important drivers to suicidal behaviors. However, after including the comorbidity of these common mental disorders, only those respondents who suffered from mood disorder and anxiety disorder had significant contributions to suicidal behaviors, not those persons with a specific disorder only. In the model, being unemployed, rural and female; having no income; and having childhood adversities were also related to suicidal behaviors. **Conclusion:** Comorbidity of mood disorder and anxiety disorder was the most important risk factor of suicidal behaviors. Much attention should be paid to those patients with comorbidity.

No. 66

Mental Health Care as Experienced by Persons Who Die by Suicide: A Qualitative Analysis of Suicide Notes

Poster Presenter: Zainab Furqan

Co-Authors: Ayal Schaffer, Juveria Zaheer, Mark Sinyor

SUMMARY:

Mental illness appears to be the most significant risk factor for suicide. Despite contact with health professionals, patients often do not disclose their suicidal intent to care providers. There is a comparative lack of research that utilizes qualitative methods to explore the subjective experiences of people who die by suicide. Suicide notes offer unique insight into these subjective experiences. Through the lens of constructivist grounded theory, our study explores the following questions: "How is mental health care experienced by those who die by suicide?" and "What role does this experience play in an individual's journey to suicide?" Our sample is a set of 21 purposefully selected notes from a larger sample of 255 notes that were obtained through the Toronto coroner's office. These 21 notes explicitly make mention of mental illness and/or at least one form of mental health care. We engaged in a process of initial line-by-line open coding of our purposeful sample. We then examined these codes and searched for connections and relationships between the codes through the process of axial coding and subsequently engaged in memoing and theorizing of the data. This led to the emergence of preliminary themes. The average age of the note writers was 43.7. Nine out of the 21 note writers were female, while 12 were male. Preliminary themes emergent from the data include 1) perception of recurrent utilization of mental health care as personal failure; 2) recurrent utilization of mental health care as a manifestation of accumulating hopelessness; 3) the construction of suicide as being beyond the scope of mental health care; 4) tensions between the conceptualization of mental illness as an inherent part of the self and mental illness as a disease to be fought or overcome; and 5) suicide as an exertion of self-autonomy, distinct from the influence of mental illness. The complexity of an individual's relationship with mental illness and mental health care, as exemplified by the preliminary themes that have emerged from our data, requires a nuanced approach. Deepening this type of understanding can guide us in developing more effective and impactful strategies to decrease the burden of suicide.

No. 67

Social Information Processing After Mild Traumatic Brain Injury

Poster Presenter: Jia Yan Zhang

SUMMARY:

Background: Previous studies have shown that moderate to severe traumatic brain injury (TBI) can be associated with deficits in multiple social information processing domains, including emotion perception, theory of mind and social behavioral control. However, little is known about social information processing after mild TBI. In this study, we aim to address this gap of knowledge in adults with mild TBI. **Methods:** Subjects with mild TBI (N=47, mean Glasgow Coma Scale score=14.44) and demographically matched healthy controls (N=30) between ages 18 and 65 were recruited. All subjects were tested in three aspects of social information processing: facial emotion perception (the Florida Affect Battery subtests 1 to 5), social cognition (the Reading the Mind in the Eyes Test, the Yoni Task and the Interpersonal Reactivity Index) and social regulation (the Game of Dice Task, the Iowa Gambling Task, the Ultimatum Game, and the Behavioral Dyscontrol Scale). General cognition (information processing speed, memory, executive function, and attention) was also assessed. The psychiatric status of all subjects was determined using the Hospital Anxiety and Depression Scale (HADS). **Results:** There was no differences in age, sex and years of education between the mild TBI and the healthy control groups. Subjects with mild TBI performed significantly worse than healthy controls on traditional cognitive measures of information processing speed (Trail Making B and Trail Making B-A, $p=0.004$ and $p=0.009$, respectively) and executive function (Stroop and the Controlled Oral Word Association Test, $p=0.009$ and $p=0.033$, respectively), even after adjusting for HADS anxiety and depression scores. However, mild TBI subjects did not score significantly lower on any of the social information processing tasks after adjusting for HADS scores. **Conclusion:** This study suggests that social information processing abilities remain intact in adults with mild TBI, despite impairments in general cognitive functions. Our results contrast with findings from moderate to severe TBI patients.

No. 68

Adiponectin Gene Polymorphism and Seasonality in the Old Order Amish

Poster Presenter: Uttam Raheja

Lead Author: Teodor T. Postolache, M.D.

Co-Authors: Naila N. Karim, M.D., Kathleen A. Ryan, M.P.H., M.S., Gagan V. Nijjar, M.D., Alan R. Shuldiner, M.D., Braxton D. Mitchell, Ph.D.

SUMMARY:

Background: Seasonal changes in mammals are considered adaptive physiological capabilities to use temporal cues (e.g., photoperiod) to anticipate rather than purely react to seasonal harsh thermoregulatory demands combined with scarce food availability. We have recently reported that levels of adiponectin—an adipocytokine with anti-inflammatory activity, levels of which are found to be decreased in obesity, diabetes and hypertension, as well as in depression—are lower in Amish individuals with seasonal affective disorder (SAD) than in those without SAD. As an SNP of the adiponectin gene has been previously linked with adiponectin levels, we examined the relationship between the adiponectin SNP rs2241766 and mood seasonality. We also analyzed associations of seasonality with SNPs previously associated with SAD, obesity, BMI, and metabolic syndrome.

Methods: We studied 863 participants (418 men and 445 women, age 56.0 ± 15.3 years) from the Amish Complex Genetic Disease Research Program with both global seasonality scores (GSS), calculated from the Seasonality Pattern Assessment Questionnaires, and 1,000 genome imputation genotype data. TA mixed models were employed to test associations between GSS and “metabolic” SNPs. **Results:** Following adjustment for age, sex and BMI, rs2241766 was associated with GSS ($\beta=0.77$, $SE=0.30$, $p=0.01$). The association of neither rs2241766 nor any other candidate SNP with GSS withstood adjustment for multiple comparisons.

Conclusion: Our findings did not support the hypothesized associations between “metabolic” SNPs and GSS. Longitudinal and interventional approaches will be further used to investigate the adiponectin-seasonality link. In the long run, this may lead to flattening fall/winter increases in food craving, intake and BMI. This study was funded by 1K18MH093940–01. The study was also funded in part by the Mid-Atlantic Nutrition Obesity Research Center Pilot NORC grant P30 DK072488 from NIDDK, NIH.

No. 69

A Gamer’s Dilemma—Can Virtual Games Help Pedophiles Resist Their Urges? A Reveal!

Poster Presenter: Pooja Shah, M.D.

Co-Authors: Stacy J. Dumas, M.D., Smit Shah, M.D., Ramon Solhkhah

SUMMARY:

Pedophilia is a paraphilia defined as a disorder where adults or adolescents 16 years of age or older have intense and recurrent sexual urges toward and fantasies about prepubescent children that they have either acted on or which cause them distress or interpersonal difficulty. Lately, there has been extensive scientific research to detect a possible inheritable cause of pedophilia, which is a strong contributing factor in addition to hormonal imbalance, lower IQ, left handedness, and structural abnormalities in brain imaging. Due to strong national concerns, the legislature has enforced strong rules to protect the children. The stigma associated with it makes it increasingly difficult to come forward and seek treatment for it. A catch-22 situation arises wherein those who attempt to seek treatment are often judged and harassed. Lifelong therapies consisting of CBT and sexological and pharmacological castration are the known treatments for pedophilia. A strategy that aims to prevent the actual event of physical abuse can be looked upon as a possible answer to the dilemma. Incorporating videogames as a tool of virtual sex is a great alternative to allow the release of desire without victimizing any children. For pedophiles resistant to traditional treatment approaches, role playing on computer games serves as a victimless platform to engage in sexual activity with children avatars of their choice. It serves as a good portal for social support from similar individuals in the form of an online community, enabling more people to seek help. Like exposure therapy, videogames might have the potential to give promising results as seen in PTSD, depression and bulimia. It raises concerns as to how reliable it would be and up to what extent will the offenders be able to resist temptation. The biggest concern is to identify what would make a non-acting pedophile different from a real-life sex offender and what would be the rate of switching to active form. The poster highlights the pros and cons

of using virtual games as a tool to prevent real-life child abuse and recent research findings associated with it. With integrated efforts, we can bring an end to childhood victimization until more clinical studies find a possible cure for this disabling neuropsychiatric illness.

No. 70

Blinding, Randomization and Sample Sizes in Experimental Animal Research Published in Leading Psychiatry Journals

Poster Presenter: Heather Hauck

Co-Authors: Janine Hoerauf, Christian Hopfer, Susan Mikulich-Gilbertson, Karsten Bartels

SUMMARY:

Background: Reproducibility of experimental studies is becoming an increasingly discussed problem across all disciplines of medicine, particularly as it impacts the translation of results into clinical applications. Sample size estimates, blinding, and randomization are critical elements to reducing bias and enhancing study rigor and reproducibility. Because of the increasing emphasis on study design rigor—which recently was included as a new requirement for projects proposed to the NIH—we hypothesized that these study design elements would be more frequently reported in research using animal models published in 2015 than in 2005.

Methods: The top ten psychiatry journals, which publish primary research using animal models, were identified based on impact factor. As a first step, PubMed was searched for animal studies published in 2005 and 2015 in the highest impact journal, *Molecular Psychiatry*, and the resulting list was manually searched to identify 10 and 91 studies, which met the predefined criteria, respectively. Each study was then graded using a four-point ordinal rating scale on documentation of sample size estimation, blinding and randomization. Chi-square tests were used to evaluate the number of studies, including each aspect in 2005 compared to 2015. An additional nine journals for 2005 and 2015 will be evaluated using the same method. **Results:** The analyzed metrics of experimental study design rigor were reported as performed (rated “2” [mentioned and performed, but no detail] or “3” [mentioned, performed and details given]) versus not performed (rated “0” [not mentioned] or “1” [mentioned but

not performed]) in 2005 compared to 2015, respectively, for power analysis (0% vs. 23%), blinding (10% vs. 46%) and randomization (40% vs. 42%). Details were given p-values (chi-square with one-sided p) for dichotomized outcome (0 or 1 vs. 2 or 3): 2005 power analysis (10 0 0 0 0.04), 2015 power analysis (65 5 14 7), 2005 blinding (9 0 0 1 0.01), 2015 blinding (46 3 8 34), 2005 randomization (6 0 0 4 0.46), 2015 randomization (50 3 13 25). **Conclusion:** Our preliminary data indicate more studies reporting power analysis and blinding in 2015 compared to 2005. We anticipate that these numbers are likely to change with the analysis of the remaining nine journals. Despite emphasis on increase in scientific rigor in animal experimental science, less than half of studies reported on sample size estimation, blinding or randomization in 2015. Our results, therefore, point to potential improvements for reporting of animal experimental study design in the field of psychiatry. More rigorous requirements for reporting of experimental design may enhance translation of novel basic science findings into relevant improvements to current clinical psychiatric practice.

No. 71

Does Engagement With Inpatient Treatment Predict Subsequent Health Care Utilization? A Study Among U.S. Veterans.

Poster Presenter: Vivek Jayadeva, M.D.

Lead Author: Grace Chang, M.D.

Co-Author: Christoforos Iraklis Giakoumatos, M.D.

SUMMARY:

Background: There is insufficient research about predictors of utilization of mental health services after inpatient psychiatric admissions. We hypothesized that participation in groups during an inpatient stay, as a measure of treatment engagement, would be correlated with the number of outpatient mental health appointments kept in the six months subsequent to hospital discharge.

Methods: Medical records of the first 102 patients admitted to the inpatient psychiatric units of the Veterans Administration Boston Healthcare System in FY 2015 were dually abstracted independently by the first authors. Abstractions were compared, and when there was disagreement, records were reviewed jointly and differences were reconciled.

Descriptive statistics, measures of association with the study outcomes and multivariate models to predict outcomes were calculated. **Results:** We examined 102 male patients with a mean age of 51.3. 38.2% were single, 86.3% Caucasian and 75.5% unemployed with disability benefits. 58.8% had a stable residence, 73.5% had a high school education and 51% had no legal issues. The mean inpatient length of stay was 15.6 days, and patients attended an average of three groups. There was no significant correlation between the number of inpatient groups attended and outpatient appointments kept in the six months after discharge ($p=0.07$). Patients had attended an average of 7.8 appointments during the six months prior to the inpatient admission, which was significantly correlated ($p<0.0001$) with the number of appointments attended over the six months following the hospital stay (average of 9.9 appointments). Patients no-showed an average of 2.2 times during the previous six months, which was significantly correlated ($p<0.0001$) with the number of no shows during the subsequent six months (average of 3.5 no shows). Moreover, patients had a mean of 0.7 inpatient admissions during the previous six months, which was significantly correlated ($p=0.01$) with the number of inpatient admissions six months after discharge (mean of 1.1). Finally, although 81.4% of patients had a substance use disorder (SUD), 18.6% of them received medication-assisted treatment (MAT), a finding that was statistically significant ($p=0.04$). In contrast, a higher proportion of patients with other psychiatric disorders received appropriate medications. **Conclusion:** Patients participated in relatively few groups during their inpatient stay, which was not significantly correlated with the number of outpatient mental health appointments subsequently kept. The pattern of utilization of inpatient and outpatient mental health services prior to an inpatient admission was best correlated with the pattern of utilization of these services following discharge. Potential strategies to increase the impact of inpatient hospitalization include increasing the therapeutic value of inpatient groups by encouraging a minimum of daily participation and evaluating opportunities to increase initiation of MAT for SUDs.

No. 72

Depression and Restless Legs Syndrome

Poster Presenter: Yoon Ju Nam

Co-Authors: Chul-Hyun Cho, Leen Kim, Heon-Jeong Lee

SUMMARY:

Background: Restless legs syndrome (RLS) is a sensory-motor neurological disturbance affecting the quality of sleep and daily lives in 7.5 to 12.1% of the South Korean population. This study investigates the impact on severity of depressive mood symptoms in RLS and characteristic features of poor sleep quality among the Korean cohort population.

Methods: A total of 7,515 participants ranging in age from 40 to 69 years were collected from the Ansong and Ansan cohorts of the Korea Association Resource (KARE) project. Subjects were asked four RLS-related questions based on the diagnostic criteria, and the Korean version of the Beck Depression Inventory (BDI) was used for assessment of depressive mood symptoms. Sleep-related state inquiries like difficulty falling asleep, broken sleep and early morning waking were questioned to investigate insomnia, along with the Epworth Sleepiness Scale (ESS) to evaluate daytime sleepiness. Chi-square test or Fisher's exact test was performed on categorical variables for the investigation of association, and Student's t-test was performed on continuous variables between groups for the investigation of difference. **Results:** 143 and 2,884 subjects were classified to the RLS and non-RLS groups, respectively. Depressive mood was found to be significantly more severe and frequent in the RLS group than the non-RLS group (15.36 ± 14.29 vs. 7.37 ± 6.03 , $p<0.001$). RLS group subjects were subsequently divided into two groups according to the severity of the depressive mood (BDI score of 24). In the severe depression group, comorbid with RLS, insomnia and daytime sleepiness were found at higher risk, suggesting the impact of comorbidity on poor sleep quality (difficulty falling asleep: 61.3% vs. 16.3%, $OR=8.16$, $p<0.001$; broken sleep: 69.4% vs. 16.3%, $OR=11.66$, $p=0.001$; early morning awakening: 54.8% vs. 12.5%, $OR=8.5$, $p<0.001$; ESS total score: 6.77 ± 4.21 vs. 4.95 ± 3.07 , $p=0.005$). **Conclusion:** We found that having RLS symptoms was associated with more severe and frequent depressive mood. Moreover, when severe depression is comorbid with RLS, the risk of insomnia and daytime sleepiness was higher.

No. 73

The Effect of Morningness-Eveningness Type of Shift Working Nurses on Their Sleep Quality, Depressive Symptoms and Occupational Stress

Poster Presenter: Gil Sang James Yoo

Co-Author: Tae Won Kim

SUMMARY:

Objective: The aim of this study is to investigate the effect of morningness-eveningness type of shift working nurses on their sleep quality, depressive symptoms and occupational stress. **Methods:** Data were collected by self-administrating questionnaires by 257 three eight-hour shift system working nurses at St. Vincent's hospital. The questionnaires were composed of baseline demographic data, the Korean version of the Morningness-Eveningness Questionnaire, Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), Beck Depression Inventory, and Korean Occupational Stress Scale. Kruskal-Wallis H-test and analysis of covariance (ANCOVA) were used to find significant difference in sleep parameters, depressive symptoms and occupational stress according morningness-eveningness type. **Results:** There was significant difference in subjective sleep quality score in sleep efficiency ($p=0.018$). Post hoc analysis showed differences between eveningness versus morningness ($p=0.001$) in sleep efficiency. There was tendency in sleep efficiency, PSQI total score and ESS between morningness-eveningness type. However, there was no significant differences in total sleep time, depressive symptoms and occupational stress, including eight subcategories, according to morningness-eveningness type. **Conclusion:** Eveningness type shift working nurses showed lower subjective sleep quality and tendency of poorer sleep efficiency, poorer overall sleep efficiency and more severe daytime sleepiness than other types. However, morningness-eveningness was not a decisive factor for total sleep time, depressive symptoms or occupational stress. Short-term medication, workers' chronotypes consideration and naps before night shift work might be helpful to improve mental health and quality of life for shift-working nurses, especially eveningness type.

No. 74

Does Melatonin Compared to Placebo in Children and Adolescents Reduce Insomnia as Measured by Sleep Onset Latency in Minutes? a Meta-Analysis

Poster Presenter: Coleen Schrepfer, M.D.

Co-Author: Ariel Schonfeld, M.D.

SUMMARY:

Background: Melatonin is a widely used treatment for insomnia in children and adolescents. To date, no randomized controlled trials or meta-analyses have studied the overall efficacy of melatonin to treat insomnia, independent of a specified psychiatric disorder. **Objective:** Perform a systematic review and meta-analysis of published randomized controlled trials in order to evaluate overall effectiveness of melatonin in the treatment of insomnia for subjects two to 20 years old. **Methods:** A systematic review of English-language articles from 1996 to the present was conducted in February 2016 in the PubMed and PsycINFO databases. Bibliographies of relevant articles were cross-referenced. Randomized controlled trials comparing melatonin to placebo for reduction of sleep onset latency, as measured by parent report, were included. Studies with subjects older than 20 or studies failing to report the required data were excluded. Initially, 101 records were captured and thoroughly screened. Ultimately, eight studies met all of the inclusion and exclusion criteria, yielding a total of 454 participants. For each study, average sleep onset latency in minutes at baseline and at the end of the treatment period were extracted for both the placebo and melatonin groups. **Results:** The meta-analysis demonstrated that melatonin significantly reduces sleep onset latency. The standard mean difference of the pooled data was 0.76, with a confidence interval of 0.55 to 0.97. The heterogeneity of the meta-analysis was not significant ($I^2=22.2\%$, $\chi^2=9$ and $p=0.253$). When stratified by underlying diagnoses of attention-deficit/hyperactivity disorder, intellectual disability, autism, and idiopathic sleep onset insomnia, no distinct differences in the effect of melatonin on sleep onset latency were observed. **Conclusion:** Exogenous melatonin significantly reduces sleep onset latency insomnia in children and adolescents ages two to 20.

No. 75

My Patient Can't Sleep: Management of Insomnia on an Inpatient Psychiatric Unit

Poster Presenter: Ekaterina Hossny

Co-Authors: Maria M. Bodic, M.D., Theresa Jacob, Ph.D., M.P.H., Sophie E. Nemzow, Rami Al-Sumairi

SUMMARY:

Background: Insomnia is a common complaint in the general population, with a prevalence of 10 to 40%, significantly higher among patients with mental illness and in stressful conditions such as while admitted to an inpatient psychiatric unit. Greater sleep problem severity was associated with an increased risk of psychiatric hospitalizations and longer length of stay; therefore, assessing for and managing insomnia is of paramount importance for the recovery and well-being of psychiatric patients. Despite the magnitude of the problem, there is little data guiding clinicians in managing insomnia during hospitalizations. In our community mental health center (CMHC), the common pattern was the use of as-needed (PRN) medications, triggered by the nursing staff's requests. This was identified as problematic for the on-call psychiatrist due to increased workload and for the patients as they might not receive individualized treatment for sleep.

Objective: Implement an educational tool and computer order set for insomnia and determine the level of knowledge and comfort in assessing and managing insomnia among psychiatric residents before and after intervention and the potential difference in types of medications ordered (PRN versus routine orders) before and after education.

Methods: This is an IRB-approved quality improvement project. A literature review was conducted using search terms "treatment," "insomnia," "sleep disturbance," and "inpatient psychiatry" to identify best practices for treatment of insomnia. An education tool and computerized order set was developed, including seven medications (diphenhydramine, trazodone, doxepin, temazepam, zolpidem, mirtazapine, and melatonin) with dosages, side effects and contraindications. The residents completed a survey before and after education. The electronic medical record was queried for all medication orders for six months before and after intervention. **Results:** Our data show that 69% of the residents feel burdened when on call by requests for medications for sleep. Ninety-

two percent of them tend to prescribe diphenhydramine as first choice, regardless of the patient characteristics; 59% would alternatively prescribe trazodone and seven percent each melatonin and zolpidem. A third of the residents do not feel comfortable prescribing medications other than diphenhydramine for patients they do not know personally, and only 12.5% claimed they assess insomnia in all of their hospitalized patients. Regarding the actual medication orders, the study period will end in February 2017, at which point final data will be collected and analyzed. **Conclusion:** The level of knowledge and comfort with managing insomnia was low among our residents, which is consistent with other studies. Ongoing education and adaptations to the electronic medical records can help, especially in shifting the task of treating sleep disturbances to the primary treatment teams.

No. 76

Changes in Prescribed Dosage of Hypnotics After Cognitive Behavior Treatment for Insomnia

Poster Presenter: Kyungmee Park

Lead Author: Eun Lee

SUMMARY:

Background: Insomnia is a common but distressful psychiatric condition. Although cognitive behavioral therapy (CBT-i) is a first line option, most doctors prescribe hypnotics or other medications such as antidepressants for patients with insomnia. Insomniacs in South Korea also prefer medication to CBT-i that requires effort. The aim of this study was to evaluate the therapeutic effect of CBT-i on outpatients with insomnia in the general hospital setting. **Methods:** We reviewed electronic medical records that have diagnosed insomnia in the outpatient clinic of the psychiatric department, Severance Hospital, Seoul, South Korea, between January 2009 and December 2014. Forty-one cases (age 20–84, mean age 51.80, 24.3% male) that completed CBT-i were examined with those of 100 age- and sex-matched cases that received pharmacotherapy only. The CBT-i program in our setting consisted of five weekly sessions based on the Edinger's CBT-i protocol. In order to compare the change of prescribed medication for insomnia between the two groups, we evaluated the doctors' prescription for insomnia at the first and the last

visit. We classified medications as hypnotics, antidepressants and other medications and converted each of them into equivalent dosage. Treatment outcome was also evaluated by reviewing doctors' records of clinical global impression (CGI).

Results: Repeated measures analysis of variance during the follow-up showed that the change in prescribed dosage of hypnotics was significantly larger in the CBT-i group ($p < 0.001$). There were no significant differences in antidepressant prescription dosage between the two groups ($p = 0.17$). Treatment outcome assessed by CGI at the last visit showed good results in both groups (80.6% in the CBT-i group, 81% in the control group, $p = 0.17$).

Conclusion: The results suggest that CBT-i has some therapeutic effects in the perspective of reducing hypnotics demand in insomniacs in a general hospital setting.

No. 77

Depression Score Changes and Relationship With Dozing Propensity in Response to Sleep Disordered Breathing Treatment With Positive Airway Pressure

Poster Presenter: Sachin Relia, M.D.

SUMMARY:

Background: The impact of positive airway pressure (PAP) therapy on depressive symptoms in sleep disordered breathing (SDB) suggests results that may be confounded due to improvement in sleepiness. Therefore, we hypothesize that PAP improves core depression symptom scores. **Methods:**

Questionnaire-based Patient Health Questionnaire-2 (PHQ-2) scores of 1,981 patients with SDB who initiated PAP (January 1, 2010 through December 31, 2014) were retrospectively analyzed. Paired and two-sample t-tests were used to evaluate PHQ-2 score changes following PAP initiation and stratification based on PAP adherence (usage greater than four hours nightly more than 70% of the time). Post-PAP PHQ-2 scores were estimated using multivariable regression models, adjusting for the pre-PAP score and including age, gender, race, smoking status, median income, AHI, BMI, and comorbidities (cancer, chronic renal failure, diabetes, depression, coronary artery disease, hypertension, stroke, and atrial fibrillation) as covariates. Interaction between median income and pre-PAP PHQ-2 score was also examined. **Results:**

Mean age was 56.4 ± 13.3 years; 76.2% were Caucasian, and 54.3% were male. 48.4% had history of hypertension (HTN), and 23.5% had a history of depression. PAP therapy (regardless of adherence) resulted in improved PHQ-2 scores (-0.4 ± 1.4 , $p < 0.0001$). Significant change was observed in self-reported adherent (-0.5 ± 1.4) versus nonadherent group (-0.3 ± 1.5 , $p < 0.022$). Furthermore, significant reduction in the percentage of patients with PHQ-2 score over 3 was noted (25.5% vs. 17.3%, $p < 0.001$). Robust improvement was also noted in patients with excessive daytime sleepiness ($ESS > 10$). (-0.6 ± 1.5 vs. -0.2 ± 1.2 , $p < 0.001$). Multivariable regression models demonstrated significant improvement in PHQ-2 scores in patients with history of HTN (-0.17 , $p = 0.007$). Among patients with greater depressive symptom burden, patients from lower income zip codes had worse post-PAP PHQ-2 scores ($p = 0.012$).

Conclusion: PAP therapy and better adherence were associated with improvement in core depressive symptoms as indicated by PHQ-2 score in this clinic-based cohort, not necessarily due to improvement in daytime sleepiness. Lower PHQ-2 score reductions in lower-income patients suggest additional barriers to treatment effectiveness in these groups.

No. 78

Transcranial Direct Current Stimulation for Treatment-Resistant Depression: An Open-Label Study for Eight Weeks

Poster Presenter: Galen Chin-Lun Hung

SUMMARY:

Background: Transcranial direct current stimulation (tDCS) is a noninvasive brain stimulation technique that applies a small direct current to the cerebral cortex, thereby altering the membrane potentials of neurons and changing the rate of spontaneous depolarization. TDCS has yielded promising results in treating major depressive disorder. However, its effect on treatment-resistant depression remains to be determined. **Methods:** This open-label study enrolled 17 patients (12 women) with treatment-resistant unipolar ($N = 12$) or bipolar ($N = 5$) depression. Twelve sessions of tDCS were administered with anode over F3 (International EEG System 10–20) and cathode over F4. Each session delivered a current of 2mA for 20 minutes per 10 working days and at the fourth and sixth week.

Severity of depression was determined by the Montgomery-Åsberg Depression Rating Scale (MADRS); cognitive performance was assessed by a computerized battery (COGSTATE). **Results:** Scores of MADRS at baseline (28.8, SD=11.9) decreased significantly to 20.9 (SD=13.3) ($p=0.030$) at two weeks and 18.8 (SD=10.7) ($p=0.027$) at eight weeks. Regarding cognitive performance, accuracy of paired association improved ($p=0.018$), whereas speed of delayed recall reduced ($p=0.021$). Six (35.3%) participants were therapeutically responsive to tDCS. MADRS scores of responders were significantly lower than those of non-responders at the sixth and eighth weeks. Meanwhile, in non-responders, there were no detectable changes of MADRS throughout the eight weeks. Treatment responsiveness was not predicted by any demographic/clinical characteristics and cognitive performance at baseline. Nonetheless, responders showed better accuracy on working memory tasks ($p=0.047$) at the eighth week. **Conclusion:** tDCS may be a viable option for treatment-resistant depression; identifying predictors of responders may improve its clinical usefulness. Controlled studies with sufficient sample size, optimized montage and the consideration of maintenance sessions are warranted.

No. 79

Efficacy of Repetitive Transcranial Magnetic Stimulation With Concurrent Cognitive Behavior Therapy on Treatment-Resistant Depression

Poster Presenter: Zohaib Haque

Co-Author: Azfar M. Malik

SUMMARY:

Background: Treatment-resistant depression (TRD) is characterized as major depression that has not resolved despite the use of two separate antidepressants and an additional mood stabilizer. Repetitive transcranial magnetic stimulation (rTMS) and Cognitive behavior therapy (CBT) have both proven to be effective in treating TRD; however, no studies have been done outlining their use together or synergistic effects. Post hoc data were analyzed of patients treated with CBT during rTMS therapy versus patients who received only rTMS therapy to ascertain the efficacy of combined therapies on clinical response rates. **Methods:** We retrospectively

reviewed the charts of 100 patients (age 18–65) who had undergone outpatient Neurostar rTMS therapy for TRD at a psychiatric hospital outpatient center. Forty patients received only the 36 sessions of rTMS treatments, while 60 patients received CBT conducted by a licensed therapist during their 36 sessions of rTMS treatment. During the course of their treatment, their progress was tracked using a combination of patient-completed Patient Health Questionnaire-9 (PHQ-9) every five visits and a Montgomery-Åsberg Depression Rating Scale (MADRS) every 10 visits. Response of depressive symptoms to treatment is defined as a greater than or equal to 50% decrease in score in both the PHQ-9 and MADRS, whereas remission of depressive symptoms is defined as a PHQ-9 score less than 5 and MADRS score less than 10. **Results:** This 100-patient analysis consisted of 40 patients treated with only rTMS therapy and 60 patients treated with rTMS and concurrent CBT, both for 36 sessions. MADRS and PHQ-9 at the beginning of treatment for the solo rTMS group were 33.9 and 19.8, respectively. MADRS and PHQ-9 at the beginning of treatment for the dual therapy group were 32.7 and 19.4, respectively. There were no dropouts in either group. The percentage of patients who responded to treatment in the solo rTMS therapy group from the start of treatment to completion was 80.1% and 71.1% by MADRS and PHQ-9, respectively. The percentage of patients who also achieved remission was 46.75% and 44.7% by MADRS and PHQ-9, respectively. End treatment mean MADRS and PHQ-9 scores for the solo rTMS therapy group were 13.3 and 6.7, respectively. Response rates of the concurrent therapy group were 93.3% and 91.6% by MADRS and PHQ-9, respectively. Those who also achieved remission were 83.3% and 83.3% by MADRS and PHQ-9, respectively ($p=0.05$). End treatment mean MADRS and PHQ-9 scores for the dual therapy group were 4.3 and 2.1, respectively. **Conclusion:** In adults with treatment-resistant depression who underwent rTMS therapy with concurrent CBT, the benefits appeared to be synergistic, resulting in higher remission rates of depressive symptoms than those patients treated with only rTMS therapy. Larger studies may be warranted to assess the efficacy of various forms of psychotherapy paired with repetitive transcranial magnetic stimulation.

No. 80

Daily Right Unilateral Ultrabrief Electroconvulsive Therapy (ECT) Improves Depression Faster Than Bitemporal ECT

Poster Presenter: Reem M. A. Shafi

Co-Authors: Simon Kung, M.D., Maria I. Lapid, M.D.

SUMMARY:

Background: Electroconvulsive therapy (ECT) is an effective treatment for severe depression; however, it leads to longer hospital length of stay. We investigated clinical outcomes and duration of treatment for bitemporal (BT) versus right unilateral (RUL) ECT techniques. **Methods:** We performed a retrospective study of 166 psychiatric adult inpatients who received ECT for depression between 2012 and 2016. ECT lead placement and techniques (BT, RUL ultrabrief [RULUB], daily RULUB), number and duration of ECT, and baseline and final Patient Health Questionnaire (PHQ-9) and Hamilton Depression Rating Scale (HAM-D24) were collected. One-way ANOVA and multiple Student's t-tests were used to compare the mean duration of ECT in each group and the clinical variables. **Results:** Mean number and duration (days) of ECT for each group were BT (N=51, 8.2 ECT, 18.1 days), daily RULUB (N=73, 8.7 ECT, 11.6 days) and RULUB (N=16, 8.6 ECT, 18.9 days). In some cases, daily RULUB was switched to BT (N=22, 11.0 ECT, 18.6 days) and RULUB switched to BT (N=3, 11.0 ECT, 26.7 days). Mean duration of treatment was significantly shorter for daily RULUB than BT (11.6 vs. 18.1 days, $p < 0.0001$), although the mean number of ECT sessions required was not significantly different (daily RULUB vs. BT, 8.7 vs. 8.2, $p = 0.2147$). There were no statistically significant differences in the final PHQ-9 or HAM-D scores. **Conclusion:** compared to BT, daily RULUB reduces days of treatment without requiring more treatments. The efficacy was similar. It is a technique that can improve depression faster and can be utilized more.

No. 81

A Randomized Double-Blinded Controlled Trial of Repetitive Transcranial Magnetic Stimulation for Major Depressive Disorder

Poster Presenter: Tingting Zhang

Co-Authors: Yueqin Huang, Yi Jin, Zhaorui Liu, M.D.,

Ph.D., M.P.H.

SUMMARY:

Background: Repetitive transcranial magnetic stimulation (rTMS) has been proven to be safe and effective in treating major depressive disorder (MDD), but the treatment parameters of rTMS are still divergent and need to be optimized further. The aim of study was to compare the efficacy of rTMS in treating MDD with different parameters of stimulating frequency and location and course of treatment. **Methods:** 221 patients with MDD were recruited in the randomized, double-blind, controlled trial. All eligible patients were randomly assigned into four treatment groups: 1) 10Hz in left dorsolateral prefrontal cortex (DLPFC) (N=55); 2) 5Hz in left DLPFC (N=53); 3) 10Hz in bilateral PFC (BLPFC) (N=57); and 4) 5Hz in BLPFC (N=56). The patients received treatment for six weeks and additional six-week optional treatment. The efficacies were evaluated by Hamilton Depression Rating Scale-24 item (HAM-D) and Clinical Global Impressions Scale (CGI). **Results:** The ANOVAs of HAM-D scores up to six weeks and 12 weeks with repeated measure of time showed a significant effect of duration without statistical difference among the four treatment groups and no significance when time was interacted inter-group as well. rTMS on left DLPFC was found to be more effective for insomnia than BLPFC treatments. **Conclusion:** There were no statistical differences in the efficacy of rTMS between DLPFC and BLPFC and between 5Hz and 10Hz for treating MDD.

No. 82

A Study of Metabolic Disturbance in Adolescent Patients With Bipolar Disorder

Poster Presenter: Hanjing Wu

Co-Authors: Luca Lavagnino, Jair Soares, Teresa Pigott, M.D.

SUMMARY:

Background: Obesity and the metabolic syndrome are common in patients with bipolar disorder (BD). Previous studies indicate that metabolic syndrome and BD are intrinsically linked with convergent and bidirectional relationship. The association between early-onset BD and metabolic disturbance is poorly understood due to previous studies usually including

only adult bipolar patients. This study investigates the prevalence of metabolic disturbance in early-onset BD. **Methods:** Metabolic data (BMI, triglyceride [TG] and high-density lipid [HDL] cholesterol, fasting blood sugar [FBS], and systolic and diastolic blood pressure [SBP, DBP]) from 140 children and adolescents (mean age \pm SD=15.1 \pm 1.7 years, 53% males) admitted to an acute psychiatric inpatient unit and meeting *DSM-IV* criteria for a primary diagnosis of BD were examined. Presence of MS was defined by International Diabetes Federation (IDF) criteria and required at least three of the following five components: 1) BMI over the 90th percentile for age and sex; 2) SBP over 130, DBP over 85 or current treatment for hypertension; 3) FBS over 100 or previously diagnosed type 2 diabetes; 4) TG over 150 or current treatment for elevated TG; and/or 5) for those over age 16, HDL cholesterol under 40mg in boys or under 50mg in girls. The pediatric bipolar sample was then compared to a historical control group of age- and sex-matched children and adolescents without BD reported in the NHANES 1999–2000 study. **Results:** The pediatric BP inpatient group was more than twice as likely (14%) to meet criteria for MS in comparison to the historical control group (6.7%) of children and adolescents without BD (adjusted OR=2.33, 95% CI [1.37, 4.0], $p<0.005$). The pediatric BP group (25%) also had twice the risk for a BMI over 90% compared to the control group (11.8%) (adjusted OR=2.49, 95% CI [1.62, 3.82], $p<0.001$), as well as a significantly greater rate of elevated BP (17%) than the control group (8%) (adjusted OR=1.82, 95% CI [1.05, 3.13], $p<0.05$). Although there was no gender difference detected in co-occurrence of MS with BD, the boys with BD (41.4%) were significantly more likely to have an elevated BP than the girls with BD (23.2%) in the current study (adjusted OR=0.24, 95% CI [0.08, 0.69], $p=0.005$). **Conclusion:** Compared with the general adolescent population, the prevalence of MS was significantly higher in adolescent patients with BD. These findings supported that relative risk of metabolic disturbance occurs as early as in adolescent patients with BD. It indicates that an understanding of the effects of abnormal metabolic factors on early-onset BD allows for understanding the development of BD and advancing a more rational, personalized preventive and therapeutic approach for BD.

Tuesday, May 23, 2017

New Research Posters 2

No. 1

Estimation of Tardive Dyskinesia Incidence and Prevalence in the United States

Poster Presenter: Amit Dhir

Co-Authors: Traci Schilling, Victor Abler, Ravi Potluri, Benjamin Carroll

SUMMARY:

Background: Tardive dyskinesia (TD) is a neurological disorder characterized by involuntary movements, which can affect any part of the body and be debilitating. TD results from exposure to dopamine receptor antagonists, particularly typical and atypical antipsychotics. Approximately 20–50% of patients receiving all antipsychotics develop TD, with a lower incidence in patients taking atypical antipsychotics. Despite its widespread prevalence, there is scant literature reporting the epidemiology of TD.

Objective: Estimate the current and expected epidemiology of TD in the United States, stratified by level of severity. **Methods:** A model was created to estimate the incidence and prevalence of TD. TD patients were stratified by level of severity (mild, moderate, severe) and were modeled to receive potential drug treatment, both immediately at diagnosis and after disease progression. Patients were modeled to be impacted by events such as resolution of TD symptoms, cessation of treatment, disease progression, and death. Inputs for the model were sourced from published literature and were obtained from a primary research exercise centered on TD treating physicians. **Results:** The model estimates TD incidence (number of newly diagnosed cases) in 2016 to be 26,000 patients (90% confidence interval [CI] [21,000, 30,000]), translating to an incidence rate of 10.6 per 100,000 U.S. adults. The model then forecasts a gradual increase to 27,000 in 2025, mainly driven by an anticipated increase in the number of patients treated with antipsychotics. Prevalence (number of patients with diagnosed TD) in 2016 was estimated to be 573,000 patients (90% CI [471,000, 674,000], 234 per 100,000 U.S. adults); this translates to nine percent of the general antipsychotic user population. The prevalence

estimates show that 214,000 patients had mild, 176,000 patients had moderate and 183,000 patients had severe TD in 2016. Over time, it is estimated that the number of patients diagnosed with TD will gradually increase, with an estimated 581,000 patients having TD by 2025, of which 188,000 patients will have severe cases. **Conclusion:** This study, which is one of few to attempt a comprehensive modeling-based assessment on the epidemiology of TD in the U.S., confirms that a significant percentage of antipsychotic users are chronically affected with TD. This study also estimates that both the incidence and prevalence of TD in the U.S. will gradually increase to an estimated 27,000 newly diagnosed cases and a total of 581,000 patients with TD by 2025. This study was supported by Teva Pharmaceutical Industries, Petach Tikva, Israel.

No. 2

Symptom Burden Among Self-Reported ADHD Adults in the United States

Poster Presenter: Alexandra Khachatryan, M.P.H.

Lead Author: Lenard A. Adler, M.D.

Co-Authors: Stephen V. Faraone, Ph.D., Edward A. Witt, Ph.D., Phillip Sarocco, R.Ph., M.Sc., Norman Atkins, Ph.D., M.B.A.

SUMMARY:

Background: Adult ADHD is associated with significant impairment in daily activities and interpersonal relationships. It is important to evaluate the scope of ADHD symptom burden in the general adult population due to the challenges of diagnosing and properly managing the disorder. This study estimated the extent of symptom burden in patients self-reporting ADHD from a large, representative sample of U.S. adults. **Methods:** Adults who had previously completed the U.S. National Health and Wellness Survey (NHWS), a large, annual general health survey of adults, were re-contacted during October 2013 to complete an Internet-based follow-up survey with questions related to demographics, health behaviors and psychological comorbidities. They were also administered the Adult ADHD Self-Report Scale (ASRS-v1.1), an 18-item symptom checklist. Each item is scored 0–3 based on a frequency basis of “never” to “very often.” Respondents screened

positive if they endorsed four or more of the first six screening items. Differences between groups were evaluated using chi-square tests and independent samples t-tests for categorical and continuous variables, respectively (significance set at $p < 0.05$). **Results:** A total of 22,397 adults completed the survey, of which 465 (2.1%) reported having been diagnosed with either ADHD or ADD (hereafter “ADHD”). Within this group, 174 (37.4%) reported currently taking a prescription medication to treat ADHD. Compared with those not self-reporting ADHD, respondents who self-reported ADHD were more likely to be male (51.0% vs. 45.5%, $p = 0.019$), be younger (mean years = 41.6 vs. 51.3, $p < 0.001$), and have a higher BMI (mean = 29.6 vs. 28.3, $p < 0.001$) and Charlson Comorbidity Index score (mean = 0.6 vs. 0.4, $p < 0.001$). Respondents reporting ADHD were also more likely to report diagnoses of depression (58.1% vs. 18.0%, $p < 0.001$), anxiety (53.1% vs. 16.0%, $p < 0.001$) and sleep difficulties (37.0% vs. 14.0%, $p < 0.001$). Those who reported being treated for ADHD had a slightly lower BMI on average (mean = 28.6 vs. 30.1, $p = 0.04$) and were more likely to report diagnoses of depression (68.4% vs. 51.9%, $p < 0.001$), anxiety (67.2% vs. 44.7%, $p < 0.001$), panic disorder (25.9% vs. 17.2%, $p = 0.025$), and insomnia (27.6% vs. 19.6%, $p = 0.046$) than those reporting no prescription treatment of ADHD. A total of 36.6% ($N = 170$) of ADHD respondents and 44.3% ($N = 77$) of treated ADHD respondents screened positive on the ASRS. ADHD respondents scored significantly higher on all 18 items of the ASRS relative to non-ADHD respondents (mean difference = 0.75–1.18, $p < 0.05$), whereas those reporting treatment scored significantly higher on six items (mean difference = 0.91–1.20, $p < 0.05$) compared to those reporting no treatment of ADHD. **Discussion:** These findings suggest a high symptom burden in adults who report having been diagnosed with ADHD, especially in those who report being untreated.

No. 3

U.S. Normative Data for the Adult ADHD Self-Report Scale (ASRS-V1.1)

Poster Presenter: Alexandra Khachatryan, M.P.H.

Co-Authors: Lenard A. Adler, M.D., Stephen V. Faraone, Ph.D., Edward A. Witt, Ph.D., Phillip Sarocco, R.Ph., M.Sc.

SUMMARY:

Background: The Adult ADHD Self-Report Scale (ASRS-v1.1) is a tool developed for use by health care professionals and patients to assess symptoms most predictive of attention deficit disorder (ADHD). Although the ASRS has been well established in clinical practice, normative data for the U.S. are not yet available to allow comparisons between a population and an individual's impairment with symptoms of ADHD. This study estimated norms for the ASRS from a large, representative sample of U.S. adults. **Methods:** U.S. adults who already participated in the National Health and Wellness Survey (NHWS) were recruited to participate in this study. The NHWS is a large, general health survey of adults (18 years or older) conducted annually in the U.S. (approximately 75,000 respondents annually). During October of 2013, NHWS respondents were re-contacted and completed the Adult ADHD Self-Report Scale (ASRS-v1.1), an 18-item symptom checklist. Each item is scored 0–3 based on a frequency basis of “never” to “very often.” Total scores on the 18 items (range=0–18) were estimated separately by age, gender, Hispanic origin, and race/ethnicity, and a full factorial multiple regression model was used to test for interactions among these characteristics. Statistical significance was tested at $p < 0.05$. **Results:** A total of 22,397 adults completed the survey. On average, the sample was 51.1 years old ($SD=15.8$), female (54.4%), White (82.7%; 8.9% Black; 8.5% other), and identified as non-Hispanic (93.7%; 5.9% Hispanic; 0.4% declined to answer). The average ASRS score for the full sample was 2.0 ($SD=3.2$). ASRS mean total scores were tested for differences at the bivariate level and revealed significant differences for age (18–29 years=3.0; 30–39 years=2.6; 40–49 years=2.3; 50–64 years=1.8; 65 years or older=1.2; $p < 0.001$), gender (male=1.9; female=2.1; $p < 0.001$), Hispanic origin (Hispanic=2.8; non-Hispanic=2.0; $p < 0.001$), and race (White=2.0; Black=2.2; other=2.5; $p < 0.001$). **Discussion:** The findings from this large population-based sample suggest that self-reported scores on the ASRS vary significantly by demographics. Therefore, it may not only be necessary to consider absolute scores on the ASRS but to also consider these demographic characteristics when screening patients in the future. Normative data generated for the ASRS in this study will allow comparisons with individual

scores to better support the screening of ADHD symptoms among adults.

No. 4**Psychotic Episode in a Patient With Corpus Callosum Lipoma: A Case Report and Review of Literature**

Poster Presenter: Antonio L. Nascimento, M.D., M.Sc.

SUMMARY:

Background: Intracranial lipomas are very rare; since the original description of these tumors in 1856, approximately 200 cases have been reported. These tumors account for 0.46 to 1.00% of all intracranial tumors. Almost 50% of the patients with corpus callosum lipomas (CCL) are asymptomatic, but the others may present epilepsy, headaches, vomiting, hemiplegia, intellectual developmental disorders, and psychotic symptoms. Due to the importance of the corpus callosum (CC) in interhemispheric communication, some authors propose that tumors in this region may cause schizophrenia-like symptoms. **Case:** A 33-year-old woman was hospitalized after an episode of agitation and aggressiveness. She had a past history of headache and no previous history of psychiatric symptoms. On admission, she complained of hearing voices commenting on several aspects of her life and also claimed that she could communicate with God. She was treated with risperidone 2mg per day and presented a full remission of her psychotic symptoms in less than a week. A thorough clinical and laboratory examination revealed no abnormalities; however, a brain MRI revealed an elongated formation with adipose tissue density at the corpus callosum splenium, diagnosed as a lipoma. During follow-up, she interrupted risperidone usage, complaining of somnolence, which lead to a relapse of psychotic symptoms. Olanzapine 2.5mg per day was prescribed, and once again, psychotic symptoms remitted. She has not developed cognitive deficits or other negative symptoms after the psychotic episode. **Results:** PubMed database was searched with the terms “corpus callosum lipoma” or “lipoma of the corpus callosum” combined with “psychiatric,” “psychotic,” “schizophrenia,” or “mental.” Three articles describing patients with CCL and psychotic symptoms have been found using this search

strategy. Another article described that in an investigation of 140 patients with the diagnosis of schizophrenia, two had partial agenesis of the corpus callosum and one had a CCL, which represented a higher prevalence of corpus callosum abnormalities in patients with schizophrenia than in the general population. **Discussion:** We described the case of a 33-year-old woman with no previous psychiatric symptoms who presented psychotic symptoms and achieved full remission of this episode within a week of treatment with antipsychotics. A CCL was found during her investigation. This lesion has been associated with psychotic symptoms and even schizophrenia-like syndromes in the literature. CCL are more prevalent in patients with schizophrenia than in the general population, and due to the importance of this structure in interhemispheric communication, lesions in the CC might present clinical significance in the genesis of psychotic symptoms. **Conclusion:** Further studies are needed in order to investigate the role of the corpus callosum in schizophrenia and the prevalence of psychotic symptoms in patients with intracranial lipomas.

No. 5

The Effect of Deutetrabenazine (DTB) on Individual Components of the Total Abnormal Involuntary Movement Scale (AIMS) in ARM-TD

Poster Presenter: Hubert H. Fernandez, M.D.

Co-Authors: Stewart A. Factor, Joohi Jimenez-Shahed, William G. Ondo, Mat D. Davis, David Stamler, Robert A. Hauser, Karen E. Anderson, M.D.

SUMMARY:

Background: Tardive dyskinesia (TD), an involuntary movement disorder that results from exposure to dopamine-receptor antagonists, is often irreversible. The first seven components of the AIMS score, which assesses abnormal movements in different regions of the body, such as facial and oral, extremity, and trunk, are scored 0–4 (0=normal, 1=minimal/extreme normal, 2=mild, 3=moderate, 4=severe). In ARM-TD, a randomized, double-blind, placebo (PBO)-controlled trial, DTB significantly reduced overall AIMS in patients with moderate/severe TD compared with PBO (-3.0 vs. -1.6, $p=0.0188$). **Objective:** Analyze the effect of DTB on specific areas of the body affected in TD using the

individual components of the AIMS score assessed in ARM-TD. **Methods:** Patients were randomized (1:1) to 12 weeks of treatment with DTB or PBO. AIMS score was assessed by blinded central video rating. Treatment effect of DTB (compared with PBO) in each body part was assessed in three ways: 1) improvement in each item from baseline to week 12; 2) percentage of patients with a two-point reduction in each region; and 3) percentage of patients with improvement to “minimal/extreme normal” (AIMS=1) by week 12. **Results:** Analysis of the individual components indicated that treatment with DTB was associated with an improvement in six out of seven AIMS components. Areas most improved by treatment were the jaw (DTB: -0.77, PBO: -0.18; treatment difference=-0.59, 95% confidence interval [CI] [-0.89, -0.29]) and lips/perioral area (-0.58, -0.22; treatment difference=-0.36, 95% CI [-0.70, -0.025]). Other improved areas included tongue (treatment difference=-0.23, 95% CI [-0.57, 0.12]); upper extremities (treatment difference=-0.23, 95% CI [-0.50, 0.03]); neck, shoulders and hips (treatment difference=-0.18, 95% CI [-0.48, 0.13]); and lower extremities (treatment difference=-0.09, 95% CI [-0.37, 0.19]). In addition, patients treated with DTB compared to PBO had a higher odds ratio (OR>1) of a two-point improvement in the lips/perioral area (25%, 6.5%; OR=4.8), jaw (25%, 0%; OR=8), tongue (19.4%, 11.8%; OR=1.8), and neck, shoulders and hips (30.0%, 8.3%; OR=4.7). Finally, DTB treatment provided more than twice the odds (OR>2) of reducing abnormal involuntary movements to “minimal/extreme normal” in the lips/perioral area (50.0%, 32.3%; OR=2.1) and the jaw (40.6%, 21.7%; OR=2.5). A similar improvement was also noted in the tongue (41.9%, 29.4%; OR=1.7), upper extremities (50.0%, 33.3%; OR=2.0), and neck, shoulders and hips (50.0%, 41.7%; OR=1.4). **Conclusion:** DTB was associated with a reduction in abnormal, involuntary movements in six out of seven individual AIMS score components, including the extremities, trunk and most parts of the head. Improvement was not observed in muscles of facial expression.

No. 6

Improvements in Clinical Global Impression of Change With Deutetrabenazine Treatment in Tardive Dyskinesia From the ARM-TD and AIM-TD

Studies

Poster Presenter: Hubert H. Fernandez, M.D.

Co-Authors: David Stamler, Mat D. Davis, Stewart A. Factor, Robert A. Hauser, Jouko Isojarvi, L. Fredrik Jarskog, Joohi Jimenez-Shahed, Rajeev Kumar, Stanislaw Ochudlo, William G. Ondo, Karen E. Anderson, M.D.

SUMMARY:

Background: Tardive dyskinesia (TD) is an involuntary movement disorder that is often irreversible and can affect any body region. In the ARM-TD and AIM-TD studies, deutetrabenazine (DTB) treatment demonstrated statistically and clinically significant reductions in Abnormal Involuntary Movement Scale (AIMS) scores at week 12 compared with placebo (primary endpoint). The Clinical Global Impression of Change (CGIC) is a seven-point Likert scale ranging from “very much worse” to “very much improved” that provides an overall assessment of treatment response, providing insight into a clinician’s view on the change in the patient’s TD symptoms as well as the occurrence of side effects. **Objective:** Evaluate the efficacy of DTB, as measured by CGIC, in patients with TD from the pooled ARM-TD and AIM-TD (24 and 36mg per day doses) data sets as compared with the pooled placebo cohort. **Methods:** ARM-TD and AIM-TD were 12-week, randomized, double-blind, placebo-controlled studies that evaluated the safety and efficacy of DTB for the treatment of TD. Patients had baseline AIMS scores of 6. Change in AIMS score from baseline to week 12 was the primary endpoint of both studies. The key secondary endpoint of each study was the proportion of patients “much improved” or “very much improved” (treatment success) at week 12 on the CGIC. **Results:** At week 12, the odds of treatment success (“much improved” or “very much improved”) among patients treated with DTB (N=152) was more than double that of patients treated with placebo (N=107; odds ratio [OR]=2.12; p=0.005). In a shift analysis of all CGIC ratings, patients treated with DTB had greater improvement as assessed by clinicians than that observed with placebo (p=0.003). In addition, the mean CGIC score was significantly more improved in patients treated with DTB than in those treated with placebo at week 12 (treatment difference=-0.4; p=0.006). **Conclusion:** DTB treatment led to

statistically and clinically significant improvements in TD symptoms based on CGIC results. These results suggest that a global assessment of patients’ clinical status may be useful to assess DTB therapy in clinical practice. This study was supported by Teva Pharmaceutical Industries, Petach Tikva, Israel.

No. 7

Evaluation of Patient-Reported Outcomes in Tardive Dyskinesia Patients With Underlying Psychotic and Mood Disorders in the ARM-TD and AIM-TD Trials

Poster Presenter: Hubert H. Fernandez, M.D.

Co-Authors: David Stamler, Mat D. Davis, Stewart A. Factor, Robert A. Hauser, Jouko Isojarvi, L. Fredrik Jarskog, Joohi Jimenez-Shahed, Rajeev Kumar, Stanislaw Ochudlo, William G. Ondo, Karen E. Anderson, M.D.

SUMMARY:

Background: In tardive dyskinesia (TD), patients’ perception of benefit can be assessed with patient-reported outcome measures such as the Patient Global Impression of Change (PGIC), a seven-point Likert scale used in clinical trials of various conditions. Patients with TD often have underlying psychiatric illnesses, such as psychotic (schizophrenia and schizoaffective disorder) or mood disorders (depression and bipolar disorder). The PGIC may not be an optimal assessment for patients with psychotic disorders due to commonly associated lack of awareness of their condition and cognitive impairment, which can lead to impaired recognition of symptoms. However, it can still provide important information on the perception of benefit in patients with TD and mood disorders. **Objective:** Assess patients’ impression of treatment benefit from deutetrabenazine (DTB) for the treatment of TD. **Methods:** Pooled results from the two 12-week trials, ARM-TD and AIM-TD (24 and 36mg per day doses), are presented. PGIC ratings at each visit were analyzed using the Cochran-Mantel-Haenszel Test. Results were stratified by baseline comorbidities: psychotic disorders (schizophrenia/schizoaffective disorder) and mood disorders (bipolar disorder/depression/other). Treatment success was defined as “much improved” or “very much improved” at week 12. **Results:** 161 patients (DTB, N=93; placebo [PBO], N=68) had a

psychotic disorder; among these, 38 (41%) were “much improved” or “very much improved” at week 12 with DTB treatment, compared with 22 (32%) given PBO ($p=0.379$). Of the 97 patients with a mood disorder (DTB, $N=59$; PBO, $N=38$), 28 (47%) DTB patients were “much improved” or “very much improved,” compared with 10 (26%) PBO patients ($p=0.003$). Patients in this group were almost three times as likely to report treatment success with DTB compared with PBO (odds ratio [OR]=2.8). DTB was generally well tolerated in both studies. **Conclusion:** TD patients with underlying mood disorders were more likely to perceive treatment success with DTB than PBO. These results corroborate clinicians’ perception of improvement in TD symptoms, as assessed by the Clinical Global Impression of Change, and add to the overall knowledge of DTB’s efficacy. This study was supported by Teva Pharmaceutical Industries, Petach Tikva, Israel.

No. 8

Evaluating Fixed-Dose Deutetrabenazine for the Treatment of Moderate to Severe Tardive Dyskinesia in the AIM-TD Study

Poster Presenter: Karen E. Anderson, M.D.

Co-Authors: Stewart A. Factor, Joohi Jimenez-Shahed, William G. Ondo, Mat D. Davis, David Stamler, Robert A. Hauser, Hubert H. Fernandez, M.D.

SUMMARY:

Background: Tardive dyskinesia (TD), an often irreversible movement disorder with no currently approved treatments, is characterized by abnormal, involuntary movements that can affect any part of the body. In the completed phase 2/3 ARM-TD trial, deutetrabenazine (DTB), a selective vesicular monoamine transporter 2 inhibitor, was titrated to adequate dyskinesia control or until the drug became intolerable in patients with moderate/severe disease. This study met its primary endpoint: reduction in Abnormal Involuntary Movement Scale (AIMS) scores in patients treated with DTB compared with those given placebo (-3.0 vs. -1.6, $p=0.019$) and was generally well tolerated. The ongoing phase 3 AIM-TD trial evaluates DTB at fixed doses in a similar patient population as ARM-TD. **Objective:** Discuss the study design of AIM-TD, which evaluates the efficacy, safety and tolerability of fixed-dose DTB compared with placebo in

moderate/severe TD patients (NCT02291861).

Methods: In AIM-TD, approximately 288 patients with moderate/severe TD were to be randomized at baseline in a 1:1:1:1 ratio to receive one of three fixed-dose regimens of DTB (12mg per day, 24mg per day, 36mg per day) or placebo. As in the ARM-TD study, patients enrolled in AIM-TD had to have an AIMS score of 6 at screening and baseline, which was confirmed by blinded central video rating at screening. Patients underwent dose escalation during the initial four weeks to their randomized fixed dose of DTB or placebo. This was followed by an eight-week maintenance period and a one-week washout. The efficacy and safety endpoints of AIM-TD are similar to those assessed in ARM-TD. The primary endpoint is the change in AIMS score from baseline to week 12 as assessed by blinded central video rating. Secondary endpoints include treatment success on the Clinical Global Impression of Change and the Patient Global Impression of Change, change in the modified Craniocervical Dystonia Questionnaire, percent change in AIMS, and a display of the cumulative responder rate by percent improvement. **Results:** AIM-TD recruitment began in October 2014. The study randomized 298 patients and will be completed in 2016. **Conclusion:** Fixed-dose regimens of DTB may facilitate dose titration and decrease dyskinesia in patients with moderate/severe TD compared with placebo in AIM-TD. In addition to the results of the completed ARM-TD study, AIM-TD results may provide corroborative evidence of the overall safety and efficacy of deutetrabenazine for the treatment of TD. This study was supported by Teva Pharmaceutical Industries, Petach Tikva, Israel.

No. 9

Deutetrabenazine for the Treatment of Tardive Dyskinesia: Results From an Open-Label, Long-Term Study

Poster Presenter: Karen E. Anderson, M.D.

Co-Authors: David Stamler, Mat D. Davis, Stewart A. Factor, Robert A. Hauser, Jouko Isojarvi, L. Fredrik Jarskog, Joohi Jimenez-Shahed, Rajeev Kumar, Stanislaw Ochudlo, William G. Ondo, Hubert H. Fernandez, M.D.

SUMMARY:

Background: Tardive dyskinesia (TD) is an

involuntary movement disorder resulting from exposure to dopamine receptor antagonists. In the 12-week ARM-TD and AIM-TD studies, deutetrabenazine (DTB) demonstrated statistically and clinically significant improvements in Abnormal Involuntary Movement Scale (AIMS) scores at week 12 compared with placebo and was generally well tolerated. Given the often irreversible nature of TD, there is a significant unmet need for a treatment that is efficacious and well tolerated over the long term, while allowing the maintenance of concomitant treatment regimens for underlying psychiatric comorbidities. **Objective:** Evaluate the efficacy and safety of long-term DTB therapy in patients with TD. **Methods:** Patients with moderate to severe TD who completed the ARM-TD or AIM-TD studies were eligible to enter this open-label, single-arm, long-term safety study after they completed the one-week washout period and final evaluation in the blinded portion of the trial. The study period comprised a six-week titration period and a long-term maintenance phase of up to 104 weeks. Patients began DTB at 12mg per day, titrating up to a maximum total daily dose of 48mg per day based on dyskinesia control and tolerability. Efficacy endpoints included the change in AIMS score (items 1–7) from baseline and treatment success (defined as “much improved” or “very much improved”) on the Clinical Global Impression of Change (CGIC) and Patient Global Impression of Change (PGIC). This interim analysis reports results up to week 54. **Results:** Of 304 patients enrolled in the extension study, 202 previously received DTB and 102 previously received placebo. As of the cutoff date for interim analysis (June 30, 2016), the mean (standard error) change in AIMS score was -5.1 (0.52) for all patients, -5.4 (0.69) for patients who previously received DTB and -4.6 (0.77) for patients previously given placebo. After six weeks of DTB treatment, the proportion of patients who achieved treatment success was 58% per the CGIC and 53% per the PGIC and by week 54 was 72% per the CGIC and 59% per the PGIC, thus demonstrating maintenance or enhancement of benefit over time. DTB was well tolerated for up to 54 weeks, and compared with the ARM-TD and AIM-TD studies, no new safety signals were detected. **Conclusion:** DTB treatment demonstrated improvement in AIMS score up to 54 weeks in patients with TD, regardless of prior

therapy with DTB or placebo. Investigators and patients both indicated clinically significant global improvement in the severity of TD at week 6 and after long-term treatment with DTB. DTB was well tolerated regardless of prior therapy with DTB or placebo in the parent studies. This study was supported by Teva Pharmaceutical Industries, Petach Tikva, Israel.

No. 10

Long-Term Safety of Deutetrabenazine for the Treatment of Tardive Dyskinesia: Results From an Open-Label, Long-Term Study

Poster Presenter: Karen E. Anderson, M.D.

Co-Authors: David Stamler, Mat D. Davis, Stewart A. Factor, Robert A. Hauser, Jouko Isojarvi, L. Fredrik Jarskog, Joohi Jimenez-Shahed, Rajeev Kumar, Stanislaw Ochudlo, William G. Ondo, Hubert H. Fernandez, M.D.

SUMMARY:

Background: In the 12-week ARM-TD and AIM-TD studies, deutetrabenazine (DTB) showed clinically significant improvements in Abnormal Involuntary Movement Scale (AIMS) scores at week 12 compared with placebo (PBO) and was generally well tolerated. Given the often irreversible nature of tardive dyskinesia (TD), there is a significant unmet need for a treatment that is well tolerated over an extended period and can be administered while allowing the maintenance of concomitant treatment for underlying psychiatric comorbidities. **Objective:** Evaluate the long-term safety/tolerability and efficacy of DTB in patients with TD; week 54 open-label results are reported in this interim analysis.

Methods: Patients with moderate to severe TD who completed ARM-TD or AIM-TD were included in this open-label, single-arm extension study in which all patients restarted/started DTB 12mg per day, titrating up to a maximum total daily dose of 48mg per day based on dyskinesia control and tolerability. The study comprised a six-week titration period and a long-term maintenance phase of up to 104 weeks. Safety measures included incidence of adverse events (AEs), serious AEs (SAEs), drug-related AEs, and AEs leading to withdrawal, dose reduction or dose suspension. **Results:** Of 304 patients enrolled, 202 had previously received DTB and 102 received PBO. As of the cutoff date, June 30, 2016, patients

had clinically significant improvements in AIMS scores (-5.1 points) and Clinical Global Impression of Change (72% “much improved” or “very much improved”). Exposure-adjusted incidence rates (EAIRs) of AEs (incidence/patient-years) were similar between patients previously treated with DTB (2.04) or PBO (1.74). The most common AEs (by EAIR) were similar between DTB and PBO: anxiety (0.12), somnolence (0.11), depression (0.11), headache (0.10), diarrhea (0.08), and nasopharyngitis (0.08). Neuropsychiatric AE rates were low and similar between prior treatment groups, and more than 90% were mild to moderate in severity. SAEs were experienced by 29 patients (EAIR: 0.14); three SAEs were considered possibly related to DTB (stress urinary incontinence, intentional overdose, suicide attempt). Discontinuations (EAIR: 0.08 [18/212.4]), dose reductions (EAIR: 0.17 [33/194.3]), and dose suspensions (EAIR: 0.09 [19/204.7]) due to AEs were uncommon. **Conclusion:** DTB was generally safe and well tolerated for up to 54 weeks in patients with TD, with low rates of neuropsychiatric AEs. This study was supported by Teva Pharmaceutical Industries, Petach Tikva, Israel.

No. 11

Effect of Deutetrabenazine on Quality of Life in Patients With Tardive Dyskinesia in AIM-TD: A 12-Week Double-Blind, Placebo-Controlled Study

Poster Presenter: Karen E. Anderson, M.D.

Co-Authors: David Stamler, Mat D. Davis, Stewart A. Factor, Robert A. Hauser, Jouko Isojarvi, L. Fredrik Jarskog, Joohi Jimenez-Shahed, Rajeev Kumar, Stanislaw Ochudlo, William G. Ondo, Hubert H. Fernandez, M.D.

SUMMARY:

Background: Tardive dyskinesia (TD) is an abnormal involuntary movement disorder that can be debilitating, add to the stigma of a psychiatric disorder and negatively impact quality of life (QoL) for patients already stigmatized by mental illness. The Craniocervical Dystonia Questionnaire (CDQ-24) is a QoL questionnaire developed and validated for use in patients with craniocervical dystonia. Some of the domains evaluated in CDQ-24, including activities of daily living (ADLs), pain, emotional well-being, social/family life, and stigma, are relevant to TD. In the AIM-TD study, 11 items of the CDQ-24

relevant to the impact of TD were assessed.

Response options for each item on the questionnaire include never, occasionally, sometimes, often, or always; a reduction in score indicates improvement.

Objective: Assess the effect of deutetrabenazine (DTB) on QoL of patients with TD as measured by the modified Craniocervical Dystonia Questionnaire (mCDQ-24). **Methods:** Patients with moderate to severe TD were randomized 1:1:1 to receive one of three fixed-dose regimens of DTB (12mg per day, 24mg per day or 36mg per day) or placebo (PBO). Change in mCDQ-24 score from baseline to week 12 was analyzed using an analysis of covariance model adjusted for treatment, concomitant dopamine receptor antagonist use and baseline mCDQ-24 score. **Results:** At baseline, the mean (standard error) mCDQ-24 scores were similar between patients taking 36mg per day (N=55; 36.4 [2.46]), 24mg per day (N=49; 36.5 [2.89]), 12mg per day (N=60; 38.6 [2.71]), and PBO (N=58; 41.2 [2.59]). At week 12, there was a clinically meaningful least-squares mean treatment difference comparing 36mg per day (-4.4, p=0.123) and 24mg per day (-3.5, p=0.242) with PBO. The 12mg per day dose did not show improvements over PBO. Four of five mCDQ-24 subdomains evaluated improved with DTB 36mg per day compared with PBO at week 12 (ADL: -11.8 vs. -6.8; pain: -15.5 vs. -6.1; social: -10.5 vs. -3.6; stigma: -13.3 vs. -9.9). DTB 24mg per day also improved pain (-15.2 vs. -6.1) and stigma (-17.8 vs. -9.9) subdomains compared with PBO. Emotional well-being did not improve with treatment. DTB was generally well tolerated. **Conclusion:** The mCDQ-24 was used to evaluate QoL in patients with TD. Treatment with DTB 36mg per day improved most subdomains of the mCDQ-24. Improvements in key subdomains such as pain and stigma were seen with both 24 and 36mg per day doses. This study was supported by Teva Pharmaceutical Industries, Petach Tikva, Israel.

No. 12

Pimavanserin for the Treatment of Parkinson's Disease Psychosis: Number Needed to Treat, Number Needed to Harm, and Likelihood to Be Helped or Harmed

Poster Presenter: Leslie Citrome, M.D., M.P.H.

Co-Authors: James Norton, Ph.D., Kathy Chi-Burris, M.P.H., George Demos, M.D.

SUMMARY:

Background: Pimavanserin is a highly selective serotonin 5-HT_{2A} receptor antagonist/inverse agonist indicated for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis (PDP). This study reviewed the evidence base for PIM for the treatment of PDP using the metrics of evidence-based medicine—namely number needed to treat (NNT), number needed to harm (NNH), and likelihood to be helped or harmed (LHH)—in order to better place this intervention into clinical perspective. **Methods:** Efficacy outcomes of clinical interest include response with pimavanserin 34mg per day (PIM), as taken from the pivotal six-week registrational trial of PIM vs. placebo using two definitions of response: 1) Scale for the Assessment of Positive Symptoms in Parkinson's Disease (SAPS-PD) total score decrease of three points from baseline and 2) Clinical Global Impressions-Improvement scale (CGI-I) score of 1 (very much improved) or 2 (much improved). Also examined was remission as defined by reduction of 100% from baseline on the SAPS-PD. Tolerability outcomes of clinical interest, occurring at any time in available studies of PIM were assessed, including discontinuation because of an adverse event (AE). NNT and NNH, with respective 95% confidence intervals, for PIM vs. placebo were calculated, as well as LHH. **Results:** At week 6, responders, as defined by SAPS-PD three-point reduction, were observed in 62 of 95 (65%) subjects receiving PIM vs. 38 of 90 (42%) for placebo, for an NNT vs. placebo of five (95% CI [3, 12]). Using the CGI-I, responders were observed in 43 of 95 (45%) for PIM vs. 22 of 90 (24%) for placebo, yielding an NNT vs. placebo of five (95% CI [3, 14]). Remission was observed in 13 of 95 (14%) subjects receiving PIM vs. one of 90 (1%) for placebo, for an NNT vs. placebo of eight (95% CI [5, 19]). For PIM as pooled from available studies, the most common AEs (as defined by a rate of five percent and twice that for placebo) were peripheral edema, as observed in 14 of 202 (7%) for PIM vs. five of 231 (2%) for placebo, for an NNH of 21 (95% CI [12, 127]), and confusional state, seen in 12 of 202 (6%) for PIM vs. six of 231 (3%) for placebo, for an NNH of 30 (not statistically significant). The discontinuation rate due to an AE was 16 of 202 (8%) for PIM vs. 10 of 231 (4%) for placebo, yielding an

NNH of 28 (not statistically significant). LHH for response versus an AE of peripheral edema, confusional state or discontinuation because of an AE were 4.2, 6.0 and 5.6, respectively. LHH for remission versus an AE of peripheral edema, confusional state or discontinuation because of an AE were 2.6, 3.8 and 3.5, respectively. **Conclusion:** In terms of LHH, PIM 34mg per day is approximately six times more likely to result in clinical response rather than discontinuation due to an AE. The data analyzed in this study are limited to dichotomous outcomes. The results may not be generalizable to patients outside the confines of a clinical trial.

No. 13

Moderation of the Relationship Between *T. gondii* Seropositivity and Impulsivity in Younger Men by the Phenylalanine-Tyrosine Ratio

Poster Presenter: Xiaoping Peng, M.D., Ph.D.

Co-Authors: Dietmar Fuchs, Ph.D., Lisa Brenner, Ph.D., Ashwin Jacob Mathai, Nadine Postolache, Maureen W. Groer, Ph.D., Ina Giegling, Lena Brundin, John W. Stiller, M.D., Christopher A. Lowry, Ph.D., Dan Rujescu, Teodor T. Postolache, M.D.

SUMMARY:

Background: We previously reported that *Toxoplasma gondii* seropositivity is associated with higher impulsive sensation seeking in younger men. As dopaminergic and serotonergic signaling regulate impulsivity, and as *T. gondii* directly and indirectly affects dopaminergic signaling and induces activation of the kynurenine pathway, leading to diversion of tryptophan from serotonin production, we investigated if dopamine and serotonin precursors or the tryptophan metabolite kynurenine interact with *T. gondii*-impulsivity association.

Methods: In 951 psychiatrically healthy participants, trait impulsivity scores were related to *T. gondii* IgG seropositivity, which were intersected with categorized levels of phenylalanine (Phe), tyrosine (Tyr), Phe:Tyr ratio, kynurenine (Kyn), tryptophan (Trp), and Kyn:Trp ratio in interaction with age and gender. **Results:** Only younger *T. gondii*-positive men with a high Phe:Tyr ratio had significantly higher impulsivity scores ($p < 0.01$). There were no significant associations in other demographic groups, including older men and younger or older women. No significant effects or interactions were identified for

Phe, Tyr, Kyn, Trp, and their ratios. **Conclusion:** Phe:Tyr ratio plays a moderating role in the association between *T. gondii* seropositivity and impulsivity in younger males. These results could potentially lead to individualized approaches to reduce impulsivity based on demographic, biochemical and serological factors. This may have benefits for the fields of violence, addiction and risk-taking behavior. This work was supported by a Distinguished Investigator Award from the American Foundation for Suicide Prevention (DIG 1-162-12, PI Postolache, co PI Rujescu) and the University of Maryland, Joint Institute for Food Safety and Applied Nutrition, College Park, MD, through the cooperative agreement FDU.001418 (PI Postolache).

No. 14

Can an Online Curriculum on Parkinson's Disease Psychosis Improve Physician Awareness?

Poster Presenter: Jovana Lubarda, Ph.D.

Co-Authors: Kelly Hanley, Gena Dolson

SUMMARY:

Objective: Evaluate effects of an online continuing medical education (CME) curriculum on knowledge and competence of physicians managing Parkinson's disease psychosis (PDP). **Methods:** Psychiatrists and neurologists participated in one or more of five online CME activities, in multiple formats, on PDP topics including epidemiology, pathophysiology, diagnosis, and current and new management strategies. Formats consisted of an in-depth text-based monograph, two expert video panel discussions, an expert-led video lecture, and a conference highlights collection. The effect of each CME activity was assessed separately through online surveys comparing each participant's responses to four identical pre- and post-CME questions for each activity. Questions from the five CME activities were analyzed by themes in PDP. Paired two-tailed t-tests were used to assess whether the mean post-CME assessment scores were different from the mean pre-CME assessment scores. McNemar's chi-squared statistic was used to determine differences from pre- to post-CME assessment. P values were calculated as a measure of significance; P values less than 0.05 are statistically significant. Effect size was calculated using Cramer's V by determining the change in proportion of participants who answered questions

correctly from pre- to post-CME assessment. Effect sizes of less than 0.06 are negligible, 0.06–0.15 is small, 0.16–0.30 is medium, and over 0.30 is large. The activities launched online between May 27, 2015, and March 25, 2016, and data were collected for 342 days. **Results:** Both psychiatrists and neurologists demonstrated improved knowledge and competence following participation in the educational curriculum on PDP in the following areas. On the theme of pathophysiology and epidemiology, on pre-CME assessment, 44% of psychiatrists on average answered correctly, improving to 70% after education (N=2,415; p<0.05; V=0.26), and 49% of neurologists answered correctly before education, improving to 74% after education (N=1,427; p<0.05; V=0.26). On the theme of strategies used for management of PDP prior to approved therapies, on pre-CME assessment an average of 64% of psychiatrists answered correctly, improving to 76% after education (N=4,190; p<0.05; V=0.13), and 69% of neurologists answered correctly before education, improving to 83% after education (N=1,394; p<0.05; V=0.16). On the theme of knowledge of clinical data and mechanisms of action of new therapies for PDP, on pre-CME assessment, an average of 25% of psychiatrists answered correctly, improving to 61% after education (N=2,314; p<0.05; V=0.36), and 41% of neurologists answered correctly before education, improving to 69% after education (N=623; p<0.05; V=0.28). **Conclusion:** An online CME curriculum on various themes in PDP can lead to improvements in knowledge and competence of psychiatrists and neurologists.

No. 15

Examining Sociocultural Perceptions of MDD Symptoms Through Online Education

Poster Presenter: Jovana Lubarda, Ph.D.

Co-Authors: Susan Grady, Richard O'Hara, Teresa Marshall

SUMMARY:

Background: Little is known about the sociocultural perception of mental illness. This study sought to examine whether differences in understanding of major depressive disorder (MDD) were present in an ethnically diverse audience of online learners engaged in disease-specific education and whether

improvements in understanding occurred following the education. **Methods:** Two educational activities, in a text-based format with graphics, on MDD symptoms and side effects of treatments were hosted on WebMD Education, a website dedicated to patient education. Activities included demographic questions such as ethnicity, age and a pre-/post-activity assessment question to measure the impact of education on knowledge. A Chi-square test of independence was used to determine if a statistically significant improvement (five percent significance level, $p < 0.05$) existed in the number of correct responses. Cramer's V was used to estimate the magnitude of change in the total number of correct responses between the compared test scores. The patient activities were launched on September 29, 2015, and data were collected through July 1, 2016. **Results:** Across both activities, the following differences and improvements in knowledge across ethnicities were seen in recognizing symptoms of MDD, side effects and options for therapy if an antidepressant is not working. White non-Hispanic patients improved knowledge from 76% (N=2906) to 83% (N=1982) ($p < 0.05$; $V = 0.08$), and these patients answered correctly at a significantly higher rate than other groups ($p < 0.05$). Asian patients improved knowledge from 59% (N=360) to 73% (N=221) ($p < 0.05$; $V = 0.15$); however, this group answered incorrectly at a significantly higher rate than other ethnic groups ($p < 0.5$). African-American patients improved knowledge from 65% (N=40) to 76% (N=28) ($p < 0.05$; $V = 0.12$). Indian patients improved knowledge from 53% (N=69) to 76% (N=43) ($p < 0.05$; $V = 0.21$). Hispanic/Latino patients improved knowledge from 67% (N=150) to 75% (N=101) ($p = 0.286$; $V = 0.06$). **Conclusion:** Participation in online patient education led to significant improvements in knowledge of MDD symptoms, side effects and treatments for most ethnicities examined, with the greatest educational effects observed in Asian and African-American patients. Analysis of results demonstrated a need for additional disease-specific education for all groups, with the greatest needs being the in Asian and Hispanic/Latino populations. This research represents an important step toward informing culturally specific needs for patient education in mood disorders in an effort to support improved

self-management, enhanced shared decision making and better patient outcomes.

No. 16

Safety and Tolerability of Open-Label Cariprazine as Adjunctive Therapy in Major Depressive Disorder

Poster Presenter: Eduard Vieta, M.D., Ph.D.

Co-Authors: Willie Earley, Maria V. Burgess, Suresh Durgam, Changzheng Chen, István Laszlovszky, György Németh

SUMMARY:

Background: Lack of response to treatment is a critical problem in the management of patients with major depressive disorder (MDD). Up to half of all patients fail to achieve adequate response with antidepressant therapy (ADT), and successive treatment failures often lead to patients who are less likely to respond to subsequent treatment or are more likely to relapse if they do respond. Cariprazine, an orally active atypical antipsychotic with dopamine D3/D2 receptor partial agonism and high affinity for D3 receptors, is currently under investigation for use as adjunctive therapy to ADT in the treatment of MDD. **Methods:** This was a phase 3 multicenter, open-label, long-term, flexible-dose safety study in adult patients with a primary diagnosis of MDD (NCT01838876). Eligible patients either completed a previous phase 3 randomized, double-blind, placebo-controlled lead-in study of cariprazine plus ADT (NCT01715805) or were new patients who had failed to respond to one or two adequate ADT treatment trials and had ongoing inadequate response to ADT. Patients received open-label cariprazine (1.5–4.5mg per day) plus ADT for up to 26 weeks. Outcome measures included safety and tolerability as measured by adverse events (AEs), clinical laboratory and vital sign parameters, ophthalmological and physical examination, measures of extrapyramidal symptoms, and suicidality. Efficacy assessments, including the Montgomery-Åsberg Depression Rating Scale (MADRS) and the Clinical Global Impression-Severity (CGI-S), were collected but not grouped into primary, secondary or additional categories. **Results:** A total of 345 patients received study medication; 209 patients completed the study. The most common reasons for discontinuation were AEs (48 patients [13.9%]) and protocol violation (32 patients

[9.3%]). Treatment-emergent AEs (TEAEs) were reported in 79.4% of patients; 13.9% discontinued due to AEs. The only TEAEs that occurred in 10% of patients or more were akathisia (15.9%) and headache (11.6%). Serious AEs occurred in seven patients (2.0%); two deaths (judged unrelated to treatment) occurred during the study (one traffic accident; one completed suicide). Mean changes in clinical laboratory, cardiovascular and ophthalmological parameters were generally small and not clinically significant. Mean changes from open-label baseline in MADRS total score and CGI-S score at week 26 were -7.3 (SD=9.5) and -1.0 (SD=1.2), respectively. By week 26, 112 of 210 (53.3%) patients were in remission (MADRS total score of 10 or less). **Conclusion:** Cariprazine was generally safe and well tolerated when used as adjunctive therapy in the treatment of MDD. This research was supported by Forest Research Institute, Inc., an Allergan affiliate, and Gedeon Richter Plc.

No. 17

The Knowledge of Depression MCQ Test (KDMCQ): Evidence for Predictive Validity

Poster Presenter: Adel Gabriel

SUMMARY:

Objective: Examine changes in depression knowledge as a result of depression psychoeducation and reassess the psychometric properties of the “Knowledge of Depression MCQ” (KDMCQ) test, with emphasis on predictive validity. **Methods:** Seventy patients with confirmed diagnosis of major depression were randomly assigned to an intervention group (N=40) or to a standard care group (N=30). The intervention group received systematic education consisting of reading material and individual or group educational sessions. The primary outcome measure included changes in the KDMCQ score. All patients were treated with SSRI or SNRI antidepressants. The Clinician and Self-Rated Quick Inventories of Depressive Symptomatology (QIDS-C and QIDS-SR) and the Work and Social Adjustment Scale (WASA) were used to assess clinical outcomes of depression. **Results:** Both groups significantly improved in symptoms and in depression knowledge. However, there were significant differences ($p < 0.001$) between the two groups in the KDMCQ test scores and in the QIDS-CR

scores at four, eight and 12 weeks. There were inverse correlations between the QIDS-CR scores and KDMCQ scores in both groups over time. The reliability measures (Chronbach’s alpha), the convergent validity and predictive validity are examined over time. **Conclusion:** Results suggest that systematized education may lead to significant improvement of depression knowledge and is associated with reduction in clinical symptoms. The significant association between improved knowledge and the improvement in depressive symptoms among patients who received psychoeducation supports an evidence for predictive validity of the KDMCQ test.

No. 18

Risk of Hospital Readmission in MDD: Associations With Obesity, Borderline Personality Disorder and Posttraumatic Stress Disorder

Poster Presenter: Julia Golden, B.A.

Co-Authors: John W. Goethe, M.D., Stephen Woolley, D.Sc.

SUMMARY:

Background: In patients with major depressive disorder (MDD), obesity has been associated with slower clinical response and readmission (RA). Co-diagnoses of borderline personality disorder (BPD) and posttraumatic stress disorder (PTSD) have also been found to be associated with unfavorable outcomes in MDD. Few studies to date, however, have investigated the combined influence of obesity and these co-diagnoses on risk of RA among MDD patients, and none has examined RA within multiple time intervals to determine potential differences in associations by time. The present study examined a large sample of inpatients to assess the impact of obesity, BPD and PTSD, as well as the interactions of these variables, on risk of RA. **Methods:** The sample was 5,568 unduplicated inpatients ages 18–64 with a primary *DSM-IV* clinical diagnosis of MDD discharged between Q1 2005 and Q3 2015. Logistic regression analyses, controlling for demographics, substance abuse and psychotic features, examined risk of RA associated with obesity (BMI=30), BPD and PTSD, as well as with combinations of these three independent variables (assessed at $\alpha = 0.05$). The referent in all regressions was MDD without obesity, BPD or PTSD. RA was examined within each of four

time intervals: 15, 30, 90, and 180 days after discharge from index hospitalization. **Results:** The proportion of patients with obesity was 26.7%, with PTSD was 14.4% and with BPD was 10.7%. The RA rates at 15, 30, 90, and 180 days were 18.6%, 14.3%, 8.3%, and 5.3%, respectively. Increased RA risk within all time intervals was significantly associated with 1) BPD without either obesity or PTSD (ORs=1.63–1.84); 2) BPD and obesity without PTSD (ORs=1.92–3.10); and 3) BPD with PTSD and obesity (ORs=3.78–4.65). Unexpected was that obesity without either BPD or PTSD was not significantly associated with increased risk of RA in any time interval. Patients with PTSD and obesity without BPD, as well as those with PTSD and BPD without obesity, were not at significantly increased risk of RA within any time interval. **Conclusion:** Within six months, obese MDD patients with BPD were at 68.5% greater risk of RA than non-obese patients with BPD, and obese patients with BPD and PTSD were at 42.3% greater risk than those with obesity and BPD alone. Although other studies have reported that obesity in MDD is associated with poor outcomes, results of the current study suggest that obesity is only a risk factor for RA when co-occurring with BPD or with the combination of BPD and PTSD. These results indicate that obese MDD patients with comorbid BPD may be at increased risk of RA and may represent a subset of patients with greater risk of relapse, recurrence and/or nonadherence. Further study is needed.

No. 19

Prevalence, Cost of Care and Treatment Patterns for Major Depressive Disorder-Related Hospitalizations

Poster Presenter: Kenneth Kramer, Ph.D.

Co-Authors: Sanjida Ali, Pamela B. Landsman-Blumberg, Marla Kugel

SUMMARY:

Background: In addition to being a serious public health problem, major depressive disorder (MDD) is the most common primary diagnosis among psychiatric hospitalizations. These hospitalizations are a significant burden on health care systems, patients and their families. However, there is limited information about the current duration and costs associated with MDD hospitalization and whether

the presence of suicidal ideation or suicide attempt affects these measures. **Methods:** An analysis of the Premier Perspective[®] Hospital Database was conducted using records of hospital admission for MDD on any date from January 1, 2014, to December 31, 2015. Hospitalizations had to have an admission diagnosis of single-episode MDD (International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM] diagnosis code 296.2 or 10th Revision [ICD-10-CM] code F32) or recurrent-episode MDD (ICD-9-CM 296.3, ICD-10-CM F33). The presence of codes ICD-9-CM (V62.84) or ICD-10-CM (T14.91, X71.0XXA–X83.8XXS, Z91.5) defined suicidal ideation; codes ICD-9-CM (E950–E959) or ICD-10-CM (R45.851) defined suicide attempt. Length of hospital stay, cost of stay, intensive care unit (ICU) stay, attending physician specialty, and discharge status were analyzed. **Results:** Of all hospital admissions during this period (N=12,608,691), 1.1% (N=136,704) were for MDD. Among MDD encounters, 53.7% had suicidal ideation (N=73,365) and 6.1% (N=8,374) had a suicide attempt. The percent of MDD stays requiring ICU bed days was 2.4% (no ideation/attempt, 1.6%; ideation, 2.7%; attempt, 4.6%). Nearly 90% of stays included dispensing of one or more major antidepressant therapies, with 63.6% of stays including a serotonin-norepinephrine reuptake inhibitor (SNRI), 58.5% a selective serotonin reuptake inhibitor (SSRI), and 44.1% an atypical antipsychotic (AAP). The mean length of hospital stay for all MDD encounters was six days (no ideation/attempt, 6.3 days; ideation, 5.9 days; attempt, 5.8 days); the mean cost per stay was \$6,582 (no ideation/attempt, \$6,863; ideation, \$6,340; attempt, \$6,861). In approximately 90% of MDD hospitalizations, regardless of suicide-related status, the attending physician was a psychiatrist, and the patient was discharged to home or self-care. **Conclusion:** MDD-related hospitalizations are numerous and costly to health care systems. Medications that are currently used to treat MDD in the hospital setting (e.g., SSRI, SNRI, AAP) take four to six weeks to reach maximum effect. In general, there is an unmet medical need for medications with a faster onset of action that may allow for shorter hospitalizations and lower costs. Such medications may be especially beneficial to patients with MDD

who are hospitalized due to suicidal ideation or attempt. This research was supported by Allergan.

No. 20

A Cross-Sectional Study of Major Depressive Disorder in Chifeng City of Inner Mongolia Autonomous Region in China

Poster Presenter: Guohua Li

Co-Authors: Lili Shang, Yueqin Huang

SUMMARY:

Background: Chifeng is the largest population city of the Inner Mongolia Autonomous Region in China, but no epidemiological characteristics of major depressive disorders are available. **Methods:** A representative face-to-face household survey was conducted in 2011 using the Composite International Diagnostic Interview-3.0 computer-assisted personal interview (CIDI-3.0-CAPI), which is used to make diagnoses based on the criteria and definition of the *DSM-IV*. A total of 4,528 respondents age 18 and over were interviewed. The response rate was 71%.

Results: The weighted lifetime prevalence of major depressive disorder (MDD) was 4.4% for lifetime and 1.7% for 12 months. The correlates for lifetime and 12-month MDD cases include being female and older age. Major depression was significantly comorbid with anxiety disorders. **Conclusion:** The findings show a lower prevalence rate of MDD in Chifeng City of China. It is necessary to pay attention to comorbidity of MDD and anxiety disorder, especially in women and older people.

No. 21

Impact of Antidepressant Medication Adherence on Health-Related Quality of Life Among Older Adults With Newly Diagnosed Major Depressive Disorder

Poster Presenter: Lara A. Trevino, Ph.D., M.P.H.

Co-Authors: Tristan Cordier, M.P.H., Andrew Renda, M.D., M.P.H., Dana P. Gresky, Ph.D., Matthew Ruble, M.D.

SUMMARY:

Background: The impact of adherence to antidepressant medications on health-related quality of life (HRQoL) in major depressive disorder (MDD) is not well understood. **Objective:** Examine the impact of adherence to antidepressant medications on self-reported HRQoL in an elderly Medicare Advantage

(MA) cohort newly diagnosed with MDD. **Methods:** A cross-sectional, stratified random sample of individuals from a large national insurer was surveyed from June 1, 2015, to December 31, 2015 using the Centers for Disease Control and Prevention Healthy Days core module, which contains four questions that ask about a person's perceived physical and mental health. Survey respondents age 65 with MA coverage meeting Healthcare Effectiveness Data and Information Set criteria for acute treatment antidepressant medication management were identified. The index date was defined as the first antidepressant prescription claim from May 1, 2014, to April 30, 2015. Patients had to be continuously enrolled for 105 days before and 231 days after the index date, with no MDD diagnosis or antidepressant use in the pre-index period. Adherence was defined as 84 continuous days of antidepressant use in the 114 days immediately following the index date (allowed 30-day gap). Multiple linear regression estimated mean (95% CI) differences in physically (PUHD), mentally (MUHD) and total unhealthy days (UHD, sum of PUHD and MUHD, capped at 30 days) attributable to AM adherence adjusted for age, gender, race, geographic region, dual Medicare/Medicaid status, disability status, premium costs, Charlson Comorbidity Index, number of additional behavioral health diagnoses, behavioral health specialist visits, and use of psychotherapy in treatment. **Results:** Of the 196,512 eligible survey respondents, 1,983 met analysis criteria (mean age 74.2, 72.3% female, 87.8% Caucasian). After adjustment, patients adherent to antidepressants (N=1,441, 72.7%) reported 3.6 fewer MUHD ($p<0.001$, 95% CI [-5.3, -1.8]) and 5.0 fewer total UHD ($p=0.001$, 95% CI [-7.8, -2.2]) than patients not adherent (N=542, 27.3%). No significant differences in PUHD were observed. **Conclusion:** Elderly, newly diagnosed patients with MDD who adhered to antidepressant regimens reported higher HRQoL than those who were nonadherent. Future studies should examine the impact of antidepressant adherence and HRQoL among patients with chronic depression.

No. 22

The Effects of Brexpiprazole on Sexual Dysfunction in Major Depressive Disorder: Results of Three Randomized, Placebo-Controlled Studies

Poster Presenter: Mary Hobart

Co-Authors: Peter Zhang, Emmanuelle Weiller, Catherine Weiss

SUMMARY:

Background: Brexpiprazole is a serotonin-dopamine activity modulator that acts as a partial agonist at serotonin 5-HT_{1A} and dopamine D₂ receptors and an antagonist at serotonin 5-HT_{2A} and noradrenaline α _{1B/2C} receptors, all with similar potency. Brexpiprazole is approved in the U.S. for the treatment of schizophrenia, including maintenance treatment, and as an adjunctive therapy to antidepressants for the treatment of major depressive disorder (MDD). Antipsychotics are associated with sexual dysfunction, arising, in part, due to raised prolactin levels resulting from D₂ receptor blockade. This analysis considers the effects of brexpiprazole on sexual dysfunction using data from Pyxis (NCT01360645), Polaris (NCT01360632) and Sirius (NCT02196506)-three phase 3 studies of brexpiprazole as adjunct to antidepressant treatment (ADT) in MDD. **Methods:** Pyxis, Polaris and Sirius had similar designs. Adults with a current episode of MDD in which they had experienced inadequate response to one or more ADTs were treated prospectively for eight weeks with open-label ADT plus adjunctive single-blind placebo. Patients with inadequate response to prospective ADT were randomized in a double-blind fashion to continue on ADT plus placebo or to receive ADT plus brexpiprazole (2mg per day in Pyxis and Sirius; 1 or 3mg per day in Polaris) for six weeks. Sexual dysfunction was measured using the patient-reported Massachusetts General Hospital Sexual Functioning Questionnaire (MSFQ) and by the reporting of sexual treatment-emergent adverse events (TEAEs). **Results:** Pyxis, Polaris and Sirius randomized 379, 677 and 394 patients, respectively. Patient sexual functioning improved with ADT plus brexpiprazole from randomization to last visit in all three studies, as shown by a reduction in score for MSFQ overall sexual satisfaction and on all five MSFQ items. Across studies, the least squares mean changes from baseline to last visit with adjunctive brexpiprazole were -0.27 to -0.46 for overall sexual satisfaction, -0.25 to -0.46 for "interest in sex," -0.36 to -0.42 for "sexually aroused," -0.24 to -0.34 for "achieve orgasm," and -0.15 to -0.38 for "maintain

erection." The number of TEAEs relating to sexual function was low during the randomized phase of each study: six (2mg per day) and one (placebo) events in Pyxis; one (1mg per day), three (3mg per day) and one (placebo) events in Polaris; and two (2mg per day) and one (placebo) events in Sirius. No TEAEs relating to sexual function led to discontinuation in Polaris or Sirius; one patient in Pyxis discontinued due to anorgasmia that began during prospective ADT plus placebo. **Conclusion:** No safety or tolerability concerns relating to sexual dysfunction were observed across the three studies.

No. 23

Relapse Prevention With Levomilnacipran ER in Adults With Major Depressive Disorder: A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study

Poster Presenter: Suresh Durgam

Co-Authors: Changzheng Chen, Raffaele Migliore, Prakash Chandran, Michael E. Thase, M.D.

SUMMARY:

Background: Levomilnacipran extended release (LVM-ER) is a serotonin and norepinephrine reuptake inhibitor approved for the treatment of major depressive disorder (MDD) in adults. The efficacy and safety of LVM-ER has been evaluated in five randomized, double-blind, placebo-controlled trials and one long-term open-label study. This withdrawal study was designed to evaluate the efficacy, safety and tolerability of LVM-ER in the prevention of relapse in patients with MDD.

Methods: Patients in this study received 20 weeks of open-label treatment with LVM-ER 40, 80 or 120mg per day (eight weeks of flexible-dose treatment followed by 12 weeks of stable dosing). Patients with a Montgomery-Åsberg Depression Rating Scale (MADRS) total score of 12 or less from week 8 through week 20 of the open-label period were eligible to enter the 26-week randomized, double-blind, placebo-controlled withdrawal period. Patients were randomized to LVM-ER (continued at the same dosage) or placebo. The primary efficacy endpoint was time to first relapse, defined as a MADRS total score of 18 or more or insufficient therapeutic response (at least a two-point increase in Clinical Global Impressions-Severity score, suicide risk, or worsening of depression requiring

medication switch or hospitalization). Standard safety assessments were applied, including adverse event (AE) reporting. **Results:** In the double-blind intent-to-treat population (placebo, N=159; LVM-ER, N=165), patients who continued receiving LVM-ER had a significantly longer time to relapse ($p<0.05$) and lower risk of relapse than patients who were switched to placebo (hazard ratio=0.56; 95% CI [0.33, 0.92]). Crude relapse rates were 14.5% and 24.5% in the LVM-ER and placebo groups, respectively. Based on Kaplan-Meier estimates, approximately 25% of patients in the placebo group relapsed by day 168; the corresponding estimate for LVM-ER was not available due to the low relapse rate in this group. The incidence of treatment-emergent AEs (TEAEs) during the double-blind period was 58.8% in the LVM-ER group and 56.0% in the placebo group. TEAEs that occurred in five percent or more of LVM-ER-treated patients and at a higher incidence than placebo were headache (10.3% vs. 7.5%), upper respiratory tract infection (9.7% vs. 6.3%), nausea (7.9% vs. 3.1%), and nasopharyngitis (6.7% vs. 4.4%). Discontinuation due to AEs occurred in less than five percent of patients (LVM-ER, 3.0%; placebo, 1.3%); serious AEs occurred in less than two percent of patients (LVM-ER, 1.2%; placebo, 0.6%). **Conclusion:** Among patients who responded to acute phase therapy with LVM-ER (40–120mg per day), continuation phase therapy was both well tolerated and significantly reduced the risk of relapse. This research was supported by Forest Research Institute, Inc., an Allergan affiliate.

No. 24

Health Care Costs and Treatment Patterns Among Patients With Treatment-Resistant Depression

Poster Presenter: Tony Amos, Pharm.D., M.S.

Co-Authors: Neeta Tandon, M.A., Patrick Lefebvre, M.A., Dominic Pilon, M.A., Rhiannon L. Kamstra, M.Sc., Irina Pivneva, Ph.D., Paul E. Greenberg, M.S., M.A.

SUMMARY:

Background: Despite the availability of multiple treatment options, initial lines of therapy may fail to provide remission in patients with major depressive disorder (MDD). Treatment-resistant depression (TRD) occurs in patients with MDD who have not achieved remission after at least two lines of

antidepressant therapy (AD). TRD carries a substantial economic burden estimated at \$29–48B annually in the U.S., with the burden of TRD potentially varying within the TRD population based on the level of treatment resistance. **Objective:** Assess health care costs and treatment patterns among patients with TRD. **Methods:** Adults diagnosed with MDD (ICD-9-CM: 296.2–296.3) between January 2010 and March 2015 were selected from a large U.S. claims database of commercially insured patients. Using a claims-based algorithm, TRD patients were required to have changed their treatment regimen at least twice at an adequate dosage and duration (six weeks or less). Change of treatment regimen was defined as a switch to a new AD or augmentation therapy occurring no more than 180 days after the end of the previous treatment. Patients were required to be 18–64 years old with no diagnosis of psychosis, schizophrenia, bipolar disorder/manic depression, or dementia. The index date was defined as the date of the first AD pharmacy claim on or after January 2010, with no AD claims in the previous six months (baseline period). Treatment patterns up to two years after index and per patient per year (PPPY) all-cause mental health- and depression-related health care costs up to two years after TRD were evaluated. **Results:** Among 39,479 treated MDD patients, 6,411 (16%) patients met the criteria for TRD. The majority of TRD patients were female (64%), with a mean age of 40.5 years. The most common AD classes were selective serotonin reuptake inhibitors (87%), norepinephrine-dopamine reuptake inhibitors (53%) and serotonin-norepinephrine reuptake inhibitors (49%), with a median of three unique ADs. In addition, most TRD patients received other psychiatric medications (91%) such as anxiolytics (69%), anticonvulsants (37%) and antipsychotics (31%). During the two years following index, 41% of patients had six or more treatment regimen changes (AD/augmentation therapy). After TRD, mean all-cause health care costs were \$16,563 (SD=\$42,663), largely (77%) attributed to medical costs (e.g., outpatient [\$6,760] and inpatient costs [\$4,079]). Mental health- and depression-related costs accounted for 30% and 17% of all-cause costs, respectively. All-cause health care costs also increased monotonically with the number of treatment regimen changes (e.g., patients with two

regimen changes had a mean PPPY cost of \$12,047, while patients with six or more regimen changes had a mean PPPY cost of \$18,667). **Conclusion:** TRD presents a significant treatment and economic burden, with the latter increasing with the number of treatment regimen changes.

No. 25

A Randomized Controlled Trial of Mindfulness-Based Cognitive Therapy for Youth Living With Inflammatory Bowel Disease and Depression

Poster Presenter: Tatjana Ewais, M.D.

Co-Author: Jakob Begun, M.D.

SUMMARY:

Background: Individuals with inflammatory bowel disease (IBD) have triple the rate of mental disorders than the general population, and youth with IBD have higher rates of depression than youth with any other chronic illness. Mindfulness-based cognitive therapy (MBCT) is an evidence-based group program for treatment of depression that also holds promise in reducing systemic inflammation, normalizing gut microbiome and modulating brain neuronal connectivity. **Objective:** Conduct a randomized control trial (RCT) exploring the benefits of MBCT for youth with IBD and depression. Primary outcome measure will be depression scores in the Depression, Anxiety and Stress Scale (DASS). Secondary outcome measures will explore the impact of the mindfulness intervention on IBD inflammatory markers, gut microbiome and functional neuronal connectivity.

Methods: IBD patients aged 16–25 will be recruited via the IBD outpatient services at Mater Young Adult Health Centre. After completing the DASS, participants will be randomly allocated to either treatment as usual or an intervention group who will receive the MBCT. **Results:** The study has secured funding and is currently in the recruitment stage, with preliminary results expected in May 2017.

Conclusion: This will be the first RCT exploring the beneficial impact of MBCT on depression concurrent with measuring its impact on inflammation underlying both depression and IBD, gut microbiome and functional neuroimaging changes. This study therefore holds promise to further elucidate the nature of interactions between depression, inflammation, microbiome, and neuroconnectivity

and support novel therapeutic interventions targeting them.

No. 26

Psychosocial Intervention for Paternal Depression in Karachi, Pakistan

Poster Presenter: Tayyeba Kiran

Co-Authors: Nusrat Husain, M.D., Nasir Mehmood, Afshan Qureshi, Farah Lunat, Imran Bashir Chaudhry, M.D.

SUMMARY:

Background: Up to 10.4% of fathers are depressed during the perinatal period. Paternal depression is associated with internalizing and externalizing difficulties in the offspring and also with father-child conflicts. There are some reports of parenting interventions with fathers in the developed world, but such programs are rare in low- and middle-income countries. **Objective:** We adapted a group psychosocial intervention (Learning through Play Plus—LTP Plus) for the Pakistani population with the aim to explore whether fathers with depression will engage with proposed intervention and whether the proposed intervention will lead to reduction in symptoms of depression. **Methods:** This was a pre-post experiment design. Fathers with children aged zero to 30 months were screened with the Edinburgh Postnatal Depression Scale (EPDS). The Clinical Interview Schedule Revised (CISR) was administered to confirm the diagnosis of depression. A total 23 fathers completed baseline assessment, which included the Hamilton Depression Rating Scale (HAM-D), Multidimensional Scale of Perceived Social Support (MSPSS), Euro-Qol Quality of Life Scale (EQ-5D), and Parenting Stress Index (PSI). Twelve sessions of LTP Plus were offered during the period of three months. **Results:** The group psychosocial intervention was acceptable to depressed fathers, and all participants attended at least seven of the total 10 sessions of LTP Plus. Results also show reduction in mean score on the HAM-D from baseline to three-month follow-up (MD=4.20, $p<0.00$). Mean score on the MSPSS improved significantly from baseline to three-month follow-up (MD=22.10, $p<0.00$). Mean score on the PSI reduced significantly from baseline to three-month follow-up (MD=20.07, $p<0.01$). Health-related quality of life also improved at three months (MD=19.50, $p<0.00$).

Conclusion: The results show that it is possible to engage with dads in a psychosocial intervention, which has the potential to improve not only paternal depression and stress but possibly child outcomes.

No. 27

Brexipiprazole as Adjunctive Treatment in Elderly Patients With Major Depressive Disorder: An Open-Label, Long-Term, Flexible-Dose Study

Poster Presenter: Ulla Lepola

Co-Authors: Nanco Hefting, Doris Zhang, Mary Hobart

SUMMARY:

Background: Brexipiprazole is a serotonin-dopamine activity modulator that is a partial agonist at 5-HT_{1A} and dopamine D₂ receptors and an antagonist at 5-HT_{2A} and noradrenaline α 1B/2C receptors, all at similar potency. Brexipiprazole was approved in 2015 in the U.S. for the treatment of schizophrenia and for use as adjunctive treatment in major depressive disorder (MDD). This study (NCT02400346) evaluated the long-term safety and tolerability, and the therapeutic effect, of brexipiprazole (1–3mg per day), as adjunct treatment to antidepressant treatment (ADT) in elderly patients with MDD.

Methods: Elderly patients (65 or older) with MDD and inadequate response to one or more ADTs received open-label, flexible-dose brexipiprazole (1–3mg per day) adjunctive to their current ADT for 26 weeks, including a four-week titration period. Safety and tolerability assessments included adverse events (AEs), clinical safety laboratory tests, vital signs, weight/body mass index, extrapyramidal symptom (EPS) scales (Abnormal Involuntary Movement Scale [AIMS], modified Simpson Angus Scale [mSAS], Barnes Akathisia Rating Scale [BARS]), and electrocardiograms [ECGs]). Efficacy was assessed by mean change from baseline (using MMRM with 95% confidence interval) in Montgomery-Åsberg Depression Rating Scale (MADRS), Clinical Global Impression–Severity Scale (CGI-S) and Social Adaptation Self-Evaluation Scale (SASS). **Results:** 132 patients were treated, and 88 (66.7%) completed the 26-week study. Main reasons for withdrawal were AEs (18.2%) and lack of efficacy (6.8%). The mean age was 71.4 years with 26.5% being 75 or older; 81.1% were women. Mean baseline MADRS total score and CGI-S score were 26.9 and 4.3,

respectively. The mean dose of brexipiprazole was 1.8mg per day. 102 patients (77.3%) had treatment-emergent AEs (TEAEs); TEAEs with the highest incidences were fatigue (15.2%), restlessness (12.9%) and increased appetite (9.8%), followed by akathisia, increased weight, anxiety, and dizziness (all approximately 8%). The most common TEAE leading to withdrawal was fatigue (3.0%). No clinically relevant patterns were seen in mean changes in clinical safety laboratory values, vital signs, weight, EPS scales, or ECG values. Mean weight gain at week 26 was 0.9kg; 12.3% of patients had a weight increase of seven percent or more at any time during the study.

No. 28

Clinical Characteristics of Haenyeo (Korean Professional Women Breath-Hold Divers) With Depressive Disorders

Poster Presenter: Hyun-ju Yang

SUMMARY:

Background: Haenyeo are Korean professional women breath-hold divers in Jeju island. The aim of this study was to investigate the clinical characteristics of a depressed Haenyeo group, compared to a non-Haenyeo depressed group.

Methods: This study included 75 Haenyeo and 340 non-Haenyeo with depressive disorders recruited from the Dementia Early Detection Program in Jeju island. Structural diagnostic interviews were performed using the Korean version of the Mini International Neuropsychiatric Interview. All patients completed the questionnaires, including the Subjective Memory Complaints Questionnaire (SMCQ), the Patient Health Questionnaire-15 (PHQ-15) and the Blessed Dementia Scale. Depression was evaluated by the Korean version of the short form the Geriatric Depression Scale (K-SGDS), and cognition was assessed by the Korean version of the Consortium to Establish a Registry for Alzheimer's Disease (CERAD) assessment packet. **Results:** Although the mean scores of the K-SGDS were similar between Haenyeo and non-Haenyeo depressed groups, the Haenyeo group showed a higher mean score on the PSQ-15 ($p < 0.001$; ANCOVA adjusting for age, K-SGDS score and education). The Haenyeo group showed poorer performance on the Korean Version of Frontal Assessment Batter

($p < 0.001$), the Mini Mental State Examination in the Korean version of the CERAD assessment packet ($p < 0.018$), the word fluency test ($p < 0.001$), and the word list memory test ($p = 0.012$) in ANCOVA adjusting for age and education. The mean SMCQ score was higher in the Haenyeo depressed group than in the non-Haenyeo depressed group.

Conclusion: The Haenyeo depressed group shows cognitive dysfunction, especially frontal lobe dysfunction, compared to the non-Haenyeo depressed group, indicating the Haenyeo depressed group may have more severe frontolimbic dysfunction due to chronic exposure to hypoxia. The Haenyeo depressed group suffers more somatic symptoms than the non-Haenyeo depressed group.

No. 29

Factors Associated With Bullying in College by Students

Poster Presenter: Hyun-ju Yang

SUMMARY:

Objective: The purpose of this study is to investigate the factors associated with bullying in college by students. **Methods:** A total of 941 college students were recruited in the Jeju area. According to the existence of bullying experience in college by students, they were divided into two groups—the bullying in college by students group and the non-bullying in college by students group—and the differences between groups in terms of various sociodemographic and clinical characteristics, including depression (Beck Depression Inventory), and health-related conditions, were investigated.

Results: A total of 82 (8.7%) college students reported bullying experience in college by students. The associated factors of bullying in college were low social economic state (OR=2.00, 95% CI [1.10, 3.64]), overweight (OR=2.20, 95% CI [1.13, 4.29]), body dissatisfaction (OR=3.92, 95% CI [2.36, 6.50]), and depression (OR=2.42, 95% CI [1.53, 3.85]).

Conclusion: These results may have important implications for the strategies and specified intervention to prevent bullying in college by students.

No. 30

Aggressive Behavior in Long-Term Psychiatric Inpatients: Clinical Predictors

Poster Presenter: Aleksandar Micevski, M.D.

Lead Author: Yeshuschandra Dhaibar, M.D.

Co-Authors: Donald A. Eckel Jr., M.S., Mary Jo Kurtiak, Steven J. Schleifer, M.D.

SUMMARY:

Background: Aggressive behavior toward persons and property is an ongoing challenge for psychiatric services. Long-term psychiatric facilities, such as our 550-bed state hospital, tend to concentrate patients with incompletely controlled aggression and devote considerable resources and planning to preserving safety for patients and staff. We examined the nature and distribution of aggressive behaviors as documented by hospital incident reports. **Methods:** Demographic and clinical correlates of all reported aggressive incidents to persons or property (N=3,213) for patients hospitalized at any time in 2015 (N=1,104) were investigated. Clinical data were chart derived, and violent event frequencies, identified from mandated hospital reports for each event, were adjusted to generate an annualized violent event (aVE) rate. Exploratory analyses utilized chi-square, ANOVA and regression analyses (SPSS). **Results:** The patient population was 47.2% female, mean age was 47.2+16.0 (range=18–88 years) and median length of stay was 304 days; 33% had a history of developmental disability (DD) or a neurological disorder. Mean aVE was 5.8+12.2 events. Fifty-four percent of patients had at least one reported aggressive event. Regression analyses on aVE including age, sex, DD, and neurological disorders revealed highly significant independent predictive effects for younger age as well as for DD and neurological disorder ($p < 0.001$). Adding variables reflecting other behavioral and medical disorders revealed further independent effects for impulsive disorder diagnoses ($p < 0.001$) and for cardiovascular and thyroid disorders ($p < 0.05$), but no differential predictive effects for other major psychiatric disorders (or for obesity). Regression analyses conducted separately for patients with impulsive disorders (N=48) revealed only male sex as a predictor of violence in that subsample; the predictors noted above for the entire sample were associated with violence in the remaining 992 patients with complete data. Considering patients who were in the hospital for at least 30 days in 2015 (N=915), the 10% with the highest frequency of

violent events had a mean aVE of 33.4+22.1 incidents (versus 3.0+4.0 incidents for the remaining patients). Thirty-nine percent of this highest aggression subgroup had DD (versus seven percent of the remaining patients); 21% (versus three percent) had an impulse disorder diagnosis, 40% (versus 29%) had obesity as a diagnosis and 55% (versus 34%) had thyroid disorders (all differences significant). The high aVE group was also significantly younger than the balance of the patients (41 versus 48 years, $p < 0.001$), but did not differ on sex, neurological disorders or major psychiatric disorders. **Conclusion:** These observations underscore the need to develop differential strategies for subgroups of long-term psychiatric inpatients at risk for violence, especially those with developmental disability comorbidity. The contribution of certain medical disorders to aggressive risk requires further exploration.

No. 31

Poor Sleep Quality Is Associated With Functional Impairment in Inner City, At-Risk Youth, Even After Controlling for Psychiatric Diagnoses

*Poster Presenter: Lawrence Amsel, M.D., M.P.H.
Co-Authors: George Musa, Ruth Eisenberg, Lauren Hale, Marie-Pierre St-Onge, Lupo Geronazzo-Alman, Christina Hoven*

SUMMARY:

Background: Sleep quality during adolescence is recognized as a common, yet inadequately studied, phenomenon with significant impact on health, mental health and functional outcomes, including impulsivity, risk taking, obesity, substance use, decision making, criminal justice system involvement, and psychopathology. Poor sleep quality (PSQ) is believed to be particularly prevalent in low-socioeconomic status (SES), inner-city neighborhoods. However, unlike many other risk factors, PSQ is potentially modifiable and could be a cost-effective target for public health interventions. The key to actualizing this potential requires untangling how PSQ operates in conjunction with other factors known to impact well-being. In particular, as psychiatric diagnosis influences sleep and sleep influences psychiatric diagnosis, it has been challenging to disentangle these associations.

Methods: In our Stress and Justice Studies (R01-

DA023733 and R01-DA024029, PI: Hoven), which consist of a longitudinal investigation of high-risk, hard-to-reach minority families living in the poorest congressional district in the U.S., we conducted thorough face-to-face diagnostic assessments (DISC) and health and well-being questionnaires administered to both youth and parents. As part of this study, we examined the role that sleep problems may have on functional impairments, while controlling for psychopathology and other potentially confounding variables that are often unavailable. To our knowledge, this is first epidemiologic field study of sleep with large sample size ($N=650$) and this level of face-to-face assessments conducted on high-risk, low-SES adolescents. **Results:** In a group of 650 youth, after controlling for age, gender, parental education level, single parent family, and any internalizing disorder, we found that the self-reported presence of nightmares was associated with impairment on the overall Columbia Impairment Scale ($p=0.0002$), as well as on the Interpersonal Relations Subscale ($p=0.0089$) and the Job/Schoolwork Subscale ($p=0.0005$), but not the Leisure Time Subscale ($p=0.5925$). We also found that the self-reported presence of trouble sleeping predicted impairment on the overall Columbia Impairment Scale ($p=0.0002$), as well as on the Interpersonal Relations Subscale ($p=0.0025$) and the Leisure Time Subscale ($p=0.0222$), but not on the Job/Schoolwork Subscale ($p=0.1697$). **Conclusion:** While this study was correlational and does not allow for causal conclusions, it does help us untangle the association between PSQ and specific domains of functional outcomes for high-risk, low-SES adolescents. If the causal and mutable role of PSQ effect on functionality is substantiated in longitudinal studies, it may open the door to interventions on nightmares and trouble sleeping. As there is an emergent literature on behavioral and pharmacological treatments for nightmares and trouble sleeping, this approach has great promise for the long-term well-being of our most vulnerable adolescents.

No. 32

An Ottawa Adult Day Hospital: A Quality Care Evaluation

Poster Presenter: Raymond P. Tempier, M.D.

SUMMARY:

Background: Day hospitals are seen as a form of community treatment and an alternative to hospitalization. Some controversy and ambiguity exist about the importance of day hospital care among mental health services. It is important to ascertain its impact and outcome. We performed an assessment of the Montfort Day Hospital in Ottawa, Canada, offering intensive group sessions for eight weeks. The program is based on psychoeducation and a cognitive behavioral approach. **Methods:** This is a retrospective study with pre-/post-assessment with a study population consisting of patients attending the program between April 1, 2013, and March 31, 2014. The Outcome Questionnaire (OQ-45.2) was used to assess the effectiveness of the program. Program satisfaction was measured with the Customer Satisfaction Questionnaire (CSQ-8). **Results:** Participants (N=81) were on average 43 years old, mostly women (66.7%). Over half of patients had diagnoses on mainly anxiety and depressive disorders. Patients were referred mostly by community physicians, and more than 33% had a psychiatric hospitalization or a previous suicide attempt. The average attendance of patients was 83%. Clinically significant improvement was observed among 66.3% after participation in the program. Overall satisfaction with the program was 95.7%. **Conclusion:** This program had a positive effect on patients over a short term. We need to know if it will also have a long-term impact.

No. 33**The Impact of Depressive Symptoms, State and Trait Anxiety, and Psychiatric Diagnosis in Performance of Applicants to Medical Residency Programs**

Poster Presenter: Eduardo C. Humes

SUMMARY:

Background: Undergraduate medical students have been reported to have high rates of psychiatric diagnosis and high levels of depressive and anxiety symptoms. Such conditions are associated with poorer performance during medical school. However, little is known about their impact on the performance of candidates at the medical residency selection. In this study, we evaluated the association of performance in a residency selection process with

depressive and anxiety symptoms and psychiatric diagnosis. **Methods:** All candidates that participated in the clinical skills examination for selection to a medical residency program of a public university hospital in Brazil were invited to join the study as they finished the examination. Performance on the residency selection was accessed by final mean examination grade, on a 0 to 10 scale. Psychiatric diagnosis was self-reported (rPD); depressive symptoms (DS) were accessed by the QIDS-SR16 and trait (Trait-A) and state anxiety by the STAI. Data were initially analyzed by bivariate analysis. Subsequently, we created equations of multiple linear regression, entering performance on the examination as the dependent variable. The University of São Paulo Medical School Ethical Review Board approved the study, and all participants signed the informed consent form (Registration number 419/2014). **Results:** From the total of 643 candidates submitted to the examination and invited, 515 (80.09%) agreed to participate in the study. Sixty-eight participants (13.44%) reported a psychiatric diagnosis. Age, gender, religion, attending preparatory course, examinations in previous years, use of psychopharmacology, and number of applications for residency programs that year presented correlation in the bivariate analysis, as well as Trait-A, DS and rPD. Age (95% CI [-0.133, -0.068], $p < 0.001$), preparatory course (95% CI [-0.666, -0.273], $p < 0.001$), number of applications for residency programs that year (95% CI [-0.094, -0.028], $p < 0.001$), and reported psychiatric diagnosis (95% CI [-0.582, -0.127], $p < 0.001$) were the only variables that maintained significance in the multiple linear regression equation ($F(4, 471) = 28.418$, $p < 0.0001$, $R^2 = 0.188$). **Conclusion:** Our findings suggest that psychiatric diagnosis has independent negative impact on the performance at the selection examination to ingress in a medical residency training program. Studies are warranted to confirm our findings. If confirmed, our findings point to the development of studies investigating prevention strategies and early detection and treatment of psychiatric morbidity for graduating and new graduate doctors.

No. 34**Early Childhood Training in Child and Adolescent**

Psychiatry Fellowship

Poster Presenter: Meredith Weiss

SUMMARY:

Background: The ACGME requires some exposure to early childhood clinical issues as listed on their website. Fellows must have instruction in normal development, including observation of and interaction with normal preschoolers, school-aged children and adolescents. Fellows must have instruction in the integration of neurobiological, phenomenological, psychological, and sociocultural issues into a comprehensive formulation of clinical problems. We are interested in the various ways existing child and adolescent psychiatry programs meet these professional needs. **Methods:** To gather data from the approximately 126 child and adolescent psychiatry training programs throughout the United States, we designed a voluntary online survey of 11 questions using SurveyMonkey and sent it to 108 child and adolescent psychiatry program directors' email addresses. The survey takes approximately 5–10 minutes to complete. The data are pooled, and the specific program is not identified in the outcome results. Data collection runs from July 2016 through October 2016, at which point the survey is closed and results are analyzed. **Results:** Preliminary results show that most child and adolescent fellowship programs provide training in early childhood development and psychiatric issues, and most of the fellows participate in this training. Training includes specific didactics in developmental course, utilize case-based studies, have clinical supervised exposure to this patient population, and provide parent counseling. Programs that did not provide such training indicated as such due to lack of affiliation with nursery population programs, lack of appropriate instructors or lack of appropriate funds. A small percentage of programs indicated that they considered such programs fringe skills, and a majority of the programs indicated that they did not have the facilities to launch such a program. Half the programs indicated that they used a dedicated curriculum devoted to zero- to five-year-old issues, and the majority of programs indicated that if there were a zero- to five-year-old mental health curriculum model program available, it would enhance initiative. All of the programs indicated that they had consultation-liaison services to the

inpatient pediatrics service, a majority to the emergency room and a minority to outpatient services and collaborative care centers. **Conclusion:** This survey is designed to better understand the scope of training various programs provide in early childhood issues. Results of this survey should show how much and what kind of exposure trainees have to zero- to five-year-old populations and determine how programs may be aided by new common curricula that address both the knowledge base of developmental theory and exposure to clinical populations.

No. 35

Motivational Interviewing Training for Psychiatry Residents: Using Technological Innovation to Enhance Education

Poster Presenter: Shilpa Srinivasan, M.D.

Co-Authors: Suzanne M. Hardeman, N.P., David Murday, Ph.D., Matt Orr, Ph.D.

SUMMARY:

Background: Over 20 million individuals in the U.S. have substance use disorders (SUDs). Training in the diagnosis and management of SUDs is therefore an integral part of the psychiatry residency curriculum. Motivational interviewing (MI) is a patient-centered, evidence-based therapeutic approach to elicit behavior change. MI is used as part of a brief intervention particularly for SUDs. Training in MI has been shown to improve resident attitudes and skills in “engaging challenging patients.” However, it is inconsistently incorporated into psychiatry residency education. As part of the armamentarium of brief psychotherapeutic modalities, MI is well suited for incorporation into psychiatric residency training curricula. Such curricula can be used to evaluate residents in the core competencies of patient care (PC), medical knowledge (MK), professionalism (PROF), and interpersonal and communication skills (ICS). **Methods:** A comprehensive, structured and innovative asynchronous online MI curriculum was developed to train psychiatry residents in MI. Psychiatry residency leadership reviewed the curriculum review before implementation to ensure fidelity to overall residency requirements and sustainability. Didactic and experiential training components were developed. Didactics included interactive presentations covering the background of

MI, foundations and processes (core concepts and philosophy of MI), applications in clinical practice, and demonstration videos illustrating the use of MI across various clinical settings. The presentations were housed on an online platform (New Innovations) currently used by many psychiatry residency training programs. Knowledge, importance and confidence surveys (KICS) were developed and administered online as pre- and post-assessments. The didactic curriculum was piloted in Summer/Fall 2016. **Results:** The first wave of six PGY-2 psychiatry residents completed online didactic training in MI. Four residents were male, and average resident age was 28. Most residents reported an average of 25 hours of prior formal addiction training and 2.6 hours of prior MI training. However, most residents reported minimal use MI in clinical encounters prior to this training. Knowledge scores did not vary significantly before versus after training. However, confidence in MI skills increased by 37%. In subsequent focus group discussion with residents, more clinical vignette-based knowledge assessments were recommended, and the experiential training (next step of the MI curriculum) will enable further assessment of MI competency. **Conclusion:** This asynchronous MI curriculum offers an innovative, technological method to train residents in MI. This offers a readily accessible and sustainable mechanism for residency education, especially in the face of competing curricular demands. This project is funded by the 2016 American Board of Psychiatry and Neurology Faculty Innovation in Education Award.

No. 36

Medical Student Interpretation of Visual Art: Who's Got Empathy?

Poster Presenter: Samuel J. Sampson, B.Sc.

Co-Author: Johanna Shapiro, Ph.D.

SUMMARY:

Background: Patients who have empathetic physicians are more compliant with their treatments, are more satisfied with their care, and have better health outcomes. Selecting for desired traits such as empathy, as well as other characteristics associated with increased empathy, may also help stratify the highly qualified pool of U.S. medical school applicants. The most well-

validated scale to test empathetic response is the Jefferson Scale of Empathy. We propose that a vision-based scale using art can also measure the empathy of medical students. We further propose that "biosocial" factors such as family economic status and difficult experiences may be associated with empathetic response. **Methods:** UCI IRB approval was obtained. Study recruitment was from all first- and second-year medical students at UCISOM. Data collection was via e-survey, consisting of art, biosocial and JSE portions. The art portion was designed to measure empathy using paintings as proxies for the visual stimuli of a patient. The biosocial portion was designed to evaluate any association of empathy with family economic status and trying experiences, such as exposure to human suffering. The JSE was administered for analysis against the art and biosocial items. Cronbach's alpha was run on the art and biosocial items to determine internal consistency reliability. Any items that reduced consistency were removed until $\alpha > 0.7$ was achieved. Four of six art items were retained. All six biosocial items were retained. Possible art scores were 40 to 280, possible biosocial scores were 6 to 24, and possible JSE scores were 20 to 140. Multiple regression was run using JSE as DV. **Results:** Seventy-one surveys were collected. Cronbach's alpha for the combined data were 0.73 for the art scale and 0.71 for the biosocial scale. Controlling for class year, age, gender, and biosocial score, there was a significant positive association between art and JSE scores ($B=0.11$, 95% CI [0.02, 0.19], $p=0.014$). Controlling for class year, age, gender, and art score, there was a significant positive association between biosocial and JSE scores ($B=0.75$, 95% CI [0.16, 1.34], $p=0.015$). There was no significant association between class year, age or gender and JSE score. **Discussion:** To our knowledge, these scales are the first of their kind developed. Both the de novo art and biosocial scales achieved significant positive associations with the JSE, a benchmark measure of physician empathy. They additionally both achieved good internal consistency, indicating scale items were measuring similar respondent qualities. Results support both hypotheses: That visual stimuli as well as experiential and economic formative factors are each independent predictors of empathy. Possible confounders include social desirability bias in the JSE

scores; however, as the JSE was given under openly non-penalizing conditions, this was likely minimal.

No. 37

Efficacy and Neuropsychiatric Safety of Varenicline, Bupropion and Nicotine Patch for Smoking Cessation in Smokers With Psychiatric Disorders

Poster Presenter: Anne E. Evins, M.D., M.P.H.

Co-Authors: Melissa C. Maravic, Ph.D., M.P.H., Neal Benowitz, Robert West, Cristina Russ, M.D., Ph.D., Thomas McRae, David E. Lawrence, Ph.D., Lisa B. St. Aubin, John Ascher, Alok Krishen, Robert Anthenelli

SUMMARY:

Background: Tobacco smoking is more prevalent in those with than without psychiatric illness. Medications that improve abstinence rates are underused in smokers with psychiatric illness, in part due to a judged susceptibility to neuropsychiatric (NPS) adverse events (AEs). **Methods:** We report secondary safety and efficacy analyses in smokers with a lifetime psychotic (N=390), anxiety (N=792) or mood (N=2910) disorder enrolled in EAGLES, a randomized, double-blind, placebo- and active (nicotine patch [NRT])-controlled trial of varenicline or bupropion. The primary safety endpoint was occurrence of a composite endpoint derived from moderate to severe NPS AEs. The primary efficacy endpoint was continuous abstinence (CA) for weeks 9–12. **Results:** There was a significant effect of treatment on week 9–12 CA ($p < 0.0001$) and no significant treatment by psychiatric diagnosis interaction ($p = 0.24$); abstinence rates with varenicline were superior to bupropion, NRT and placebo, and abstinence with bupropion and NRT was superior to placebo. In post hoc analyses within each diagnostic subgroup, the odds ratios (OR) for week 9–12 CA for active versus placebo were over 1.75 for all diagnostic groups. Odds ratios for varenicline versus placebo were 7.58 (95% CI [2.46, 23.33]) for psychotic disorders, 4.26 (95% CI [2.34, 7.77]) for anxiety disorders and 2.91 (95% CI [2.23, 3.81]) for mood disorders. Odds ratios for bupropion versus placebo were 3.22 (95% CI [0.97, 10.64]) for psychotic disorders, 1.86 (95% CI [0.97, 3.55]) for anxiety disorders and 1.83 (95% CI [1.38, 2.42]) for mood disorders. Odds ratios for NRT versus placebo were 3.61 (95% CI [1.12, 11.63]) for psychotic disorders, 3.23 (95% CI [1.75, 5.96]) for anxiety

disorders and 1.78 (95% CI [1.34, 2.35]) for mood disorders. Neither varenicline nor bupropion increased the rate of NPS AEs significantly relative to NRT or placebo in the overall psychiatric cohort or within the psychotic, anxiety or mood disorder subgroups. The rate of suicidal ideation and/or behavior on the Columbia Suicide Severity Rating Scale was similar across active treatments and placebo and under 1.5% in the mood and under 4.0% in the anxiety and psychotic subgroups. **Conclusion:** Varenicline and bupropion are well tolerated and effective in improving the chances of smoking cessation in adults with a wide range of psychiatric disorders, including psychotic disorders.

No. 38

Addressing Treatment Needs for Dually Diagnosed Men in a Residential Recovery Program for Latinos

Poster Presenter: Michelle V. Porche, Ed.D.

Co-Author: Lisa Fortuna

SUMMARY:

Background: Retention in substance abuse and mental health treatment is a major concern for Latino populations. Poverty, unemployment, low educational attainment, acculturation stresses, economic marginalization, traumatic stress, and untreated psychiatric disorders are associated with risk for drug and alcohol abuse among Latinos. A community research and collaborative translational project between university researchers and a residential addictions treatment program for Latino men was conducted to identify 1) factors related to the completion of residential drug treatment by Latino men and 2) needs related to dual diagnosis treatment. The program is a bilingual and bicultural residential substance abuse recovery program that provides services for up to 25 Latino male residents at a time for up to one year in an environment that is culturally sensitive and linguistically appropriate to the Latino population. **Methods:** A sequential explanatory mixed methods design was used for data collection and analysis. A chart review sample was comprised of clinical records from 74 men who had been admitted to the program during its first two years; 28 men completed in-depth qualitative interviews (24 current patients and four graduates) in their language of choice (Spanish or English). **Results:** The vast majority had a history of tobacco

use (86%), and over half (58%) reported alcohol use. However, the most common substances were heroin (74%) and cocaine (73%), followed by cannabis (59%) and crack (49%), with a variety of illicit prescription drug use reported. Reasons reported for substance use initiation by the 28 men interviewed included trauma history (46%), curiosity (25%), self-medication for mental health concerns (21%), and environmental influences (21%). Clients were found to have poor access and retention to substance abuse and mental health treatment; experience poverty, unemployment, low educational attainment, acculturation stresses, traumatic stress, and untreated psychiatric disorders; and have a high prevalence of co-occurring psychiatric, medical (HIV, hepatitis, others) and substance use disorders. Over two-thirds of men in the study had entered multiple recovery programs, yet qualitative analysis identified several critical themes regarding motivations for staying in treatment. These included 1) the realization that their substance use was life-threatening; 2) commitment to sobriety to take care of family; and 3) spiritual inspiration. **Conclusion:** In this poster presentation, we discuss the steps employed to address the multiple medical, psychiatric and social needs of the men and how their lived experience and culture was integrated into the program design.

No. 39

Group Psychotherapy, Medication or Both: Treatments for Sexually Compulsive Men

Poster Presenter: Marco D. T. Scanavino, Ph.D.

Co-Authors: Maria L. S. Amaral, Carmita H. N. Abdo, Hermanto Tavares, Jeffrey T. Parsons

SUMMARY:

Background: Compulsive sexual behavior (CSB) is a clinical phenomenon in which an individual experiences intrusive and repetitive sexual fantasies or engages in excessive sexual behavior that increases in frequency and intensity over time and causes interpersonal conflicts, occupational and social problems, and emotional distress. The evidence on the efficacy and safety of treatments for CSB is quite limited. We aim to compare changes in the severity of sexual compulsivity (SC) symptoms in men with CSB randomized to one of three arms: 1) short-term psychodynamic psychotherapy group

(STPPG), i.e., 16 weekly group sessions; 2) treatment as usual (TAU), i.e., drug prescription with psychiatric follow up; and 3) a combination of both arms (STPPG+TAU). **Methods:** A total of 135 men seeking treatment, who were highly symptomatic for CSB, were randomly assigned to one of the three arms in an open randomized controlled trial. The assessments were performed at baseline (time 0), and week 25 (time 1). We present an analysis of the main outcome (difference between time 0 and time 1 on the Sexual Compulsivity Scale [SCS]) through intention to treat analysis (ITT) and complete case analysis (CCA). **Results:** We had a high dropout rate (42%). We used multiple imputation (MI) to address missing data. Regarding the difference in the SCS scores between the two periods (time 1 minus time 0), we may assume that the STPPG+TAU group presented with higher mean differences compared with the TAU group under ITT (N=135) (M=-6.1 vs. -1.9; $\beta=4.5$; 95% CI [-8.8, -1.1]; $t(132)=-2.07$, $p=0.04$; Cohen's $d=0.66$) and under CCA (N=78) (M=-7.6 vs. -0.7; $\beta=-7.3$; 95% CI [-11.0, -3.6]; $t(74)=-3.94$, $p<0.001$; Cohen's $d=1.13$) in the linear regression. **Conclusion:** The combined intervention (psychotherapy and prescribed medication) group exhibited better effects on SCS scores (medium under ITT and large under CCA) than did the TAU group.

No. 40

K2-Induced Rhabdomyolysis

Poster Presenter: Stephanie Sutton

Co-Authors: Erin A. Kindred, Matthew Egbert, Ashish Sharma, M.D.

SUMMARY:

Case: Our patient, a 39-year-old Hispanic male, presented to the emergency department with altered mental status. He was agitated and rambling. He was found destroying property. His labs and head CT were normal. Urine drug screen was negative except for benzodiazepines that he received in the ED. He stated "we are not here alone" and that he was a world leader "stomping around the world" to change the way it works. He appeared to be responding to internal stimuli. Later, he was put in restraints, as he tried to bite staff members. He was hospitalized once in a psychiatric unit fifteen years ago for a "mental breakdown." He had not been on

any medications and has not followed up with mental health services since then. His girlfriend confirmed use of synthetic marijuana recently. His CK on admission was 4,103, which went up to 7,666. He was started on intravenous fluids and olanzapine 10mg by mouth every evening at bedtime. Over the course of three days, his symptoms improved almost to his baseline, and he was later transferred to an inpatient psychiatric facility for continued care.

Conclusion: Synthetic cannabinoids use can present with acute psychosis, trigger psychosis or worsen preexisting psychotic illness. In cases like ours, rhabdomyolysis usually results from psychomotor agitation; however, the possibility of “K2” causing rhabdomyolysis secondary to electrolyte abnormality, central hyperthermia or direct muscle ischemia could not be ruled out. JWH-018 has a higher affinity for cannabinoid receptors CB1 and CB2 compared to THC. Unlike cannabis, synthetic cannabinoids do not contain cannabidiol, which has antipsychotic and anxiolytic properties. They are not detected in conventional urine drug testing.

No. 41

Problematic Internet Use: A Survey of College-Aged Internet Users

Poster Presenter: Michael Van Ameringen, M.D.

Co-Authors: William Simpson, Beth Patterson,

Jasmine Turna, Zahra Khaledi, B.Sc.

SUMMARY:

Background: Internet addiction, is a term describing pathological, compulsive Internet use and has an estimated prevalence of six percent (higher in students). Unlike the pathological use of alcohol or drugs, it is uncertain if extreme Internet use should be conceptualized as an addiction. The Internet Addiction Test (IAT) was developed in 1998, prior to the wide-spread use of Smartphone and other mobile devices, to detect Internet addiction. It is unclear whether this instrument is capable of capturing problematic modern Internet use. The purpose of this study was to examine the construct of “Internet addiction” in a sample of college-aged Internet users. **Methods:** A survey was administered to first-year undergraduate students at McMaster University and posted to our center website: www.macanxiety.com. Following acknowledgment of a disclosure statement, participants completed

several self-report scales detailing Internet usage, symptoms of depression and anxiety, impulsiveness, and executive functioning. Measures included the IAT; sections from the Mini International Neuropsychiatric Interview for OCD, GAD and SAD; the Barkley Adult ADHD Rating Scale; the Barratt Impulsiveness Scale; the Depression, Anxiety and Stress Scale (DASS-21); the Barkley Deficits in Executive Functioning Scale; and the Sheehan Disability Scale. Individuals were also asked to complete the Dimensions of Problematic Internet Use (DPIU), a scale based on *DSM-5* addiction criteria. Once the survey was complete, respondents were informed of their score and interpretation on the IAT. **Results:** All assessments were completed by 254 participants. The mean age was 18.5±1.6 years; 74.5% were female. In total, 12.5% (n=33) met screening criteria for Internet addiction according to the IAT, while 107 (42%) met addiction criteria according to the DPIU. Respondents had the most difficulty controlling their use of video streaming services (55.8%), social networking (47.9%) and instant messaging tools (28.5%). Those screening positive on the IAT and on the DPIU had significantly higher levels of functional impairment ($p<0.001$), depression and anxiety symptoms ($p<0.001$), greater executive functioning impairments ($p<0.001$), and greater attentional problems ($p<0.001$) and ADHD symptoms ($p<0.001$). Those with IAT and DPIU Internet addiction spent more of their non-essential (leisure) time online compared to those who did not meet Internet addiction criteria and had more difficulty controlling their use of instant messaging tools compared to those without Internet addiction ($p=0.01$). No other differences were observed.

Discussion: A high proportion of the sample met criteria for Internet addiction. These individuals had greater levels of psychopathology and functional impairment. This study highlights that problematic Internet use may be more widespread than once thought. Further studies are needed to understand the relationship between problematic Internet use and psychopathology.

No. 42

Adult ADHD With Anxiety Disorder Comorbidity: Characteristics of a Clinical Trial Cohort

Poster Presenter: Michael Van Ameringen, M.D.

Co-Authors: Beth Patterson, William Simpson,

Jasmine Turna, Katrina Pullia

SUMMARY:

Background: Adult ADHD is highly comorbid with mood and anxiety disorders, with 85% of patients having at least one psychiatric comorbidity and 60% having at least two. The presence of anxiety comorbidity in adult ADHD has been associated with additive clinical effects, leading to more impairment, poorer outcome, treatment resistance, and increased costs of illness. Stimulant medications are the first-line agents in the treatment of ADHD, but only two studies have examined the efficacy of ADHD treatments within comorbid populations. Lisdexamfetamine dimesylate (LDX) is a central nervous system stimulant with a unique chemical structure. Given the high degree of comorbidity between anxiety disorders and ADHD, and the limited evidence to guide clinicians on treatment, we are conducting a prospective trial examining LDX in adult ADHD with comorbidity. We present a preliminary analysis of the impact of anxiety and mood comorbidity on adult ADHD symptom severity and functional impairment. **Methods:** A randomized, double-blind, 18-week cross-over trial of flexibly dosed LDX in the treatment of adults (aged 18–65) with ADHD and anxiety disorder or depression comorbidity is currently being conducted. In this study, we examined the relationship between ADHD, anxiety and mood symptom severity using the clinician-rated ADHD-Rating Scale (ADHD-RS), the Barkley Adult ADHD Rating Scale (BAARS-IV), the Overall Anxiety Severity and Impairment Scale, the Revised Padua Inventory, the Panic and Agoraphobia Scale, the GAD-7, the Social Phobia Inventory, the Quick Inventory of Depressive Symptoms, the Clinical Global Impression–Severity Scale (CGI-S), the Sheehan Disability Scale (SDS), and the Weiss Functional Impairment Rating Scale (WFIRS). **Results:** Forty adult ADHD subjects were evaluated. The sample was 48% male, with a mean age of 33.6 ± 11.4 years and mean scores on the ADHD-RS of 44.9 ± 6.0 , CGI-S of 5.9 ± 0.6 and BAARS of 48.8 ± 9.4 , suggestive of severe ADHD. GAD was the most common comorbid condition (92.5%), followed by SAD (62.5%) and OCD (37.5%). No significant differences were found between males and females, nor in symptom severity, comorbidity, ADHD subtype, or impairment. A positive correlation was found

between inattentive symptoms (BAARS-IV) and impairment (WFIRS $r=0.35$, $p=0.03$; SDS $r=0.60$, $p<0.001$), while hyperactivity and impulsivity (BAARS-IV) were positively correlated to ADHD severity (ADHD-RS $r=0.59$, $p<0.001$; CGI-S $r=0.57$, $p<0.001$). **Discussion:** Similar to previous findings, comorbidity had little impact on ADHD severity. This finding is contrary to the anxiety and mood disorder literature where comorbidity tends to increase the severity of the index disorder and has a significant impact on functional impairment and treatment response.

No. 43

Prognosis of Patients With Schizophrenia Treated With Antipsychotic Combinations: A PROACTIVE Study Report

Poster Presenter: Adriana E. Foster, M.D.

Co-Authors: Peter F. Buckley, M.D., John Lauriello, M.D., Stephen Looney, Ph.D., Nina Schooler, Ph.D.

SUMMARY:

Background: Combination antipsychotics are prescribed in 10–30% of cases of schizophrenia, despite risks and limited evidence of efficacy. We performed a secondary analysis on PROACTIVE study data, in which 305 patients with schizophrenia and schizoaffective disorder were followed for 30 months after randomization to long-acting injectable (LAI) risperidone or oral second-generation antipsychotic (OA) to explore the effect of switching to antipsychotic monotherapy on patients who entered the study on combination of antipsychotics (CA). **Methods:** Participants were classified into groups based on their antipsychotic medication status at study entry—LAI (N=20), single OA (N=206) and CA (N=50)—and compared in terms of Brief Psychiatric Rating Scale (BPRS) clinical measures, Scale of Functioning, number of prior hospitalizations, and time to relapse. To account for baseline group differences, we calculated “change scores” for each measure for each subject. We then compared the groups in terms of clinical improvement over the course of the study, controlling for randomized treatment assignment. The chi-square test was used to compare the groups in terms of the percentage in each group who suffered a relapse. We used Kaplan-Meier method to construct survival curves for time until first relapse

in the three groups and used log-rank test to perform a comparison of the groups in terms of overall “survival.” **Results:** There was a significant difference among the three groups of patients on number of hospitalizations prior to baseline (9.8±22 for LAI, 8.6±14 for OA and 11.4±11.6 for CA, p=0.011); the CA group had significantly more hospitalizations than the OA group (p=0.009). There were significant differences among the three groups on BPRS total score at endpoint (p=0.002); the CA group (37.5±9.4) had a significantly greater illness severity score than the OA group (32.2±9.1, p=0.003). The log-rank test indicated a significant difference among the three groups in terms of time to first relapse ($\chi^2=6.81$, df=2, p=0.033), which was significantly shorter in the CA group (mean 409.5, median 252.0 days) than in the single OA group (mean 562.8, median 772.0 days, p=0.011), regardless of being randomized to oral or LAI antipsychotic in the study. **Conclusion:** There was a significant difference in subjects’ number of hospitalizations prior to baseline, with the highest number in the CA group. There was a striking difference in time to first relapse for people on CA versus those on OA or LAI at baseline. Clinical decision making that led the treating physicians to use CA is validated by these results. Rating scales detected greater illness severity only at endpoint, but not at study entry, in those who received CA. Being on two antipsychotics and having more hospitalizations indicates greater risk and predicts earlier relapse in schizophrenia.

No. 44

Effect of HLD200 on Caregiver-Reported ADHD Symptom Improvement in Children With ADHD and Caregiver Strain: Results From a Phase 3 Trial

Poster Presenter: Andrea Marraffino

Lead Author: Steven Pliszka

Co-Authors: Valerie Arnold, Norberto DeSousa, Bev Inledon, Floyd R. Sallee, Timothy Wilens, M.D., Jeffrey Newcorn

SUMMARY:

Background: Inadequate control of symptoms and impaired functioning can have a significant impact on not only children with attention-deficit/hyperactivity disorder (ADHD), but also on their caregivers. Previous studies have documented

that primary caregivers of children with ADHD experience a lower quality of life, lower parenting effectiveness, and tremendous stress around facilitating their child’s ADHD symptoms and functional impairment. As previously reported, in a pivotal phase 3 trial, HLD200 significantly improved ADHD symptom control and at-home early morning and late afternoon/evening functioning in children with ADHD versus placebo (PBO). In this poster, we report on the secondary endpoints of this trial, particularly those assessing the caregiver-reported effects of treatment with HLD200 on ADHD symptom control and caregiver strain. **Objective:** Evaluate whether three weeks of treatment with HLD200 in children with ADHD 1) demonstrates an improvement in caregiver-rated ADHD symptoms, as measured by the Conners’ Global Index—Parent (CGI-P) and 2) reduces caregiver strain, as measured by the Caregiver Strain Questionnaire (CGSQ) versus PBO. **Methods:** Caregiver-rated ADHD symptoms (CGI-P) and caregiver strain (CGSQ) were assessed as secondary endpoints following three weeks of treatment in a randomized, double-blind, multicenter, PBO-controlled, parallel-group, phase 3 trial of HLD200 in children (6–12 years old) with ADHD (NCT02520388). Using the 10-item CGI-P, parents rated their child’s ADHD symptoms on a four-point scale (0=never/seldom; 3=very often/frequently). Caregivers also rated the impact of caring for a child with emotional and behavioral challenges on the 21-item CGSQ (five-point scale: 0=not at all; 4=very much). A reduction on individual item and total scores for both measures indicated an improvement. **Results:** A total of 161 children were included in the intent-to-treat population (HLD200, N=81; PBO, N=80). The mean HLD200 dose after three weeks of treatment was 68.1mg. Mean CGI-P scores at baseline and CGSQ scores at screening (i.e., before washout of prior ADHD therapy) were comparable for both HLD200 (CGI-p=22.8, CGSQ=54.5) and PBO (CGI-p=21.8; CGSQ=54.9) groups. After three weeks of treatment, caregivers of children on HLD200 reported significant reductions in CGI-P scores versus those on PBO (least-squares [LS] mean=12.3 vs. 17.4; p<0.001). Additionally, there was a significant reduction in CGSQ scores after three weeks of treatment with HLD200 versus PBO (LS mean=41.2 vs. 49.1; p<0.001). Post hoc analyses on the effect of HLD200

versus PBO on individual items of CGI-P and CGSQ and the two subscales of CGI-P will be presented. No serious TEAEs were reported, and all TEAEs were consistent with those of MPH. **Conclusion:** Caregivers reported significant improvements in their child's ADHD symptoms, and these improvements coincided with reductions in caregiver strain after three weeks of treatment.

No. 45

The Five-Year Psychotropic Medication Prescribing Trends in Foster Children

Poster Presenter: Alka Aneja

Co-Authors: Michael Fost, Esha Aneja

SUMMARY:

Background: There has been an increase in literature around the use, overuse and even underuse of psychotropic medications in recent years. Many researchers have reported a growing concern over the use of psychotropic medication in foster care children. Some of these concerns are around high polypharmacy (use of more than one medication of the same class), high antipsychotic use and generally high rates of prescriptions among foster children. Other studies have reported the opposite finding of lower rates of use of these medications as compared to the number of youth with psychiatric disorders. Both of these varied findings can be plausible depending on factors that might be involved locally including access to care and financial and other constraints. **Background:** To assess the prevalence of use or overuse of psychotropic medications for foster care children in Georgia, we studied prescribing trends between September 2012 and February 2016 by acquiring Medicaid claims data from the Department of Community Health.

Methods: Medicaid claims data extract was analyzed for 7,732 foster care children between September 24, 2012, and February 01, 2016. **Results:** 2012, 2014 and 2016 claims data for age showed similar trends with prescription use rising with age, with maximum use of psychotropic medications of 39% in 14–17 years of age. Comparing antipsychotic medication use, two percent of children under age 10 were on an antipsychotic, with 22% and 15% of the 10- to 17-year foster population on an antipsychotic in 2012, 2014 and 2016 data. Both 2012 and 2014 data showed 24% of females with

one prescription and 30% of males, whereas 2016 showed 18% of females and 25% of males with one prescription. **Conclusion:** Our Medicaid data for more than 7,000 foster care children revealed a decreasing overall use of psychotropic medication in GA, which increased with age, revealing 27% of the foster population being prescribed at least one psychotropic. Older children were more likely to receive any prescriptions and multiple prescriptions. However, even among those receiving the prescriptions in the autism spectrum disorder population, 32% have only one active prescription, and 65% have fewer than three active prescriptions, which seemed to indicate that the prescription practices are rather modest. Monitoring of medication use could be a helpful component for all states, including Georgia, to improve quality, safety and access to care. We have proposed a model for oversight to the Administration of Children and Families to standardize the informed consent process, consultation and regular data sharing between Medicaid and the Division for Foster Care.

No. 46

Decrease in Hospitalization in Psychotic Patients After Switching to Long-Acting Injectable Paliperidone

Poster Presenter: Javier Caballer-Garcia

Co-Authors: Luis Jimenez-Trevino, Aida Garcia-Rua, Esther Torio-Ojea, Marino Montes, Juan Carlos Ortigosa, Inmaculada Serrano-Quintana, Emilio Sotomayor, M. Angeles Paredes-Sanchez, Maria Suarez Alvarez

SUMMARY:

Background: Preventing hospitalizations in psychotic disorders is an important aim in long-term treatment. Medication adherence is a key factor associated with risk of relapse and hospitalization. Nonadherence with antipsychotic medication remains high in those with schizophrenia; only 10 days after hospital discharge, up to 25% are partially or nonadherent, rising to 50% at one year and 75% at two years. Long-acting injectable antipsychotics may be used to try to improve adherence and so to reduce the risk of relapse, although evidence for this is conflicting. **Objective:** The aim of this study was to assess the effectiveness of long-acting injectable paliperidone palmitate (PP-LAI) in terms of hospital

admissions in a clinical sample. **Methods:** We conducted a mirror image study of outpatients diagnosed with psychotic disorders after switching to PP-LAI from oral antipsychotics, classic depot antipsychotics and risperidone LAI. We analyzed admission rates and mean time of hospitalization. **Results:** This analysis included 158 patients treated with PP-LAI (mean age=46.35, 65.2% male). Mean time of PP-LAI treatment was 633.21 days, and mean dose of PP-LAI used was 107.48mg. The most common diagnosis was schizophrenia (33.5%). In the time period before initiation of PP-LAI, 29.7% patients were hospitalized (55 admissions), totaling 775 days for all the patients, with an average of 13.14 days in hospital per patient. After switching to PP-LAI, only 10.8% of patients needed hospitalization (20 admissions), totaling 250 days and an average of 4.237 days in hospital per patient. PP-LAI decreased hospitalized days by 67.75%. Differences were statistically significant ($p=0.000$). **Conclusion:** Our results suggest that switching antipsychotic treatment to PP-LAI may be effective in terms of reducing hospitalization rates and length of stay.

No. 47
Effect of a Novel NMDA Receptor Modulator, Rapastinel (Formerly GLYX-13), in OCD: Proof of Concept

Poster Presenter: Carolyn Rodriguez
Co-Authors: Jordana Zwerling, Eyal Kalanthroff, Hanyang Shen, Maria Filippou-Frye, Booil Jo, H. Simpson, Ronald Burch, Joseph Maskal

SUMMARY:

Background: A single intravenous dose of ketamine produces robust and rapid anti-obsessional effects in obsessive-compulsive disorder (OCD), but ketamine's side effects, including dissociation and nausea, may limit clinical use. Rapastinel (formerly GLYX-13), an NMDAR modulator, has shown rapid antidepressant activity without ketamine-like side effects and may be a new therapeutic strategy for OCD. We conducted the first study of the efficacy and tolerability of rapastinel administration in OCD. **Methods:** Seven unmedicated OCD outpatients (aged 18–55) with at least moderate symptoms (Y-BOCS score=16) received a single three- to five-minute IV push of rapastinel (dose=10mg/kg). At

baseline, 90 and 230 minutes after infusion, patients self-rated the severity of their obsessions and compulsions (YBOC Challenge Scale [YBOCCS]), anxiety (Beck Anxiety Inventory [BAI]), and depression (Beck Depression Inventory [BDI]). At baseline and one week after infusion, an independent evaluator, blind to study design, evaluated patients using the Y-BOCS, which appraises obsessive and compulsive symptoms over the prior week, and patients self-rated anxiety (BAI) and depression (BDI). Outcomes were analyzed using a nonparametric Wilcoxon signed-rank matched-pairs test ($\alpha=0.05$, two-tailed) without adjustment for multiple comparisons, given the exploratory nature of this study. **Results:** Compared to baseline, patient-rated YBOCCS, BAI and BDI scores were significantly lower at 90 and 230 minutes after infusion (all $p<0.05$; the percentage decrease in YBOCCS from baseline to 230 minutes after infusion was 46.4%). OCD severity, as measured by the Y-BOCS, was not significantly decreased ($p=0.20$) from baseline to one week after infusion, nor was BDI ($p=0.20$), although BAI was significantly decreased ($p=0.02$). No patient met the a priori treatment response criterion (35% Y-BOCS reduction) at one week after infusion. Participants did not report adverse events. **Conclusion:** The findings suggest that rapastinel is well tolerated in unmedicated OCD patients, as it is in patients with depression. Specifically, no patients reported psychotomimetic or dissociative adverse events, unlike ketamine in prior studies. In this small open-label sample, rapastinel demonstrated acute efficacy on obsessions and compulsions, anxiety, and depression. Future studies will examine multiple doses of rapastinel as a means to increase duration of response.

No. 48
Single-Dose Pharmacokinetics of HLD200, a Delayed-Release and Extended-Release Methylphenidate, in Adults and in Adolescents and Children With ADHD

Poster Presenter: Ann C. Childress
Co-Authors: Shailly Mehrotra, Jogarao Gobburu, Angus McLean, Norberto DeSousa, Bev Incedon

SUMMARY:

Background: Current extended-release formulations

of stimulants used for the treatment of attention-deficit/hyperactivity disorder (ADHD) provide an extended duration of ADHD symptom control; however, the onset of efficacy can be protracted, leaving the early morning untreated. HLD200 is an evening-dosed, delayed-release and extended-release formulation of methylphenidate (MPH) specifically designed to delay initial release of MPH and provide an onset of clinically meaningful treatment effect upon awakening and lasting through to the evening. **Objective:** 1) characterize the single-dose pharmacokinetics and tolerability of HLD200 in healthy adults, adolescents and children with ADHD and 2) compare the pharmacokinetics of HLD200 in these three populations. **Methods:** The pharmacokinetics and tolerability of a single oral evening dose of HLD200 (54mg) were evaluated in two single-center, open-label studies, the first in healthy adults (N=12) and the second in adolescents (N=18) and children (N=11) with ADHD. The primary pharmacokinetic endpoints were the rate and extent of MPH absorption (i.e., peak plasma concentration [C_{max}] and area under the curve from time zero to last quantifiable concentration [AUC_{0-t}], respectively) and time to peak concentration (T_{max}). These parameters were calculated using non-compartmental analysis. **Results:** HLD200 produced a pharmacokinetic profile characterized by an eight- to 10-hour delay in MPH release followed by a period of extended, controlled release resulting in an ascending absorption profile that coincided with the early morning and afternoon. Mean values (CV%) of weight-adjusted pharmacokinetic endpoints were similar in adults as in adolescents and children with ADHD: C_{max} ([ng/mL]/[mg/kg]) was 9.1 (35.2), 8.8 (34.5) and 7.4 (30.1); AUC_{0-t} ([ng-hr/mL]/[mg/kg]) was 126.5 (35.5), 129.4 (34.8) and 129.7 (27.3); and T_{max} (hr) was 15.6 (11.1), 17.1 (14.5) and 17.7 (14.1), respectively. Median T_{max} was approximately two hours later in children versus adolescents and adults (18.2 vs. 16.3 and 16.0 hours, respectively). While median T_{max} was statistically different between adults and children (p=0.003), it is not considered clinically meaningful. Intersubject variability in the mean time to achieve ascending plasma MPH concentrations of 2, 3, 4, and 5ng/mL was low across the three populations (CV: 7.9% to 17.7%). In adults, four adverse events (AEs) were reported, and in adolescents and children with

ADHD, 17 AEs were reported. All AEs were either mild or moderated in severity, and none were sleep-related. **Conclusion:** Evening-dosed HLD200 is well tolerated and produces the intended delayed-release and extended-release pharmacokinetic profile that provides a consistent, predictable delay in initial MPH release until the early morning, followed by extended release across the day. The body weight-adjusted pharmacokinetics of HLD200 were similar between adults, adolescents and children with ADHD.

No. 49

Placebo Effects in a PTSD Trial of a CRH Antagonist: Not Limited to Clinical Measures

Poster Presenter: Gabrielle Hodgins

Co-Authors: Boadie W. Dunlop, Philip D. Harvey, Ph.D.

SUMMARY:

Background: In order for a drug to obtain FDA approval, it must significantly outperform a placebo condition. In recent years, the placebo effect seems to have been increasing, as demonstrated in recent antidepressant trials. However, the outcome measures used in these depression trials have been based on clinician ratings, which are highly influenced by reports of patients to the clinicians. In this poster, we examine data from a trial double-blind placebo-controlled study using a CRH antagonist for treatment of posttraumatic stress disorder (PTSD). **Methods:** Women with chronic PTSD were randomized to treatment with either GSK561679 or placebo. Subjects completed clinical and functional assessments prior to the trial, and these were repeated at various intervals during the six-week trial to evaluate clinical, cognitive and functional change. The tests used in the trial included objective and clinician-administered measures of PTSD and depression, along with self-report measures of disability. Additionally, a cognitive and functional skills assessment was administered. We also collected a measure of tendencies to over-report symptoms (response bias). **Results:** GSK561679 failed to produce any significant improvement in the participants of the trial, in that active treatment and placebo did not separate on any measures. There was a substantial placebo effect seen across the self-report, clinical and

performance-based measures. The effect sizes for placebo effects were greater than 1.5 standard deviations across the self-report and clinical measures, including the response bias measure. For neuropsychological test performance, the effect size for change was 0.5 standard deviations. Analyses found that placebo change scores were most highly intercorrelated within assessment modalities: self-report, clinician ratings and performance-based tests. No single variable predicted placebo-related changes across assessment domains. **Discussion:** The women participating in the trial manifested particularly substantial placebo and retest effects. As far as the origin of the large cognition retest effects, one possibility for this finding is that participants had minimal previous experience with performance-based psychological assessments. Thus, initial exposure to assessment in the first week of the trial may have led to an increase in familiarity and comfort at the reassessment. This situation may be unique among drug trials aimed at cognition, where in many other mental illnesses, participants have been exposed to the tests before. In terms of understanding the placebo effects for clinical symptoms, the trial itself may have had some attributes that could be viewed as therapeutic. For treatment-naïve women, repeatedly discussing their trauma during clinical assessments over many sessions may have provided psychotherapeutic benefits congruent with exposure therapy. None of the variables we measured provided a unitary measure suitable to identify placebo responders.

No. 50

A Direct-to-Consumer Education Intervention to Reduce Benzodiazepine (BZD) Prescribing in Elderly Veterans

Poster Presenter: Peter Hauser, M.D.

Co-Authors: Margaret A. Mendes, Pharm.D., Jason P. Smith, Pharm.D., Jennifer Kryskalla, Pharm.D., Maria Brown, Pharm.D., Mark Bounthavong, Pharm.D., M.P.H., Marcos K. Lau, Pharm.D., Juan L. Miranda, M.H.S., David Gray, Pharm.D.

SUMMARY:

Background: In the elderly, chronic benzodiazepine (BZD) use is a prevalent, potentially inappropriate practice associated with increased risk of sedation, memory and cognitive impairment, and falls

resulting in injury. Various interventions to reduce BZD use have been tested, and among them, direct-to-consumer education interventions have been successful but have not been conducted in a large sample of veterans. The purpose of this quality improvement intervention was to determine if an educational brochure (EB) sent directly to elderly veterans can reduce chronic BZD use. **Methods:** An EB, modeled after the study “Eliminating Medications through Patient OWnership of End Results (EMPOWER),” describing risks of BZD was developed for veterans served by Veteran Affairs (VA) facilities in southern California (CA) and southern Nevada (NV). The EB included a prompt for veterans to discuss BZD use with their provider at their next clinic visit. Veterans were eligible if they were 65 or older, had more than a 60-day supply of BZD within the past year, and had a BZD prescription released within 200 days prior to index date (clinic visit date). The EB was mailed once to 3,896 veterans on a rolling basis from December 2014 to February 2016 and two to four weeks before their clinic visit with the provider who prescribed BZD. BZD use was evaluated nine to 24 months after EB was sent. In addition, a retrospective cohort study using individual 1:1 propensity score matching was performed to evaluate the association between EB and BZD discontinuation at nine and 12 months. **Results:** Of 3,896 veterans included in analysis, 1,847 (47.4%) decreased BZD dose, 458 (11.7%) tapered then discontinued BZD (no refill for three or more consecutive months), 455 (11.7%) immediately discontinued BZD (no refill for three or more consecutive months), 607 (15.6%) increased BZD dose, and 529 (13.6%) had no change in dose. Of 1,847 veterans who decreased BZD dose, the average daily dose (ADD) prior to index date was 3.17mg lorazepam equivalents (LE), ADD reduction was 1.12mg LE and final ADD was 2.04mg LE; 596 (32.3%) reduced their ADD by more than 50% (ADD prior to index date=2.68mg LE; final ADD=0.86mg LE). In the retrospective cohort study, 22.7% (306 of 1,351) of veterans who were mailed the EB (EB+) versus 16.8% (227 of 1,351) of veterans who were not mailed the EB (EB-) discontinued BZD after nine months ($p<0.0001$; odds ratio [OR]=1.4, 95% confidence interval [CI] [1.2, 1.8]), and 31.6% (427 of 1,351) of EB+ veterans versus 26.2% (355 of 1,351) of EB- veterans discontinued BZD after 12 months

($p=0.002$; OR=1.3, 95% CI [1.1, 1.5]). **Conclusion:** In summary, 23.4% of veterans discontinued BZD, and an additional 47.4% reduced their ADD of BZD by 1.1mg LE. Similar findings were reported with the propensity score-matched cohorts.

No. 51

Efficacy of HLD200 on Early Morning and Late Afternoon/Evening Functioning Assessed by Individual Item Ratings on the PREMB-R in Children With ADHD

Poster Presenter: Floyd R. Sallee

Lead Author: Steven Pliszka

Co-Authors: Valerie Arnold, Andrea Marraffino, Norberto DeSousa, Bev Inledon, Timothy Wilens, M.D., Jeffrey Newcorn

SUMMARY:

Background: A pivotal phase 3 trial of children with attention-deficit/hyperactivity disorder (ADHD) previously evaluated the safety and efficacy of HLD200, a delayed-release and extended-release formulation of methylphenidate (MPH). In addition to improving ADHD symptoms, HLD200 reduced at-home functional impairments during the early morning and late afternoon/evening versus placebo (PBO), as measured by the validated Parent Rating of Evening and Morning Behaviors-Revised, Morning (PREMB-R AM) and Evening (PREMB-R PM) subscales, respectively. This post hoc analysis evaluated the effect of HLD200 versus PBO on individual item scores of PREMB-R AM and PREMB-R PM. **Methods:** Data were analyzed from a pivotal, randomized, double-blind, multicenter, PBO-controlled, parallel-group, phase 3 trial of HLD200 in children (6–12 years old) with ADHD (NCT02520388). Using the three-item PREMB-R AM and eight-item PREMB-R PM, both key secondary endpoints, investigators evaluated impairments in early morning and late afternoon/evening functioning, respectively, by scoring each item on a severity scale of 0 to 3, with 0 denoting “no impairment” and 3 denoting “a lot of impairment.” Since baseline item scores were not comparable between treatment groups, statistical differences in mean changes from baseline to endpoint (i.e., after three weeks of treatment) were determined for each item using two-sided, unpaired t-tests without correction for multiplicity. **Results:** A total of 161 children were

included in the intent-to-treat population (HLD200, N=81; PBO, N=80). The mean HLD200 dose achieved after three weeks of treatment was 68.1mg.

Following three weeks of treatment, there were significant reductions in the mean changes from baseline in PREMB-R AM (-1.39 vs. -0.73; $p<0.001$) and PREMB-R PM (-0.85 vs. -0.47; $p=0.001$) item scores in children on HLD200 versus PBO. In particular, mean individual item scores from baseline were significantly reduced on all three items of the PREMB-R AM (all $p<0.0014$; “getting up and out of bed,” “getting ready” and “arguing or struggling in the morning”). Similarly, mean individual item scores from baseline were significantly reduced on four out of eight items of the PREMB-R PM ($p<0.01$ in three items [“sitting through dinner,” “playing quietly” and “settling down and getting ready for bed”] and $p<0.05$ in one item [“falling asleep”]). There was a trend toward a reduction on three other items of the PREMB-R PM ($p<0.08$). Distributions of the severity ratings for each of the 11 items will be presented. No serious TEAEs were reported, and all TEAEs were consistent with those of MPH. **Conclusion:** After three weeks of treatment, HLD200 significantly reduced all PREMB-R AM item scores, including “getting out of bed,” and many of the PREMB-R PM item scores.

No. 52

Efficacy and Safety of Triple-Bead Mixed Amphetamine Salts (SHP465) in Adults With ADHD: A Randomized, Double-Blind, Placebo-Controlled Trial

Poster Presenter: Richard Weisler

Co-Authors: Michael Greenbaum, Valerie Arnold, Ming Yu, Brian Yan, Brigitte Robertson, Margo Jaffee

SUMMARY:

Background: Some attention-deficit/hyperactivity disorder (ADHD) patients may benefit from a once-daily, sustained-release treatment option. Triple-bead mixed amphetamine salts (MAS) is a once-daily, triple-bead, sustained-release, single-entity MAS product for ADHD. **Objective:** Evaluate the efficacy and safety of triple-bead MAS versus placebo (PBO) in adults with ADHD. **Methods:** This randomized, double-blind, forced-dose study enrolled adults (age 18–55) with DSM-5–defined ADHD and baseline ADHD-RS with prompts total

scores of 28 or higher. Participants were randomized 1:1:1 to PBO, 12.5mg triple-bead MAS (weeks 1–4: 12.5mg), or 37.5mg triple-bead MAS (week 1: 12.5mg; week 2: 25mg; weeks 3–4: 37.5mg). Primary (ADHD-RS with prompts total score change from baseline to week 4) and key secondary (Clinical Global Impressions–Improvement [CGI-I] score at week 4) efficacy was assessed in the full analysis set (FAS; randomized participants taking one or more drug doses and having one or more post-dose primary efficacy assessments) using linear mixed-effects models for repeated measures. Safety and tolerability was assessed in the safety analysis set (randomized participants taking one or more drug doses). **Results:** The safety analysis set and FAS, respectively, included 271 (PBO, N=89; triple-bead MAS [12.5mg, N=92; 37.5mg, N=90]) and 263 (PBO, N=86; triple-bead MAS [12.5mg, N=89; 37.5mg, N=88]) participants. The least squares (LS) mean ADHD-RS with prompts total score change from baseline to week 4 was significantly greater with triple-bead MAS than PBO (PBO: -10.4, 95% CI [-13.0, -7.8]; 12.5mg triple-bead MAS: -18.5, 95% CI [-21.1, -15.9], $p<0.001$ vs. PBO, effect size=0.67; 37.5mg triple-bead MAS: -23.8, 95% CI [-26.5, -21.2], $p<0.001$ vs. PBO, effect size=1.11). The LS mean CGI-I score at week 4 was significantly lower (indicating greater improvement) with triple-bead MAS than PBO (PBO: 3.1, 95% CI [2.9, 3.4]; 12.5mg triple-bead MAS: 2.4, 95% CI [2.1, 2.6], $p<0.001$ vs. PBO, effect size=0.68; 37.5mg triple-bead MAS: 1.9, 95% CI [1.6, 2.1], $p<0.001$ vs. PBO, effect size=1.11). Treatment-emergent adverse event (TEAE) frequencies were 34.8%, 63.0% and 66.7% with PBO and 12.5mg and 37.5mg triple-bead MAS, respectively. TEAEs reported at frequencies of 10% or higher (PBO, 12.5mg triple-bead MAS, 37.5mg triple-bead MAS) were decreased appetite (4.5%, 19.6%, 30.0%), dry mouth (3.4%, 14.1%, 22.2%), insomnia (1.1%, 13.0%, 11.1%), and headache (4.5%, 6.5%, 12.2%). Mean±SD changes from baseline at the final on-treatment assessment (PBO, 12.5mg triple-bead MAS, 37.5mg triple-bead MAS) were 0.1±8.35, 3.3±10.52 and 7.1±11.48bpm for pulse and -0.8±9.99, 0.2±7.24 and 1.7±9.99mmHg for systolic blood pressure (BP), respectively.

No. 53

Transient Intermittent Aphasia in Acute Lithium

Toxicity: A Case Report and Brief Review

Poster Presenter: Subramoniam Madhusoodanan

Co-Authors: Varudhini Reddy, Sonya Mohan, D.O.

SUMMARY:

Background: Lithium is known to cause certain neurological deficits. However, reports of aphasia secondary to lithium toxicity are scant. We report the case of a 70-year-old African-American female with a history of schizoaffective disorder and mild dementia who developed transient intermittent aphasia secondary to lithium toxicity. **Case:** The patient was admitted because of agitation, delusional behavior, and loud and pressured speech. Her previous medications included divalproex sodium 500mg twice daily by mouth, valproic acid 250mg daily by mouth, risperidone 3.5mg twice daily by mouth, lorazepam 1mg twice daily by mouth, amlodipine besylate 5mg daily by mouth, levothyroxine sodium 25µg daily by mouth, gabapentin 300mg daily by mouth, amantadine HCl 100mg twice daily by mouth, and aspirin 81mg daily by mouth. Since the patient's symptoms have not improved, she was started on lithium 300mg twice daily by mouth on November 8, 2016, and titrated up to 300mg twice daily by mouth and 450mg by mouth every evening at bedtime on November 15, 2016. Her lithium levels ranged from 0.4mEq/L on November 11, 2016, to 1.5mEq/L on November 22, 2016. The patient was observed to have aphasia symptoms intermittently at a lithium level of 1.5mEq/L. Head CT scan and neurology consultations were unremarkable. The Naranjo Adverse Drug Reaction Probability Scale score was 8, in the probable range for an adverse drug reaction. The patient's sodium was also found to be high at 148mmol/L. **Results:** Lithium was discontinued, and the patient rehydrated with intravenous fluids at the recommendation of the nephrologist. The patient's aphasia resolved completely in two to three days. **Conclusion:** Clinicians should recognize this rarely reported side effect of lithium, particularly in patients at risk for volume depletion, and closely monitor fluid intake, lithium level and potential side effects.

No. 54

In Adults, Lisdexamfetamine Dimesylate Treatment Substantially Improves ADHD Symptoms via

Improvement in Executive Functions

Poster Presenter: Thomas E. Brown, Ph.D.

Co-Authors: Caleb Bliss, Victor Otcheretko

SUMMARY:

Background: Executive function (EF) deficits are believed to be important impairments associated with adult attention-deficit/hyperactivity disorder (ADHD) and may differentiate ADHD from other disorders more adequately than *Diagnostic and Statistical Manual for Mental Disorders (DSM)* criteria alone. However, the contribution of improvement in EF from stimulant treatment to improvements of *DSM*-based ADHD symptoms has not yet been established. In a study of adults (aged 18–55) with *DSM, Fourth Edition, Text Revision (DSM-IV-TR)*-defined ADHD; a self-report Behavior Rating Inventory of Executive Function-Adult Version (BRIEF-A); a Global Executive Composite (GEC) T-score 65 or over; and a baseline ADHD-Rating Scale, Fourth Edition (ADHD-RS-IV) total score over 28, lisdexamfetamine dimesylate (LDX) significantly improved EF, as measured by BRIEF-A GEC T-score, and reduced the symptoms of ADHD, as measured by ADHD-RS-IV with adult prompts total score. Given the association of EF with adult ADHD, it was hypothesized that LDX effects on EF may mediate LDX effects on ADHD symptom improvement in adults with ADHD and EF deficits. **Objective:** Determine if LDX treatment effects on ADHD symptoms were mediated through EF improvements in the aforementioned study. **Methods:** This randomized, double-blind, placebo (PBO)-controlled study enrolled adults with ADHD and EF deficits. Participants were randomized to 10 weeks of PBO or dose-optimized LDX (30, 50 or 70mg). The primary efficacy endpoint was change from baseline at week 10/early termination (ET) in self-report BRIEF-A GEC T-score. The BRIEF-A is a validated self-report measure of EF with GEC T-scores 65 or over indicative of clinically significant EF impairment. ADHD-RS-IV with adult prompts total score change from baseline to week 10/ET was a secondary efficacy endpoint. In this post hoc analysis, relationships between ADHD symptom changes and EF changes from baseline at week 10/ET were examined with recursive path analyses involving treatment (LDX vs PBO), mediator (self-report BRIEF-A GEC T-score) and outcome (ADHD-RS-IV with adult

prompts total score); baseline mediator and outcome values were also included in the model.

Results: The mediation proportion (indirect treatment effect/total treatment effect) of the change from baseline in self-report BRIEF-A GEC T-score at week 10/ET on the change from baseline in ADHD-RS-IV total score at week 10/ET was 0.62 (indirect treatment effect coefficient=-6.85, 95% CI [-9.83, -3.86]; total treatment effect coefficient=-11.12, 95% CI [-14.88, -7.37]). This suggests that 62% of the LDX treatment effect on ADHD symptoms in the population studied was mediated by improvement in EF.

No. 55

Consistent Efficacy of HLD200 on Early Morning Functioning in Children With ADHD: Analysis of BSFQ Item Ratings

Poster Presenter: Valerie Arnold

Lead Author: Timothy Wilens, M.D.

Co-Authors: Steven Pliszka, Andrea Marraffino, Norberto DeSousa, Bev Incledon, Floyd R. Sallee, Jeffrey Newcorn

SUMMARY:

Background: The safety and efficacy of evening-dosed HLD200, a delayed-release and extended-release formulation of methylphenidate (MPH), was previously evaluated in a pivotal phase 3 trial of children with attention-deficit/hyperactivity disorder (ADHD). In addition to demonstrating an improvement in ADHD symptoms, HLD200 significantly reduced overall at-home functional impairment during the early morning, late afternoon and evening compared with placebo (PBO). The validated 20-item Before School Functioning Questionnaire (BSFQ), a key secondary endpoint, was used to measure early morning functional (EMF) impairment after three weeks of treatment. This post hoc analysis evaluated the efficacy of HLD200 versus PBO in reducing the individual item scores on the BSFQ. **Methods:** Data were analyzed from a pivotal, randomized, double-blind, multicenter, PBO-controlled, parallel-group, phase 3 trial of HLD200 in children (6–12 years old) with ADHD (NCT02520388). Using the 20-item BSFQ, investigators evaluated EMF impairment by scoring each item on a severity scale of 0 to 3, where 0 denotes “no impairment” and 3 denotes “severe impairment.” Treatment group

differences at endpoint (i.e., after three weeks of treatment) on each individual BSFQ item were evaluated using two-sided, unpaired t-tests without correction for multiplicity. **Results:** Of 163 children randomized to treatment across 22 sites, 161 were included in the intent-to-treat population (HLD200, N=81; PBO, N=80). At baseline, mean BSFQ item scores were comparable between the HLD200 and PBO groups (20-item mean=2.21 vs. 2.24). Similarly, no significant baseline differences were observed between treatment groups across any of the 20 items. After three weeks of treatment, the mean HLD200 dose achieved was 68.1mg, and mean BSFQ item scores were significantly reduced in the HLD200 versus PBO groups (20-item mean=0.91 vs. 1.43; $p=0.0002$). Mean individual item scores were also significantly reduced in 19 out of 20 items in children on HLD200 versus those on PBO ($p<0.001$ in three items [time awareness, listening, attention]; $p<0.01$ in 11 items [being quiet, following directions, distraction, talkativeness, forgetfulness, organization, silliness, hygiene, breakfast, interrupting, getting to school]; and $p<0.05$ in 5 items [procrastination, independence, awaiting turn, hyperactivity, dressing]). The only item with no significant difference was "misplacing/losing items" (HLD200: 1.08; PBO: 1.30; $p=0.218$). Distributions of the severity ratings for each of the 20 items will be presented. No serious TEAEs were reported, and all TEAEs were consistent with those of MPH. **Conclusion:** HLD200 not only significantly improved the overall BSFQ score, but also consistently improved scores on all but one of the individual BSFQ items versus PBO. These findings suggest that HLD200 improves functioning across commonly reported areas of dysfunction in the early morning.

No. 56

Baclofen-Induced Mania in Tardive Dystonia/Tardive Dyskinesia and Alcohol-Dependent Patients

Poster Presenter: Marion E. Wolf, M.D.

SUMMARY:

Background: Baclofen, a selective GABA type B receptor, has been used in the treatment of neurological disorders with spasms for almost 50 years. **Methods:** All available medical records of eight male psychiatric inpatients, who we treated

with baclofen during a two-year period, were reviewed. Their ages varied from 29 to 65, and the duration of neuroleptic exposure ranged from five to 30 years. Patients were evaluated by team members using the Brief Psychiatric Rating Scale and the Simpson Tardive Dyskinesia Rating Scale. We did not treat patients with alcohol dependence with baclofen but reviewed cases managed with this drug elsewhere. **Results:** Treatment with baclofen resulted in significant improvement of the movement disorder in the three tardive dystonia patients studied. Baclofen did not have therapeutic effects on the five patients with choreoathetoid dyskinesias. Baclofen adversely affected the mental status of all eight patients in the study, and one of them developed severe mania. There are conflicting results on the efficacy of baclofen as noted in clinical trials conducted for the treatment of alcohol dependence, but there are many documented cases of baclofen-induced mania in the literature from various medical centers. It appears that although baclofen may have a relatively mild safety profile in clinical trials with inclusion and exclusion criteria, in general practice, baclofen has major safety concerns related to its accidental/intentional overdose in combination with alcohol or other drugs, leading to severe toxicity with deep coma and respiratory depression. **Discussion:** The results on the efficacy and safety of high-dose baclofen will be reviewed. Although baclofen might help some patients with alcohol dependence, it should be noted that high-dose baclofen remains off label, and clinicians need to recognize the risks attendant to its use.

No. 57

Subcutaneous Self-Administered Ketamine for Suicidality and Treatment-Resistant Depression:

Case Series

Poster Presenter: Aron Tendler, M.D.

Co-Authors: Laura A. DeLuca, M.D., Elyssa Sisko, Noelia Rodriguez, M.A., Shlomo Tendler, M.D.

SUMMARY:

Background: Low-dose intravenous (IV) ketamine has rapid antidepressant effects. Its use is limited by the cost for IV administration and poor durability. Ketamine anesthesia is commonly administered intramuscularly, and subcutaneous (SQ) administration is less painful, cheap and easy to

apply, since the drug comes in 100mg/kg concentrations, which can fit into an insulin syringe. **Methods:** Between 2008 and 2016, we treated 137 patients with SQ ketamine 0.25mg/kg. The first dose was administered in the office, and patients were observed for two hours. **Results:** 113 of 137 (82%) had a lifting of their suicidality and/or antidepressant effect that remained after the acute effects of the drug wore off. The beneficial effects of the ketamine lasted anywhere from 12 to 72 hours, at which point patients could repeat the dose at home independently. Of the 24 patients who did not benefit from SQ ketamine at 0.25mg/kg, four tried 0.5mg/kg SQ and another three tried IV ketamine at higher doses without benefit. Ketamine was initially intended for emergencies or as a bridge during a medication change. However, 46 patients continued use of the drug beyond one month, several for over three years, while attempting multiple other classes of medications. These ketamine maintenance (KM) patients required dosage escalation in 5mg increments, several to doses above 2mg/kg per day. During times of crisis, several patients needed dosing multiple times a day. Common adverse events in the entire group were tolerable and temporary, including sedation, dizziness, dissociation, nausea, illusions, fears, discomfort, bruising, and itching at the injection site. Eight KM patients misused their ketamine by taking higher doses, and one injected it intravenously; six of them had prior history of addiction. One KM patient attempted suicide with ketamine 5.5mg plus clonazepam 2mg, which she slept off, and one KM patient with autoimmune hepatitis had increased elevated liver enzymes into the hundreds. No physiological withdrawal was evident, despite abrupt ketamine discontinuation, no matter the duration or dosage of the patients' medication. No drug interactions were evident with any SSRI, SNRI, MAOI, atypical antipsychotic, or sedative hypnotic. Ketamine did not alter the seizure threshold for ECT or the motor threshold for TMS. IM ketamine dosing was identical to SQ dosing; however, oral ketamine dosing had inconsistent dose effects even in the same patients from day to day. **Conclusion:** SQ ketamine is a safe and useful medication that suicidal and treatment-resistant patients can self-administer. Patients with a history of addiction should not be given the entire month's supply to self-administer. Dosing more than once a

day on a daily basis raises concerns that the patient is benefiting only during the period they are intoxicated.

No. 58

Twice-Weekly dTMS Monotherapy Was Effective in Maintaining Acute-Phase Responders and Increasing the Response Rate for Non-Responder TRD Patients

Poster Presenter: Aron Tendler, M.D.

Co-Authors: Abraham Zangen, Ph.D., Mark George, M.D., Yiftach Roth, Ph.D.

SUMMARY:

Background: dTMS has been shown to be safe and effective for treatment-resistant depression. Our goal was to analyze the efficacy of continuation dTMS monotherapy at twice a week for 12 weeks following the acute phase of four weeks at five times a week treatment in the active arm of the Brainsway multicenter double-blind treatment-resistant depression study. A recent study found that a significant proportion of non-responders after four weeks of acute dTMS treatment achieved responder status with the continued twice-weekly treatment. We assessed the probability of response in active dTMS recipients over 16 weeks and the durability of clinical response among patients who achieved response at the end of the four-week acute phase, for whom the continuation phase is a maintenance phase. **Methods:** Eighty-nine antidepressant-resistant outpatients, aged 22 to 68, with a diagnosis of MDD single or recurrent episode, CGI-S score of 4 and HDRS-21 score of 20, received the active treatment. Thirty patients met responder criteria (50% decrease in HDRS-21) at the conclusion of the four-week acute phase. Kaplan-Meier survival curve (time to event [response]) was used to characterize outcomes during weeks 1 to 16 in the whole sample (N=89) of active dTMS recipients. Percentage of time in response and in remission (HDRS-21<10) for each patient and percentage of patients in response/remission at each time point were calculated for four-week responders (N=30) during the continuation phase. **Results:** Of 89 subjects who received active treatment, 59 (66.3%) achieved responder status at any time point. Of 23 acute-phase non-responders who continued for two weeks, 15 (65.2%) achieved responder status.

Among the responders at the end of week 4 (N=30), the vast majority of patients showed sustained durability throughout the continuation phase (their maintenance phase). 73.9±7.7% of patients were in responder status, and 59.8±8.4% of patients were in remission at each time point (weeks 5–16). Nineteen of 30 (63.3%) responders at the end of week 4 completed the entire 16 weeks. Mean±SEM time in the continuation phase was 9.5±0.7 weeks. Mean±SEM time in response was 7.1±0.7 weeks and in remission was 5.9±0.8 weeks. Mean±SEM of percentage of time in response out of their total time in the twice weekly phase was 74.7±5.4% and of time in remission was 59.7±7.1%. Twelve of 30 patients (40%) spent 100% of their time in the twice weekly phase in response, and nine of 30 (30%) spent 100% of their time in remission. Twenty-four of 30 (80%) spent 60% or more of their time in response, and 18 of 30 (60%) spent 60% or more of their time in remission. **Conclusion:** The vast majority of patients who continued twice weekly dTMS treatments reached response. The odds for a patient to reach response increased with the number of dTMS sessions. Twice-weekly dTMS maintenance monotherapy was efficacious for acute phase responders.

No. 59

Tele-Team: Assessing Telepsychiatry in an Inpatient Setting

Poster Presenter: Rebecca Kornbluh, M.D., M.P.H.

Co-Author: Robert Withrow, M.D.

SUMMARY:

Background: The use of telepsychiatry has expanded in many areas of clinical practice. Emergency, outpatient and correctional telepsychiatry programs are growing. Available research shows that patients are satisfied with telepsychiatry contacts across settings. However, the research literature and a review of contracting agencies indicates that implementation in inpatient hospitals lags behind other settings. Inpatient telepsychiatry presents unique challenges. The multidisciplinary treatment team is central to treatment planning and crisis intervention. This study, therefore, focuses assessment on how members of multidisciplinary treatment teams in a large, state inpatient hospital compare telepsychiatry to onsite psychiatry.

Methods: An anonymous survey was sent to all staff working at a large, rural, state psychiatric hospital. This hospital implemented telepsychiatry over one year ago due to chronic psychiatrist shortages. The survey was left online for one week, and data were collected and analyzed. Questions focused on team communication and psychiatrist availability. **Results:** Eighty staff members responded to the survey. Fifty (62.5%) respondents worked on a unit with a telepsychiatrist, and 30 (37.5%) worked on a unit with an onsite psychiatrist. Staff were distributed across disciplines, with the largest representation from nurses (29%) and psychologists (23%). In questions related to communication, respondents working on the telepsychiatric units reported that telepsychiatrists were more available than onsite psychiatrists for regular meetings (84.2% vs. 68.8%) and slightly less available in emergencies (75.7% vs. 80.0%). In questions related to satisfaction, respondents working with telepsychiatrists were more likely to believe that the psychiatrist considered other staff opinions (84.2% vs. 73.3%). However, a slightly lower percentage of staff working with telepsychiatrists responded that they wanted to continue working with their current psychiatrist (81.6% vs. 84.6%). Further analysis shows that the psychiatric technicians are overrepresented in the respondents working with telepsychiatrists (26.0% vs. 10.0%), and fewer want to continue working with their current psychiatrist (45.5% vs. 11.1%). When their results are eliminated, a higher portion of staff want to continue working with their current psychiatrist (87.1% vs. 85.7%). **Conclusion:** Psychiatric technicians were less satisfied with the team psychiatrist, in general. In the realms of availability and satisfaction, telepsychiatry is comparable to onsite psychiatry from a staff perspective. In general, staff members thought that telepsychiatrists were as present on units and inclusive of other team members.

No. 60

Early Improvement in Somatic or Psychic Anxiety as a Predictor of Response/Remission in Patients With GAD: Post Hoc Analysis of Three Vilazodone Studi

Poster Presenter: Anita Clayton

Co-Authors: Raffaele Migliore, Cheng-Tao Chang, Carl P. Gommoll, John Edwards

SUMMARY:

Background: Vilazodone (VLZ), approved for the treatment of major depressive disorder in adults, has also shown efficacy in three double-blind, placebo (PBO)-controlled trials of generalized anxiety disorder (GAD): one stable-dose study (20 or 40mg per day), NCT01629966, and two flexible-dose studies (20–40mg per day), NCT01766401 and NCT01844115. Data from these trials were analyzed post hoc to evaluate whether early improvement with VLZ was predictive of later response or remission. **Methods:** In all three studies, VLZ was titrated to 20mg per day over two weeks. Treatment with VLZ 40mg per day began at week 3 (fixed dose) or week 3/week 5 (flexible dose). In this post hoc analysis, early improvement was defined as a decrease of 30% or more from baseline to week 2 in Hamilton Anxiety Rating Scale subscale scores (psychic anxiety [HAM-A-Psych], somatic anxiety [HAM-A-Som]). Response was defined as a decrease of 50% or more from baseline to week 8 in the HAM-A total score; remission was defined as HAM-A total score of 7 or less at week 8. Parameters in the predictor model included positive predictive value (PPV) and sensitivity. **Results:** At week 2, more patients had early improvement with VLZ (20mg per day) relative to placebo for HAM-A-Psych (VLZ, 45.8%; PBO, 35.6%) and HAM-A-Som (VLZ, 45.0%; PBO, 41.4%). Sensitivity values for HAM-A-Psych, indicating the percentages of responders/remitters who were early improvers, were as follows: response (VLZ, 64.0%; PBO, 59.8%) and remission (VLZ, 72.2%; PBO, 65.8%). Sensitivity values for HAM-A-Som were as follows: response (VLZ, 62.6%; PBO, 63.0%) and remission (VLZ, 68.8%; PBO, 70.0%). PPV values for HAM-A-Psych, indicating the percentages of patients with early improvement who had subsequent response/remission, were as follows: response (VLZ, 62.6%; PBO, 61.5%) and remission (VLZ, 41.0%; PBO, 37.1%). PPV values for HAM-A-Som were as follows: response (VLZ, 62.3%; PBO, 55.6%) and remission (VLZ, 39.7%; PBO, 33.9%). All predictor models were statistically significant (all $p < 0.001$). **Conclusion:** In adults with GAD, early improvements in psychic and somatic anxiety were significant predictors of later response and remission. However, the results of this post hoc predictor analysis may be limited by some VLZ-treated patients not having reached their optimal

therapeutic dose by week 2. This research was supported by Forest Research Institute, Inc., an Allergan affiliate.

No. 61**Neurotrophins and Neuroinflammation in Fetuses Exposed to Maternal Depression and Anxiety Disorders During Pregnancy: A Comparative Study on Cord Blood**

Poster Presenter: Nursel Selcukler, M.D.

Co-Authors: Bilge Burcak Annagur, Ali Annagur, Hikmet Akbulut, Fikret Akyurek, Cetin Celik

SUMMARY:

Background: In recent years, there have been changes in the approach to maternal psychiatric disorders and their effects on the fetus, with the focus redirected to the search for biological markers. Neurotrophic factors and inflammatory processes have received particular attention in the past few years. In this study, we aimed to investigate BDNF, NT-3, FGF-2, TNF- α , and neopterin levels in the cord blood of newborn infants born to mothers with MDD or AD and to mothers without psychiatric disorders during pregnancy. **Methods:** The study recruited women who had normal delivery or cesarean birth at the Obstetric Clinic, Selcuk University Medical Faculty Hospital. The study was approved by the Selcuk University Medical Faculty's Ethics Committee. The study's objectives and procedures were explained, and written informed consent was obtained from the participants in accordance with the Declaration of Helsinki. According to the Structured Clinical Interview for the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*, the study sample (N=136) consisted of three groups: mothers with major depressive disorder (MDD group, N=25), mothers with anxiety disorder (AD group, N=18) and mothers without any psychiatric disorders (no diagnosis [ND] group, N=93). During the delivery/cesarean section, a blood sample was obtained from the umbilical cord. Serum concentrations of BDNF, NT-3, FGF2, TNF- α , and neopterin were determined by enzyme-linked immunosorbent assay (ELISA), according to the manufacturer's procedure. Clinical and biochemical characteristics were assessed. **Results:** We did not find a significant difference among the three study groups with regard to BDNF, NT-3, and

TNF- α levels. The ANOVA test indicated statistically significant differences in FGF-2 levels and neopterin between the study groups. The newborns of mothers with AD had significantly higher FGF-2 levels ($p < 0.001$) and significantly higher neopterin levels ($p < 0.05$) when compared with those of mothers with MDD and healthy mothers.

Conclusion: This study sheds light on the effects of maternal anxiety disorders on the fetus in terms of fetal blood FGF-2 and neopterin levels. Our results should be replicated through further prospective studies with a larger sample size. This study was supported by Coordinatorship of Selcuk University's Scientific Research Projects.

No. 62

The Impact of Perinatal Anxiety on Mothers and Babies: A Systematic Review and Meta-Analysis

Poster Presenter: Sophie Grigoriadis, M.D., Ph.D.

Co-Authors: Lisa Graves, M.D., Miki Peer, Ph.D., Lana Mamisashvili, M.S.W., Simone Vigod, M.D., M.Sc., Cara Brown, M.D., Amy Cheung, M.D., M.Sc., Hiltrud Dawson, Neil Rector, Ph.D., Peggy Richter, M.D., George Tomlinson, Ph.D., Meir Steiner, M.D., Ph.D.

SUMMARY:

Background: Prenatal anxiety (PA) is common, affecting about 13% of all pregnancies, yet the evidence regarding its effect on maternal/child outcomes has been inconsistent. Previous reviews and meta-analyses have narrowly focused on preterm birth and low birth weight in relation to PA.

Objective: Conduct a systematic review and meta-analysis of the association between PA and diverse perinatal outcomes, focusing on clinically significant levels of anxiety. **Methods:** The systematic literature review was guided by an advisory committee of key stakeholders (i.e., representatives from psychiatry, primary care, pharmacology, obstetrics, neonatology, public health, and patient advocacy). Ovid MEDLINE, Embase, PsycINFO, CINAHL, and the Cochrane Library were searched from their start dates to December 31, 2015. Keywords utilized included anxiety, phobia, posttraumatic stress disorder, obsessive-compulsive disorder, pregnancy, delivery outcomes, preterm birth, premature delivery, low birth weight, birth weight, gestational age, Apgar, infant outcomes, congenital malformation, birth defect, maternal outcomes, and

preeclampsia. Studies were included if they were published in English and reported prospectively collected data comparing perinatal outcomes of non-anxious women to women with PA, clinically diagnosed or using a cutoff on a validated scale. 1,429 abstracts were reviewed; 271 articles were retrieved, and 29 were included. Two independent reviewers extracted data and assessed article quality. Random effects models were utilized for outcomes with data from three or more studies; subanalyses examined possible moderators (e.g., study quality, adjustment for confounders, anxiety assessment by diagnosis vs. scale, etc.). **Results:** PA was associated with increased odds of preterm birth (pooled odds ratio [OR]=1.48; 95% CI [1.31, 1.67], 15 studies), low birth weight (pooled OR=1.71; 95% CI [1.44, 2.03], 12 studies), small for gestational age (pooled OR=1.48; 95% CI [1.24, 1.78], six studies), spontaneous preterm birth (pooled OR=1.32; 95% CI [1.07, 1.64], three studies), and spontaneous preterm labor (pooled OR=1.72; 95% CI [1.25, 2.38], three studies). Heterogeneity between studies was not significant, and moderators did not significantly alter the results. Inconsistent associations were seen between PA and preeclampsia and delivery by caesarian section with heterogeneity between studies for both outcomes. **Discussion:** Prenatal anxiety is associated with multiple adverse perinatal outcomes. Given that treatment uptake and/or continuation is low, there is an urgent need to engage women in effective, acceptable treatments to reduce the negative sequelae of PA for maternal and fetal/infant health.

No. 63

Treatment-Resistant Depression and Risk of Suicide: A Retrospective Observational Analysis in the U.S.

Poster Presenter: Allitia DiBernardo, M.D.

Lead Author: Gang Li

Co-Authors: Qiaoyi Zhang, Grace Wang, Julia Wang, Tony Amos, Pharm.D., M.S.

SUMMARY:

Background: Treatment-resistant depression (TRD) refers to major depressive disorder (MDD) patients who fail to achieve remissions after two or more antidepressant treatments. TRD was reported in approximately 30% of MDD cases. The association

between suicidal behavior and TRD has not been well assessed in comparison with non-TRD MDD.

Methods: This retrospective cohort study utilizes Optum Clinformatics™ Extended, a claims database in the U.S. Adult patients (age 18 or older) received antidepressants (AD) between January 2012 and September 2014. The first AD dispensing is defined as the index date. All patients were required to have no AD pharmacy claims prior to the index date and present MDD or depression diagnosis within 30 days of the index date. Patients were required to be continuously enrolled in both medical and pharmacy benefits in the periods one year before (baseline) and one year after index date (follow-up). Among the selected patients, those who had a third AD regimen with each of the first two regimens at adequate duration (28–180 days) were classified as TRD; patients that did not meet the criteria were non-TRD MDD. ICD-9 codes were used to identify suicidal ideation, self-harm, poisoning, and injury undetermined. A composite of the latter three was defined as “suicide attempt;” a composite of suicidal ideation and suicide attempt was defined as “suicidal behavior.” TRD and non-TRD cohorts were compared on the risk of suicidal behavior and its two components using a logistic regression model that adjusted for patient baseline characteristics, including age, gender, MDD or other depression diagnosis, insurance type, anxiety diagnosis, drug abuse diagnosis, Charlson Comorbidity Index (CCI), and the value of the variable during a one-year baseline period. **Results:** Among 55,616 pharmacologically treated MDD patients, 5,676 (10%) patients met the criteria for TRD. Compared to non-TRD patients, TRD patients were younger (mean age 44.9 vs. 47.2, $p < 0.0001$) and had more comorbidities (CCI 1.20 vs. 1.09, $p = 0.0252$). After adjusting for baseline characteristics, TRD was associated with a significantly higher risk of suicidal behavior than non-TRD, with the odds ratio (OR) of 2.5 (95% CI [2.0, 3.0]), and its two components—suicidal ideation (OR=3.0, 95% CI [2.4, 3.8]) and suicide attempt (OR=2.4, 95% CI [1.8, 3.2]) (all $p < 0.0001$). **Conclusion:** This retrospective claims database study showed that the TRD cohort is associated with a higher risk of suicidal behavior, compared to the non-TRD MDD cohort. An effective TRD treatment strategy could potentially reduce the associated risk of suicidal behavior.

No. 64

Case Study of Magnesium in the Treatment of Impulse Attack Suicidality Disorder

Poster Presenter: David V. Sheehan, M.D., M.B.A.

Co-Author: Jennifer Giddens

SUMMARY:

Objective: Investigate the effect of high magnesium oxide coupled with reduced dietary calcium intake (+Mg-Ca) in the treatment of impulse attack suicidality disorder (IASD). **Methods:** Using sensitive assessment instruments (the Sheehan-Suicidality Tracking Scale [S-STSS], the Tampa-Classification Algorithm for Suicidality Assessment [T-CASA]) for suicidality phenomena and event tracking, we tracked the effect on suicidality of magnesium oxide in doses up to 1,000mg per day in four divided doses daily, coupled with a reduced dietary intake of calcium below 300mg per day (less than 30% of recommended daily intake). The T-CASA was rated daily and the S-STSS rated weekly over a 166-week (3.2 year) period covering 43,690 separate suicidality events. The subject had a 25-year history of daily suicidality that did not respond to any prior treatment, including 11 antidepressants, six atypical antipsychotics, five anticonvulsant mood stabilizers, and three adequate trials of lithium at therapeutic doses. **Results:** The +Mg-Ca completely eliminated the subject’s suicidality. After six months free of suicidality, the subject stopped the magnesium oxide, while maintaining the low calcium intake. Within 48 hours, she had a full relapse of all her prior suicidality and suicidal impulse attacks. This worsened over the ensuing week. On restarting the magnesium oxide, the suicidality decreased over the following eight days, after which she remained suicidality free for the ensuing seven months. **Conclusion:** The data from this case study suggest that high-dose magnesium oxide coupled with reduced dietary calcium intake merits further investigation for the treatment of impulse attack suicidality disorder.

No. 65

A Classification of Suicidality Disorder Phenotypes

Poster Presenter: David V. Sheehan, M.D., M.B.A.

Co-Author: Jennifer Giddens

SUMMARY:

Objective: Provide a classification of suicidality disorder phenotypes. The view that suicidality is trans-nosological and that all forms of suicide are the same is not consistent with response to pharmacological treatment evidence. For example, antidepressants make suicidality better in some patients, worse in others, and are no better than placebo for a third group. This suggests that there may be more than one type of suicidality. **Methods:** We used a phenomenological approach by observing in detail and directly communicating with subjects over time about their suicidality. **Results:** We developed diagnostic criteria and a related structured diagnostic interview for 12 distinct suicidality disorder phenotypes: 1) impulse attack suicidality disorders; 2) homicidal suicidality disorders; 3) psychotic suicidality disorders; 4) obsessive compulsive suicidality disorders; 5) PTSD suicidality disorders; 6) eating disorder/malabsorption suicidality disorders; 7) substance-induced suicidality disorders; 8) medical illness/neurological condition-induced suicidality disorders; 9) anxiety disorder-induced suicidality disorders; 10) mood disorder-induced suicidality disorders; 11) life event-induced suicidality disorders; and 12) suicidality disorders not elsewhere classified. Among these phenotypes, the description of impulse attack suicidality disorder is new. This disorder is associated with unexpected, unprovoked, unpredictable attacks of an urgent need to kill oneself. **Conclusion:** We offer 12 suicidality disorder phenotypes. Because these phenotypes may have a different response to treatment, each phenotype should be investigated separately when investigating antisuicidality treatments and when investigating the relationship between genetic and other biomarkers in suicidality.

No. 66**Do Suicidality Phenomena Follow a Linear or a Nonlinear Progression Over Time?**

Poster Presenter: David V. Sheehan, M.D., M.B.A.
Co-Author: Jennifer Giddens

SUMMARY:

Objective: Investigate whether the progression of suicidality phenomena over time is linear or nonlinear. The model of progressive, linear

suicidality has been the basis of much research into risk and protective factors for suicidality.

Understanding the progression of suicidality over time will help researchers build better predictive models of suicidality. **Methods:** Methods developed by Robert Stetson Shaw, a physicist at University of California at Santa Cruz to analyze data from an oscillator in two- and two-dimensional space (2D and 3D, respectively), were used. These methods are used in nonlinear dynamics theory/nonlinear systems theory/turbulence theory/deterministic chaos. We adapted his methodology to an analysis conducted on three databases collected from the same subject over time. **Results:** The method used permitted the mathematical graphic modeling of suicidality phenomena over three years in the form of a 2D and 3D attractor. The results found a nonlinear dynamic relationship of suicidality phenomena over time. There was no progressive, linear relationship of suicidality phenomena over time. **Conclusion:** The relationship of suicidality phenomena over time is nonlinear and dynamic. These data can be displayed graphically in the form of an attractor that reflects the underlying structure of suicidality and their dynamic change over time. To improve predictive models of suicidality, the progressive, linear models need to be abandoned in favor of nonlinear, dynamic systems mathematical modeling that more accurately reflects the turbulence, apparent unpredictability and dynamic nature of the complex system of suicidality as they move through time.

No. 67**Clinician Trait Characteristics' Impact on Emotional Response to Suicidal Patients**

Poster Presenter: Kayla DeFazio

Co-Authors: Igor Galynker, M.D., Ph.D., Zimri S. Yaseen, M.D.

SUMMARY:

Background: The period following psychiatric hospitalization for suicide is one of dramatically elevated suicide risk. We have previously found that clinicians' conflicting emotional responses to high-risk patients predicted subsequent suicidal behavior, independent of traditional risk factors. This study examines the influence of clinicians' capacity for regulation of negative affect. **Methods:** First-year

psychiatry residents' regulation of negative emotions and emotional responses to high-risk suicidal inpatients were assessed anonymously with the DERS and TRQ-SF self-report questionnaires, respectively. Patient global severity was assessed with the Brief Symptom Inventory, an instrument used to evaluate patients' level of psychological distress and psychiatric disorders. Patients were followed up at one to two months following discharge, and postdischarge suicide outcomes were assessed with the Columbia Suicide Severity Rating Scale (CSSRS). **Results:** Clinicians' difficulty regulating negative affect (DERS) is associated with suicide outcome and clinicians' conflicting emotional responses (CERs), but not at all with preexisting patient factors. CERs ($p=0.423$, $p=0.000$) and the interaction of DERS and patient severity ($p=0.372$, $p=0.009$) predict suicide outcome, but are unrelated to past suicidality. **Discussion:** This finding provides preliminary evidence that clinician ability to regulate emotion and patient severity interact to affect CERs. Thus, specific CERs might mark difficulty for the clinician in the management of suicide risk patients.

No. 68

Foreign Body Ingestion: An Infectious Process in Long-Term Adult Psychiatric Inpatients With Self-Harm Behaviors?

Poster Presenter: Laura N. Painter, L.C.S.W., M.S.W.
Co-Authors: Akash Patel, Tanya Vernik, Valeriya Yevshayeva, M.D., Elizabeth C. Dimitrios, M.S.W., Margaret Judge-Gorny, A.P.N.-C., Lucas Rockwood, Ph.D., Steven J. Schleifer, M.D.

SUMMARY:

Background: Deliberate foreign body ingestion (FBI) in adults with psychiatric disorders is an infrequent, clinically challenging and potentially lethal behavior. Social factors may contribute to this seemingly aversive behavior, as suggested by at least one report in the literature. Long-term psychiatric facilities, such as our 550-bed state hospital, tend to concentrate patients with FBI, which serves as a barrier to discharge. In 2014, a performance improvement project was developed to examine what appeared to be an escalating clinical problem in our setting. One hypothesis was that FBI behaved as an infectious process. As of January 2016, 27 current or recent patients with FBI had been

identified (mean age=36.4, range=18–64), 18 of whom showed clinical traits suggestive of borderline personality disorder and 14 of a cognitive disorder.

Methods: We examined patterns of FBI and other self-harm behaviors among patients in a section of six clinical units from May to September 2014. All self-harm events, and the subgroup of FBI events, were identified from 24-hour nursing reports and additional director of nursing reports. Patterns for each unit over time were examined. **Results:** 277 patients were hospitalized on the six units during this timeframe: 35 had one or more self-harm events; 11 (nine female) had at least one FBI (including several uncompleted attempted swallows). All patients with FBI incidents also had non-FBI self-harm events. FBI events correlated with non-FBI events ($r=0.58$; $p<0.001$). On the six units, the large majority (nine of 11) of patients with more than five non-FBI self-harm events also had FBIs. Frequency of swallowing varied among the 11 higher self-harm patients: six had multiple (three to nine) FBIs, three had one FBI and two had no FBIs. Among FBI patients, FBI ranged from four to 58% of all self-harm events ($x=29.9+18.5\%$). Among the units, several patterns of self-harm/FBI were suggested. Two units had high rates of both non-FBI and FBI self-harm, with temporal clustering of non-FBI and FBI events. On another unit, a single patient with traumatic brain injury had more than 90% of the over 40 non-FBI and FBI events; other patient events were rare. The remaining three units together had only two isolated FBI events and no evidence of infectious spread of self-harm. **Conclusion:** FBI is uncommon in adult psychiatric settings. The data suggest that patients at risk for self-harm in long-term psychiatric settings where others are engaged in swallowing may adopt FBI as a variant expression of self-harm. An infectious pattern of FBI/non-FBI self-harm behaviors is also suggested by the clusters of events on some units. Housing patients with high-frequency self-harm behaviors together with FBI patients may increase behavioral risk. Individual characteristics, such as a robust gag reflex, may confer relative resistance to FBI.

No. 69

Suicidality in a Sample of 9,355 U.S. Veterans With Schizophrenia or Bipolar Disorder: Prevalence and Correlates

Poster Presenter: Philip D. Harvey, Ph.D.
Co-Authors: John Concato, Mihaela Aslan,
Nallikkandri Rajeevan, Kseniya Yershova, Kelly
Posner

SUMMARY:

Background: Suicide disproportionately affects patients with severe mental illness, including schizophrenia and bipolar disorder. Using data from an ongoing study of schizophrenia (SZ) and bipolar I disorder (BP) among U.S. veterans, this poster examines the prevalence of suicidal ideation and behavior, as well as their corresponding risk factors. **Methods:** The Veterans Affairs (VA) Cooperative Studies Program #572 (“Genetics of functional disability in schizophrenia and bipolar illness”) is a genomically focused project involving VA patients with SZ (N=3,941) or BP (N=5,414) who were assessed in person for cognitive and functional status, history of PTSD and substance use. The schizophrenia sample was also assessed for a lifetime history of a major depressive episode and current negative symptoms. Extensive demographic information was obtained from the extensive VA electronic health record. Multinomial logistic regression methods were used to examine how various risk factors contribute to suicidal risk, as well as to quantify the incremental contributions for each of the factors. **Results:** Suicidal ideation or suicidal behavior was documented for 69.9% (2,757/3,941) of veterans with SZ and 82.3% (4,457/5,414) of veterans with BP; actual suicide attempts were reported by 46.1% (1,816/3,941) of patients with schizophrenia and 54.5% (2,953/5,414) of patients with bipolar disorder. Analyses identified clinically important and statistically significant risk associations for suicidal ideation and behavior, including lower risks for patients with SZ versus BP (odds ratio [OR]=0.82, 95% confidence interval [CI] [0.71, 0.95] for ideation; OR=0.81, 95% CI [0.71, 0.93] for behavior), those with a college education versus high school or less (OR=0.82, 95% CI [0.67, 1.00] for ideation; OR=0.70, 95% CI [0.58, 0.84] for behavior), and African American versus White patients (OR=0.72, 95% CI [0.63, 0.84] for ideation; OR=0.82, 95% CI [0.72, 0.93] for behavior). Conversely, higher risks were found for patients with multiple psychiatric comorbidities versus none (OR=2.61, 95% CI [2.22, 3.07] for ideation; OR=3.82,

95% CI [3.30, 4.41] for behavior), a high burden versus no medical comorbidity (OR=1.25, 95% CI [1.02, 1.53] for ideation; OR=1.43, 95% CI [1.19, 1.72] for behavior), and those with a history of being ever versus never married, with marriage ending in divorce for the majority of patients (OR=1.18, 95% CI [1.02, 1.37] for ideation; OR=1.36, 95% CI [1.19, 1.55] for behavior). A combined cognitive-functional measure was also associated with increased risk (OR=1.37, 95% CI [1.19, 1.57] per unit for ideation; OR=1.31, 95% CI [1.16, 1.49] per unit for behavior). Evaluated in terms of model likelihood for prediction of suicidal behavior, clinical factors (including diagnosis and psychiatric and medical comorbidity) contributed most of the variability (88%), outweighing the combination of all demographic factors (12%).

No. 70

Associations Between Different Components of Quality of Life and Suicidal Ideation Among Community Psychiatric Outpatients

Poster Presenter: Sarah Pospos, M.D., M.S.
Co-Authors: Rachel Higier, Ph.D., Lisa Benson, Ph.D.,
Lynn McFarr, Ph.D.

SUMMARY:

Background: Associations between suicidal ideation and quality of life (QoL)—even when controlling for depression—have been consistently reported in various settings; however, no study to date has examined the degree of correlations between suicidal ideation and specific QoL subset (i.e., symptom distress, interpersonal relation, social role). Likewise, limited research has compared the association between suicidal ideation and psychological (e.g., depressed mood, anhedonia, guilt, poor concentration) versus somatic depressive symptoms (e.g., insomnia, fatigue, poor appetite, psychomotor retardation), which may be important in terms of evaluating risk and informing treatment decisions. This study aims to 1) identify which QoL subset is reported to be the poorest among different age groups and 2) compare associations between suicidal ideation and different QoL subsets and depressive symptoms in a large community psychiatric outpatient sample. **Methods:** 208 cognitive behavior therapy outpatients at the Los Angeles County Department of Mental Health were

categorized into younger (54 years old or younger) (N=176), older (55 to 64) (N=21) and oldest (65 or older) (N=11). Baseline QoL and suicidal ideation (Outcome Questionnaire [OQ-45]) and depression scores (Patient Health Questionnaire [PHQ-9]) were analyzed with partial correlation. **Results:** The cohort (M=34.36, SD=17.24) showed no significant between-group differences. The oldest and older groups demonstrated highest suicidal ideation (M=1.40, SD=1.35) and lowest QoL (M=101.48, SD=19.21), respectively. Poorest QoL subset was symptom distress for the older and oldest groups and interpersonal relation for younger patients. Significant correlations were evident between suicidal ideation and overall QoL ($r(203)=0.51$, $p<0.01$), symptom distress- ($r(203)=0.51$, $p<0.01$), social role- ($r(203)=0.37$, $p<0.01$), and interpersonal relation-associated QoL ($r(203)=0.36$, $p<0.01$). Furthermore, we found mild significant correlations between suicidal ideation and overall ($r(203)=0.47$, $p<0.01$), psychological ($r(203)=0.43$, $p<0.01$) and somatic depressive subscores ($r(203)=0.32$, $p<0.01$). All correlations remain significant when controlled for age and psychiatric status (i.e., depression, anxiety), except for somatic depressive subscore and social role-associated QoL ($r(204)=0.13$, $p=0.07$). **Conclusion:** We found symptom distress-associated QoL to have the most pronounced significant association with suicidal ideation among community psychiatric outpatients, including when controlled for depression and age. Thus, treatments that improve symptom distress-associated QoL could potentially benefit suicidal patients. Such treatment may be especially useful for patients age 55 or above, as they demonstrated the poorest symptom distress-associated QoL.

No. 71

***Toxoplasma gondii* Infection and Suicide Attempts: Association With Depression, Anxiety and Lethality of Suicid**

Poster Presenter: Se-Hoon Shim, M.D.

Co-Authors: Han-Yong Jung, Sang-woo Han, Jong-Chul Yang, M.D., Ph.D., Hyeon-ah Lee, Do-eun Lee, Jin-wan Park, Hwa-Young Lee, Dr.P.H.

SUMMARY:

Background: Suicide attempts are one of the powerful predictor of suicide. There exist possible

mechanisms by which *Toxoplasma gondii* may affect human behavior and may also cause humans to attempt suicide. Several studies found that seroprevalence of *T. gondii* is associated with increased suicide rates. To our knowledge, there was no similar research in the Korean population. This poster examined the evidence of a potential pathophysiological relationship between depression, suicide and the *T. gondii* infection in Korea.

Methods: 125 psychiatric patients with a history of suicide attempt (aged 16.5-88.0 years) and 50 healthy control individuals were examined with enzyme-linked immunoassays and fluorescent antibody technique for *Toxoplasma gondii* seropositivity and antibody titers. The group of patients were interviewed on the history of suicide attempt during lifetime and evaluated using the Hamilton Rating Scale for Depression (HAM-D), Colombia Suicide Severity Rating Scale (C-SSRS) and State-Trait Anxiety Inventory (STAI). **Results:** Seroprevalences of toxoplasma IgG and IgM in the cases and the healthy controls were not significantly different. IgG antibodies were found in 19 (15.2%) of 125 suicide attempters and in four (8.0%) of the 50 controls ($p=0.203$). One control individual showed seropositive IgM. In contrast, toxoplasma IgG levels higher than 150IU/ml were more frequently observed in the cases than in the controls (84.2% vs. 25%, respectively, $p=0.04$). The toxoplasma seropositive suicide attempt patients had higher HAM-D score on depressed mood (3.33 vs. 2.68, $p=0.001$) and feelings of guilt (2.50 vs. 1.85, $p=0.009$) subscale and total score than the seronegative attempter. *T. gondii* seropositive status was associated with higher C-SSRS in severity (3.79 vs. 3.33, $p=0.03$) and lethality (2.74 vs. 2.28, $p=0.043$) subscales. *T. gondii* IgG seropositivity was significantly associated with higher STAI-X1 (state anxiety) scores among the suicide attempt group. The lifetime prevalence of suicide attempt was not different between IgG seropositive and negative. **Conclusion:** These results suggested significant association between *T. gondii* infection and psychiatric problems in suicidality. The depressed mood, guilty ideation and state anxiety are considered endophenotypes for suicidal self-directed violence, and the severity and lethality of self-mutilation are associated with suicide completion. These findings could be further investigated as

prognostic and treatment targets in *T. gondii* seropositive individuals at risk for suicidal behavior.

No. 72

Risk of Developing Acute Stress Disorder Following a Stroke

Poster Presenter: Brian E. McGuire

SUMMARY:

Background: A stroke can be a traumatic event—it has sudden onset, the individual has little control over what happens, and there may be very serious risk in terms of both mortality and morbidity. Approximately two-thirds of people who have a stroke will have some permanent physical disability, and about one in three stroke survivors develop depression. Around 25% of stroke survivors may go on to develop posttraumatic stress disorder (PTSD) symptoms, with 10% receiving a formal diagnosis of PTSD. However, little research has examined acute stress disorder (ASD), an independent anxiety disorder and risk factor for PTSD. Our study examined 1) the prevalence of ASD in a stroke population and 2) factors associated with risk of developing ASD. **Methods:** A cross-sectional design was employed to investigate the cognitive, emotional and demographic variables predictive of DSM diagnosis of ASD. The following inclusion criteria were used: 1) a formal diagnosis of stroke given by a specialist stroke physician; 2) over 18 years of age; and 3) could be assessed less than two weeks following the stroke. The following measures were administered: demographic questionnaire, Stroke Severity Scale, Barthel Index of Daily Living Skills, Repeatable Battery for Neuropsychological Assessment (RBANS), Acute Stress Disorder Scale, Hospital Anxiety and Depression Scale, and Brief Pain Inventory. **Results:** 321 patients were admitted with stroke and were screened for inclusion in the study, with 105 deemed eligible to participate. Of the 105 eligible participants, 73 participated, 11 patients did not consent, and 21 were transferred or discharged before assessment could take place. The majority of participants were male (69.31%), and the mean age was 69.31 years (SD=12 years, range=33–86 years). Twenty-one percent had a DSM diagnosis of ASD. Regression analyses revealed that cognitive functioning (RBANS Total; $p<0.01$), in particular, immediate memory ($p<0.01$) and delayed memory

($p<0.01$), as well as anxiety (HADS-A; $p<0.01$) and depression (HADS-D; $p<0.01$) were significantly associated with the ASD score. Objective severity of the stroke was not significantly correlated with risk of having ASD. **Discussion:** Our data suggest that around one in five people present with a diagnosis of ASD in the first two weeks following a stroke. Cognitive impairment, low mood and high anxiety were associated with having a diagnosis of ASD. Objective severity of the stroke was not correlated with diagnosis of ASD, suggesting that cognitive appraisals of the meaning of the stroke rather than stroke severity per se may be more important determinants of risk of developing ASD. Stroke clinicians should be aware that a sizeable minority of stroke patients present with ASD and that the meaning of the experience is instrumental, rather than objective illness severity. For future research, we are following our sample to determine the risk of developing PTSD over a longer period.

No. 73

The Role of Coronary Distensibility Index and Epicardial Adipose Tissues in Cardiovascular Risk Stratification of Posttraumatic Stress Disorder

Poster Presenter: Naser Ahmadi, M.D., Ph.D.

Co-Authors: Robert Pynoos, M.D., M.S., Fereshteh Hajsadeghi, M.D., Peter Hauser, M.D., Garth Olango, M.D., Ph.D., Mohammed Molla, M.D.

SUMMARY:

Background: Coronary distensibility index (CDI), decreased brown epicardial adipose tissue (bEAT) and increased white epicardial adipose tissue (wEAT) are associated with the presence and severity of atherosclerosis, but the prognostic value of CDI, bEAT and wEAT on risk stratification of posttraumatic stress disorder (PTSD) patients at risk for major adverse cardiovascular event (MACE) has not been studied. This study investigated the relation of CDI, bEAT and wEAT, measured by computed tomography angiography, with MACE in subjects with and without PTSD. **Methods:** 246 consecutive subjects (aged 64 ± 10 years, 33% women) with (N=53) and without (N=193) PTSD underwent computed tomography angiography (CTA) and their CDI, bEAT and wEAT were assessed. CDI was defined as early diastole–mid-diastole lumen cross-section area (CSA) divided by lumen CSA

in mid-diastole times central pulse pressure, all times 1,000. bEAT and wEAT were measured in axial images starting 15mm above the superior extent of the left main coronary artery (LM) to the bottom of the heart. Volume analysis software was used to discern adipose tissue based on Hounsfield units (HU) threshold of -10 to -87 for bEAT and -88 to -190 for wEAT. The PTSD Checklist–Military and Clinician-Administered PTSD Scale were administered. Those patients with positive Clinician-Administered PTSD Scale and PTSD Checklist–Military scores were classified as having PTSD. MACE was defined as myocardial infarction or cardiovascular death. Survival-regression was employed to assess the relation of CDI, bEAT, wEAT, and PTSD with MACE. **Results:** CDI was significantly lower in subjects with PTSD (3.3 ± 0.2), compared to those without PTSD (4.5 ± 0.3 , $p=0.001$). Similarly, bEAT was significantly lower in PTSD than non-PTSD (46.3 ± 6.4 vs. 52.6 ± 7.6 , $p=0.001$). In contrast, wEAT was substantially higher in PTSD, compared to those without PTSD (102.6 ± 26.7 vs. 66.5 ± 15.1 , $p=0.001$). After adjustment for risk factors, there was negative relation between PTSD and levels of CDI and bEAT; also, there is strong positive relation of PTSD and wEAT ($p<0.05$). A significant link between decreased bEAT, impaired CDI and PTSD with increased MACE was noted. The hazard ratio of MACE was eight times higher in PTSD with decreased bEAT, impaired CDI and increased wEAT, compared to those without PTSD ($p<0.05$). **Conclusion:** PTSD is independently associated with decreased bEAT, impaired CDI and increased wEAT that predicts MACE. This highlights the important role of neurovascular and neuroendocrine responses of inflammation on PTSD and its role in identifying individuals with PTSD at risk for MACE.

No. 74

Impact of Posttraumatic Stress Disorder and Job-Related Stress on Burnout: A Study of Fire Service Workers

Poster Presenter: Hwa-Young Lee, Dr.P.H.

Co-Authors: Se-Hoon Shim, M.D., Han-Yong Jung, Sang-woo Han, Byung-Chul Lee

SUMMARY:

Background: Burnout syndrome is a state of exhaustion caused by the working activity. Burnout

is common, related to problems in service professionals, especially among the fire service workers. The purpose of this study was to evaluate the traumatic stress on burnout among fire service workers. **Methods:** A total of 128 fire service workers in Chungcheongnamdo province South Korea completed questionnaires, including the Perceived Stress Scale, Maslach Burnout Inventory (MBI), Davidson Trauma Scale, Bride Secondary Trauma Scale, and Compassion Satisfaction/Fatigue Self-Test for Helpers. **Results:** In our 128 subjects, all subjects returned the questionnaires. 120 subjects (93.7%) were men, and eight (6.3%) were women. Mean age was 36.21 ± 8.56 years. For the total 128 responders, the mean score of the Perceived Stress Scale was 18.43 ± 6.85 , and 64% ($N=82$) of subjects shown moderate to severe stress. On the Bride Secondary Trauma Scale, the total score was 28.60 ± 11.40 , and on the Compassion Satisfaction/Fatigue Self-Test for Helpers, scores on the three subscales were “compassion satisfaction” 87.93 ± 15.69 , “compassion fatigue” 48.20 ± 12.17 and “burnout” 36.47 ± 8.84 . 78.9% ($N=101$) of subjects showed more than high compassion fatigue in its subscale, and 20.4% ($N=24$) of responders showed more than higher severity in the burnout subscale. On the MBI, scores on the three subscales were “emotional exhaustion” 15.42 ± 6.68 , “depersonalization” 10.13 ± 4.54 and “personal accomplishment” 30.98 ± 6.05 . Relationships were found between secondary trauma and burnout and between secondary trauma and perceived stress. **Conclusion:** We evaluated burnout syndrome and secondary trauma among fire service workers. There were relatively high incidences of those psychiatric problems in fire officers and significant relationships between secondary trauma and burnout syndrome. These findings could be important for the psychological and physical welfare of fire service workers.

No. 75

Qualitative Study of Return to Duty Practices of Behavioral Health Care Clinicians in the Military

Poster Presenter: Joshua E. Wilk

Co-Authors: Jaime Carreno, Imani Bruce, Estela Rodriguez, Kristina Clarke-Walper, Coleen Crouch

SUMMARY:

Background: Military medical clinicians often evaluate patients for medical readiness, including evaluations for return to duty (RTD) after a limitation imposed due to a psychological illness. While the Army has guidelines for making duty determinations regarding psychological fitness to serve, there is limited information about how clinicians make these decisions. The information available on duty-limiting decision making is focused on soldiers who have been pulled from theaters of operation in Iraq and Afghanistan. In these studies, the focus has been the frequency and illnesses associated with RTD decision. For example, Cohen and colleagues found that during a three-year period of combat operations, psychiatric disease and non-battle injuries (DNBI) were the fifth leading cause of medical evacuations (MEDEVACS) from combat zones. Psychiatric injury was the leading DNBI to result in an inability to RTD, with RTD rates ranging from only four to 16%, depending on the year and theater of operation. Duty limiting and RTD decisions have an obviously significant impact on mission readiness and on the individual soldier's career; therefore, understanding, and if possible improving, the process is critical. **Objective:** The primary objectives of this study were to 1) examine current practices and procedures in the RTD decision-making process; 2) identify the information and tools used to augment clinical RTD decision making; and 3) identify additional training needs reported by providers. **Methods:** This study used a qualitative design. Three focus groups and fourteen individual interviews were conducted with a total of 29 Army uniformed and non-uniformed clinicians regarding their experiences with RTD decision making. The clinicians included every type of specialty able to make these decisions in the Army (psychiatrist, psychologist, social worker, psychiatric nurse) and a variety of clinical settings and commands. All interviews were audiotaped, transcribed and coded for themes. **Results:** Results showed wide variation in approaches, data used and training desired with regard to RTD decision making among clinicians in Army behavioral health. Sixteen themes related to RTD decisions were identified, including patient clinical factors, provider factors, command climate and communication, and soldier preference. Also, policy considerations, stigma and clinician training were commonly mentioned as factors in these

decisions. **Conclusion:** The Army RTD decision-making process remains variable from clinician to clinician. Most commonly, clinicians desired more information about the job duties patients would be returning to, more communication with Command and more training regarding how to synthesize disparate pieces of data. Further research to develop tools and processes that can increase the efficiency and effectiveness of the RTD process are needed.

No. 76

Behavioral Interventions for Antipsychotic Medication-Associated Obesity: A Randomized Controlled Four-Site Dissemination

Poster Presenter: Donna Ames

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SUMMARY:

Background: Obesity is a severe public health problem in the U.S. and an even greater problem for individuals with serious mental illness (SMI; e.g., schizophrenia, posttraumatic stress disorder, bipolar disorder). While second-generation antipsychotic medications have proven effective for SMI, medication-associated weight gain is a problematic side effect. Weight gain and other metabolic sequelae of antipsychotic medications can lead to medication nonadherence, reduced quality of life, increased costs and premature mortality. Of the approaches to address this, behavioral interventions are less invasive, cost less and can result in sustained long-term benefits. We designed and assessed a 12-month behavioral intervention for overweight/obese patients with SMI called "Lifestyle Balance," a program based on the Diabetes Prevention Program (DPP), which was disseminated at four VA sites. **Methods:** 121 participants were randomized to the more intensive Lifestyle Balance (LB) treatment intervention (N=62) or the less intensive usual care (UC; N=59) groups. The LB group received group nutrition and exercise classes along with individualized health coaching from registered

dietitians weekly for eight weeks and monthly thereafter. The UC group met with case managers on the same schedule, which consisted of health questionnaires, weight checks and self-help materials. Outcomes included anthropometric, metabolic and mental health measures. **Results:** Both behavioral intervention groups lost weight. Lifestyle Balance participants had decreased an average 1.04cm in waist circumference, while UC gained an average 0.25cm over 12 months ($F[1,1244]=11.9$, $p<0.001$), and LB participants also had a greater average decrease in percent body fat, 0.4% versus 0.2% ($F[1,1121]=4.3$, $p=0.038$). Controlling for gender revealed a significant three-way interaction between gender, treatment and weight. Specifically, weight of LB women decreased more on average by week 26 than UC women and men in either group, a trend accompanied by statistically significant changes in BMI, waist circumference and body fat percentage. The majority of LB participants kept food journals (92%), and average daily calorie intake decreased from 2,055 to 1,650 during the study ($p<0.001$). Three-way interactions between Beck Anxiety Inventory (anxiety; $F[1,165]=3.7$, $p=0.05$) and Self-Appraisal of Illness Questionnaire (psychiatric illness insight; $F[1,192]=6.1$, $p=0.01$) scores with the treatment on change in weight over time showed LB participants with higher scores experiencing more weight loss than UC participants with higher scores, who lost less or even gained weight. **Conclusion:** Veterans with SMI are capable of losing weight and may have improved body composition as a result of eating and exercise interventions. This study demonstrated that both a more intensive DPP-based behavioral intervention and one that was largely self-help can be effective for this population.

No. 77

Therapeutic Lifestyle Changes (TLC) for Adults With Serious Mental Illness

Poster Presenter: Donna Ames

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Neena Sachinvala, M.D., Binyamin Amrami, M.D., Joseph M. Pierre, M.D.

SUMMARY:

Background: Individuals with serious mental illness (SMI; e.g., schizophrenia, posttraumatic stress disorder, bipolar disorder) may experience cognitive difficulties, psychosocial barriers and physical comorbidities associated with medication side effects, resulting in overall poor health and quality of life. The delivery of mental health care is shifting to one that is patient-centered and recovery-oriented, with the goal of increasing quality of life. These pilot studies test an adjunctive, holistic, behavioral approach to treating SMI. Investigators hypothesized that engagement in a greater number of therapeutic lifestyle changes (TLCs) leads to improvement in quality of life, reduction of psychiatric symptoms and weight loss. **Methods:** Pilot study 1 took place within the year-long multimodal behavioral weight management intervention “Management of Antipsychotic Medication-Associated Obesity–2.” Veterans received nutrition classes and counseling weekly for two months and monthly thereafter up to 12 months. Dietitians surveyed 55 veterans at each of these meetings on their engagement with eight TLCs: exercise, nutrition, stress management, relaxation, relationships, service to others, religious and spiritual involvement, and recreation. Data on the number of TLCs practiced by these veterans was analyzed in relation to weight change as well as measures of quality of life. Pilot study 2 involved 19 veterans with SMI who attended four classes about TLCs, received individual counseling over nine weeks and maintained journals to track TLC practice. **Results:** Using mixed-effect linear models with random intercepts by participants, analyses of study 1 data showed increased total TLC activity was associated with greater weight loss over time; the estimated relationship after controlling for individual differences is -0.81 (i.e., for every increase in TLC by one activity we can expect a reduction in weight by 0.8 pounds) ($F[1,435]=11.8$, $p<0.01$). Increased TLC activity was also associated with higher ratings of quality of life ($t[41]=2.32$, $p=0.03$) on the Biopsychosocial-Spiritual Scale. In study 2, TLC practice increased significantly over nine weeks and was significantly associated with improvements in quality of life on the World Health Organization

Quality of Life Scale–Brief (physical health domain $F[1,21]=4.9$, $p=0.04$; psychological health domain $F[1,19]=4.4$, $p=0.05$); environmental health domain $F[1,19]=9.0$, $p=0.01$); and total score $F[1,19]=9.4$, $p=0.01$) and diastolic blood pressure ($F[1,21]=4.5$, $p=0.05$). **Conclusion:** These results suggest that a holistic approach to mental health and weight management may yield greater weight loss and improve many components of quality of life.

No. 78

Recovery-Oriented Model of Care for Veterans in Inpatient Mental Health

Poster Presenter: Fe E. Festin, M.D.

Co-Author: Heather Walton Flynn, Ph.D.

SUMMARY:

The Veterans Health Administration facilities have made significant progress in the implementation of recovery models of care, particularly in the outpatient setting, and many have begun implementation in the inpatient setting. Before 2009, the delivery of care in the inpatient services at VA Boston was a stabilization-oriented model. The inpatient service implemented a model of care that incorporates recovery concepts, services and programming within a safe and healing inpatient environment. Staff received training on this model of care and promoted practices along recovery-oriented principles. Each of the acute and long-stay inpatient units scheduled four hours daily of recovery-oriented groups. A recovery workbook with a recovery goal plan was distributed to veterans admitted to the inpatient units. A recovery hour and a recovery planning group were designated for the veterans to work on their recovery workbooks. Policies and procedures were revised to allow smooth implementation. Toward discharge, veterans completed an anonymous survey to evaluate recovery-oriented programming, including overall level of satisfaction and degree of helpfulness of recovery groups (1–5 Likert scales), questions about recovery planning, and open-ended questions about overall experiences with care. Completed forms were returned to suggestion boxes prior to discharge. Several challenges were encountered during the implementation, ranging from staff and veteran resistance to consistency in implementation among the different units. The veterans returned a

total of 309 survey forms. Data gathered from the survey forms were analyzed. We noted that the veterans were engaged in the recovery groups, completed recovery workbooks and developed recovery plans. They were satisfied with the recovery groups offered and also reported that the recovery groups contributed to reaching their treatment goals. More than half spent time by themselves completing recovery workbooks and recovery plans. Interpersonal interactions with staff and co-veterans were significant factors in contributing to their comfort during their hospital stay. Veterans also felt that their dignity was maintained and felt respected during their admission. We conclude that the transformation to a recovery-oriented model of care yielded a positive impact on the delivery of inpatient care. Over the course of implementation of the recovery-oriented model of care, we also noted a decline in readmission rate and length of stay.

No. 79

Legal Status and Social Support Remain Key Factors for Length of Stay Differences in a Psychiatric Inpatient Unit

Poster Presenter: Ghulam Khan, M.D., M.B.B.S.

*Co-Authors: Chiadikaobi Okeorji, M.D., M.B.B.S.,
Juvaria Anjum, Ketan Hirapara, M.D., M.B.B.S.*

SUMMARY:

Background: Previous studies have suggested that prediction of length of stay (LOS) is complex and multifactorial. We have previously reported on substance use disorders not being a factor that increases LOS. This time, we evaluated whether patients had a home or not and compared those who are voluntarily admitted with those who are involuntarily committed to the hospital. **Methods:** On the day of discharge, patients are invited to take a patient satisfaction survey; medical records were reviewed and demographic, medical and psychiatric diagnoses and other characterizing information was collected with the patients' informed consent. **Results:** Using bivariate and logistical regression analysis, we studied 676 participants. The effects of the associations were tested by logistic regression. The mean age was 38.2 years; overall mean LOS was 9.75 days, and 58% of participants were males. Patients were overwhelmingly positive and satisfied

regarding their inpatient stay (previously reported). Demographic variables did not affect LOS. At discharge, involuntary admissions had a significantly longer LOS than voluntary patients ($p=0.003$). Homeless patients had a 60% higher likelihood of greater LOS compared to those patients who were domiciled (OR=0.66, 95% CI [0.43, 0.99]).

Conclusion: This study demonstrates that social support systems for the chronic and persistently mentally ill and the individual legal status of patients (presence or absence of a home, voluntary admission or not) can adversely affect LOS. Patients who voluntarily admit to inpatient treatment are often less ill or at least have insight into their problems and spend less time in the hospital. When patients need higher levels of social service, it may take longer to be safely discharged from the hospital.

No. 80

A 25-Year-Old Male With Autism and Catatonia: A Case Report

Poster Presenter: Nina Tioleco

Co-Author: Agnes Whitaker

SUMMARY:

Mr. G. is a 25-year-old male, adopted when he was two years old from a southern hemisphere country and diagnosed with autism at 3.5 years old. In May 2016, he presented for outpatient consultation for intermittent aggression, negativism, difficulties with sleep/wake cycles, recent-onset enuresis and encopresis, standing up for long periods of time (up to 17 hours) in the closet or the bathroom, mood lability, slowness in actions (particularly eating), mute periods and verbigeration at other times, and worsening echopraxia and echolalia. The patient had significant delays in language and social communication. He had developed phrase speech by school age with prominent immediate and delayed echolalia and echopraxia. He was noted to be quiet, cooperative and without major behavioral problems until late adolescence. Four years prior to presentation, he began to exhibit intermittent aggression with occasional visits to the emergency room, where he would be calm on arrival and be sent home. He had no known medical problems. Social stressors include a high degree of turnover at the program he attended. In-home expert behavioral

consultation for aggression had been ineffective. Over the past ten years, he had been tried on risperidone, aripiprazole and ziprasidone to address irritability/aggression; fluvoxamine and fluoxetine for repetitive behavior; and low-dose benzodiazepines (PRN or once daily) without success. His presenting symptoms were diagnosed as catatonia. He was tapered off ziprasidone, while a lorazepam protocol for catatonia was started. Over two and a half months on up to 12mg of lorazepam, the patient showed moderate improvement in some but not all of his symptoms; sleep, eating problems and severe echopraxia persisted with occasional aggression. Due to incomplete resolution of his symptoms and difficulty managing his behaviors at home, he was admitted to a psychiatric inpatient unit. In this poster, we will discuss the particular challenges when diagnosing catatonia in autism.

No. 81

Checklist for Autism Spectrum Disorder: Items That Discriminate Best Between Referred Children With and Without Autism

Poster Presenter: Raman Baweja, M.D., M.S.

Co-Author: Susan Mayes

SUMMARY:

Background: Autism diagnostic instruments that are valid, brief, cost effective, and easy to administer and score are needed to facilitate the early identification and treatment of children with autism and to promote research. Time-consuming, complex and expensive diagnostic tools are available, but are impractical for routine clinical practice. The Checklist for Autism Spectrum Disorder (CASD) consists of 30 symptoms of autism scored as present or absent based on a clinical interview with the parent, information from the child's teacher or childcare provider, and observations of the child. The CASD is normed on 1,052 children with autism (1–17 years old) and standardized on 1,417 children with autism, other disorders and typical development (1–18 years old). Published studies show the CASD easily differentiates children with autism from children with other clinical disorders and has excellent agreement with other autism instruments.

Objective: Our study identified the smallest subset of items from an established autism measure, the CASD, that differentiated referred children with and

without autism and yielded high diagnostic accuracy and high agreement with other autism measures.

Results: CASD scores for 469 children with autism and 138 with ADHD and comorbid disorders (3–17 years old) were analyzed to determine the smallest number of CASD items that differentiated the two groups with 100% accuracy. Six items (CASD-Short Form) discriminated the two groups using a cutoff score of 3 as autism. These results were cross-validated on an independent sample of 397 children with autism and ADHD with comorbid disorders (1–19 years old), resulting in 98.5% diagnostic accuracy. CASD-Short Form scores completed by clinicians were analyzed for children with autism, other disorders and typical development in the original CASD standardization sample of 1,417 children. Overall diagnostic accuracy for the CASD-Short Form was 97.6%. Diagnostic accuracy for the CASD-Short Form was similar to that for the 30-item CASD in all samples. Diagnostic agreement between the CASD-Short Form and the Autism Diagnostic Interview-Revised and the Child Autism Rating Scale was over 95%. **Conclusion:** The CASD-Short Form is a 5–10 minute clinical interview with the parent that has excellent diagnostic accuracy (>97%) and agreement with other autism measures (>95%). The CASD-Short Form is suitable for clinicians whose time does not permit administration of lengthier instruments, is easy for parents and teachers to complete as a screening measure, and is ideal for research because it is brief, inexpensive, and simple to administer and score.

No. 82

What Is the Role of Serious Mental Illness in Motivation, Participation and Adoption of Health Behavior Change Among Obese/Sedentary Latino Adults?

Poster Presenter: Daniel E. Jimenez, Ph.D.

Lead Author: Lauren Thomas

SUMMARY:

Serious mental illness (SMI) and Latino ethnicity can produce a compounded health disparity, placing individuals at particularly high risk for excess morbidity and premature mortality. Culturally sensitive strategies are needed to improve health behaviors, including exercise and healthy eating within this population. Qualitative, semi-structured

interviews were conducted with 20 obese Latinos with SMI who were enrolled in a randomized trial evaluating the effectiveness of a motivational health promotion intervention adapted for persons with SMI. The interviews explored the complicated role having SMI had in the lives of the Latino participants. SMI had both positive and negative impacts on Latino participants' health behaviors. The nature of their disorders (thought disorder), along with medication side effects (lethargy, weight gain), were significant barriers to making lasting health behavior change. However, regular appointments with various specialists provided them with structure that they otherwise would have lacked and gave them a reason to get out of the house. In addition, many participants stated that the need to get out of their own heads served as a motivator to engage in health behavior change. This exploratory research provides insight into the perspectives, experiences and preferences of Latinos with SMI participating in a health promotion intervention. Findings will be used to inform future health promotion efforts adapted to meet the needs of an ethnically diverse, underserved community.

No. 83

Language Difference as a Predictor of Outpatient Follow-Up in a Spanish-Speaking Population

Poster Presenter: Daniel E. Jimenez, Ph.D.

Co-Authors: Andrew Klise, Steven Figiel, Dante Durand

SUMMARY:

Individuals with limited English proficiency (LEP) are a rapidly growing segment of the U.S. population, and such patients pose a problem if there is a language discordance between physician and patient. This causes a language barrier, which would be a difficulty for any form of health care, but is particularly problematic in mental health care given that much of the diagnosis and treatment relies on verbal communication that could be misinterpreted rather than lab values and other objective measures. The objective of this study was to determine if the language barrier between Spanish-speaking patients and their psychiatrists affects their compliance with follow-up mental health care. The data were collected via retrospective chart review of Spanish-speaking patients who had an intake evaluation at

an adult outpatient center in Miami between 2013 and the end of 2015. Our final sample included 201 patients. The Spanish-speaking ability of the clinician was categorized into one of four groups using the standard set by the U.S. Census Bureau: 1) not at all; 2) not well; 3) well; and 4) very well. The dependent variable of presence or absence of follow-up was dichotomized to whether or not the patient came back for a visit within six months of initial evaluation. Odds ratios (ORs) were then calculated for each independent variable. Results indicate that patients were more likely to follow up if the physician had a language level of 4 (OR=0.51). This shows that the lack of language barrier likely improves chances of follow-up. We did not find a statistically significant indication that physicians with a language level of 1, 2 or 3 had different follow-up compliance as the rest of the physicians, but with an OR of 1.9 and a confidence interval of 0.924 to 3.867, physicians with a language level of 1 very nearly approached significance. This study shows that language barrier likely does affect a patient's compliance with mental health follow-up. Our results have important clinical implications considering that nearly 90% of LEP Latinos use language services (interpreters or bilingual providers), and only one percent of all mental health professionals in the U.S. identified as Latino. Residency training should include opportunities to learn how to effectively counsel Spanish-speaking clients. Psychotherapists do not need to identify as Latino to help the growing Latino population. The ability and willingness to speak Spanish along with general knowledge of Latino culture can help the therapist connect and communicate with the client, which can improve the quality of psychotherapy.

No. 84

Dasotraline for the Treatment of Moderate to Severe Binge Eating Disorder in Adults: Results From a Randomized, Double-Blind, Placebo-Controlled Study

Poster Presenter: Bradford Navia, M.D., Ph.D.

Co-Authors: James I. Hudson, M.D., Sc.D., Susan L. McElroy, M.D., Anna Guerdjikova, Ph.D., M.S.W., L.I.S.W., Ling Deng, Ph.D., Kaushik Sarma, M.D., Seth C. Hopkins, Ph.D., Kenneth S. Koblan, Ph.D., Antony Loebel, M.D., Robert Goldman

SUMMARY:

Background: Binge eating disorder (BED) is the most common eating disorder in the U.S., with a lifetime prevalence of three percent, and disturbances in reward circuitry have been implicated in its pathogenesis. Dasotraline is a novel and potent dopamine and norepinephrine reuptake inhibitor with slow absorption and a long half-life, resulting in stable plasma concentrations over 24 hours with once-daily dosing. This phase 2/3 study evaluated the efficacy and safety of flexibly dosed dasotraline (4, 6 and 8mg per day) versus placebo in adults with moderate to severe BED over a 12-week period (NCT02564588). **Methods:** Key inclusion criteria included moderate to severe BED based on a history of two or more binge eating days/week for six months or longer prior to screening and three or more binge eating days for each of two weeks prior to randomization, as documented in participants' binge eating diaries. Primary endpoint was change from baseline (CFB) in the number of binge eating days per week at week 12. Key secondary endpoints were CFB in Clinical Global Impression–Severity (CGI-S) Scale at week 12, CFB in Yale-Brown Obsessive Compulsive Scale Modified for Binge Eating (YBOCS-BE) at week 12, and the percentage of subjects with a four-week cessation from binge eating prior to week 12 or end of treatment (EOT). Except for four-week cessation, the other three variables were analyzed using a mixed model for repeated measures (MMRM). **Results:** 317 subjects (84% female) were randomized 1:1 and received one or more doses of the study drug (mean age was 38.2 years; mean number of binge eating days per week was 4.25; mean CGI-S score=4.5; mean BMI=34.7). The MMRM analysis of mean CFB to week 12 in the number of binge days per week yielded a significant mean difference of -0.99 (95% CI [-0.65, -1.33]; $p<0.001$), favoring dasotraline (-3.74 in the dasotraline group vs. -2.75 in the placebo group). All three key secondary endpoints were met at week 12 or EOT: 46.5% of subjects in the dasotraline group achieved at least four consecutive weeks cessation from binge eating versus 20.6% in the placebo group ($p<0.001$); CFB in CGI-S as well as YBOCS-BE scores were also statistically significant favoring dasotraline over placebo ($p<0.001$). The treatment-emergent adverse events (TEAEs) that occurred more frequently with dasotraline versus placebo at over

two percent incidence included insomnia (44.6% vs. 8.1%), dry mouth (27.4% vs. 5.0%), decreased appetite (19.7% vs. 6.9%), anxiety (17.8% vs. 2.5%), nausea (12.7% vs. 6.9%), and decreased weight (12.1% vs. 0%). Discontinuation due to TEAEs occurred in 11.3% with dasotraline versus 2.5% with placebo. **Conclusion:** In adults with moderate to severe BED, dasotraline showed significant and clinically meaningful reductions versus placebo in the frequency of binge eating, global severity of illness and obsessive-compulsive symptomatology related to binge eating. These results suggest dasotraline may offer a novel, well-tolerated and efficacious treatment for BED.

No. 85

Health Care Utilization and Costs in Binge Eating Disorder: A Swedish National Register Study

Poster Presenter: Hunna J. Watson, Ph.D.

Co-Authors: Andreas Jangmo, M.Sc., Laura Thornton, Ph.D., Yvonne von Hausswolff-Juhlin, M.D., Ph.D., Elisabeth Welch, Camilla Wiklund, M.Sc., Claes Norring, Ph.D., Barry K. Herman, M.D., M.M.M., Henrik Larsson, Ph.D., Cynthia Bulik, Ph.D.

SUMMARY:

Objective: The study objective was to assess health care utilization and expenditure associated with binge-eating disorder (BED). **Methods:** A case-control design was adopted using Swedish nationwide registers. All persons given a diagnosis of BED at eating disorder clinics in Sweden between 2001 and 2009 were identified (N=360, 97% female, mean age=22 years), and ten controls (N=3,600) were matched to each case on age, sex and location of birth. The index date was the date of diagnosis of the BED case. Annual inpatient, hospital-based outpatient and prescription medication records from health registers were analyzed between up to eight years prior to and eight years after the index date. Hurdle models and bootstrap analyses were used to model health care utilization and expenditure outcomes. **Results:** Cases had significantly higher inpatient, hospital-based outpatient and prescription medication utilization and expenditure compared with controls over many of the years examined. For instance, there was significantly higher odds of hospital-based outpatient care seven years before the index date (odds ratio [OR]=2.20, 95%

confidence interval [CI] [1.32, 3.66], false discovery rate [FDR] p=0.01) and inpatient psychiatric care two years before the index date (OR=5.65, 95% CI [2.80, 11.40], FDR p=0.006). Utilization and expenditure for controls was relatively stable over time, but for cases, followed an inverted U-shaped pattern. The relative risks peaked at about the index year, then decreased as utilization and expenditure reduced to comparable levels to controls for inpatient and outpatient care. Prescription medication for psychiatric illness stayed elevated relative to controls at the end of the observation period.

Discussion: Individuals with BED had substantially higher health care utilization and costs in the years prior to, and after, diagnosis of BED. Since previous research shows a delayed diagnosis of BED of many years, the findings indicate clear opportunities for earlier detection and clinical management. Health care services caring for patients at risk of BED are encouraged to integrate BED screening into routine care.

No. 86

Integrating Mind-Body Medicine With Chronic Pain Patients at a Military Treatment Facility

Poster Presenter: Jeffrey Millegan, M.D., M.P.H.

SUMMARY:

A 2011 Institute of Medicine report indicated that nearly 100 million people suffer from chronic pain, disproportionately more servicemembers, with an estimated \$635 billion per year in treatment costs and lost productivity. Servicemembers experiencing chronic pain usually have comorbid mental disorders such as PTSD, depression, sleep disturbance, and substance abuse that can be debilitating and difficult to treat, requiring numerous providers from multidisciplinary fields. In 2016, the Centers for Disease Control and Prevention published opioid prescribing guidelines for primary care physicians treating chronic pain in an outpatient setting and recommended using nonpharmacological and non-opioid therapies as the first-line treatment. Additionally, a 2014 Agency for Healthcare Research and Quality comparative effectiveness review concluded that mindfulness meditation may have potential in reducing psychological stress, including pain, depression and sleep disturbances. Self-care resiliency skills including meditation, cognitive

restructuring, sleep hygiene, and social connections have demonstrated benefit in increasing resiliency to stress, improving functioning and enhancing quality of life. These skills are evidence-supported and can be learned and practiced over the long term with minimal side effects. The Mind Body Medicine (MBM) program at the Naval Medical Center in San Diego (NMCSD), in collaboration with the Benson Henry Institute for Mind Body Medicine at Massachusetts General Hospital, developed an innovative solution to integrate self-care MBM practice into the military health care delivery system and help patients gain better control over their stress response, improve resiliency to new adversities, and optimize the mind and body to aid in recovery. Approximately 90 patients receiving care at a pain clinic participated in the MBM program at NMCSD and attended a weekly two-hour MBM group session for seven weeks. Topics covered in sessions included meditation techniques, cognitive restructuring, yoga, qigong, sleep hygiene, and skills for enhancing social connections. Pre- and post-assessments were administered prior to and upon completion of the program. Sixty-four patients receiving care at a pain clinic showed significant reductions in overall pain severity (BPI), anxiety (GAD-7) and depression (PHQ-8) and significant improvements in overall sleep quality (PSQI) and psychological and social domains of quality of life (WHO-QOL) after completing the MBM program ($p < 0.05$). Additionally, patients developed independent meditation practices, utilized cognitive restructuring and increased their understanding of core MBM concepts. Data collection is ongoing and currently in progress. We plan to present results from an updated analysis using data collected from additional participants ($N=90$). Preliminary findings show encouraging results for chronic pain patients receiving care at a military treatment facility.

No. 87

Applications of Psychocinematics and Neurocinematics in Psychiatry

Poster Presenter: Luis Caballero Martínez

Co-Authors: Mónica Magariños, Inés García, Pedro Sanchez, Luis Caballero Escobar, Edorta Elizagárate

SUMMARY:

Neurocinematics and psychocinematics are two

novel disciplines that study the biological and psychological basis of the filmic experience within an empirical-naturalist framework and from a multidisciplinary perspective (psychology, cognitive neuroscience, neuroimaging, philosophy, film theory, and other subject areas). The film-watching experience involves automatic human abilities refined throughout millions of years of brain evolution. These abilities rely on a wide range of neural areas and circuits such as the attentional cortico-thalamic circuit, the primary visual area V1 and its dorsal projections (to parietal cortex) and ventral projections (to temporal lobe), the Heschl gyrus and the adjacent areas of the left temporal lobe, the posterior parietal cortex, the prefrontal cortex (orbitofrontal and anterior cingulate cortex), the amygdalae, the hypothalamus, the hippocampus, and others. Many of these areas and circuits are involved in the cognitive and emotional deficiencies and distortions that are characteristic of mental disorders. To this day, the expression of these deficiencies and distortions in the film-watching experience and the possibility of using cinematic media for rehabilitate them have barely been studied scientifically. The authors designed a technique of guided training to correct the distortions and deficiencies in the perception of a film caused by severe mental disease, inspired by scene-to-scene film analysis. After a pilot period in which this technique was perfected, the authors conducted a controlled clinical trial with 48 patients suffering from severe mental disease, using a well-known television series. The new technique was then compared with a more conventional "film-discussion" intervention. The effect size, measured with the PANS, turned out in favor of the new technique for positive factor (0.82; $p < 0.01$), negative factor (0.89; $p < 0.005$) and disorganized factor (0.49; $p < 0.05$). This poster discusses these results and proposes further lines of study and application of psychocinematics and neurocinematics to psychiatric treatments.

No. 88

Stem Cell Activation, Migration and Proliferation With Lithium and Valproic Acid

Poster Presenter: Raymond Bunch

SUMMARY:

Background: Underlying mechanisms of action of lithium (Li) and valproic acid (VPA) have remained elusive. Lithium is a GSK-beta inhibitor, which is neuroprotective with anti-apoptotic effects, anti-inflammatory effects, angiogenic potentiation, and induction of neurogenesis. VPA is a histone D-acetylase type I inhibitor that epigenetically affects transcription. Li and VPA have been clinically efficacious in conditions such as epilepsy, mood disorders and neurodegenerative disorders. Non-hematopoietic adult stem cells reside in stem cell niches and maintain relative quiescence.

Appropriate stimuli result in proliferation, migration and differentiation. Also, it is becoming apparent that regenerative effects of stem cells are also mediated indirectly from cytokines and growth factors secreted from stem cells. **Methods:** We investigated stem cell proliferation, migration and epigenetic reprogramming from stem cells in cell cultures exposed to either Li or VPA or in combination. We developed a cell-based migration assay using obscured cell culture regions that are repopulated by migrating stem cells and other cell types. Proliferation of cell lines was determined by PrestoBlue fluorescent analysis, and gene expression was determined by qPCR of selected genes. **Results:** We showed that both VPA and Li elicit proliferation and migration of MSCs and NSCs in a dose-dependent manner. Quantitative PCR showed enhanced expression of Oct 3/4, CXCR-4, Sirtuin-I, and FGF21 by exposure of MSCs to VPA and other epigenetic agents. Since cell migration by VPA was inhibited by blockage of CXCR4, and Li-induced cell migration was inhibited by blockage of MMP-9, we provide evidence of CXCR4 and MMP9 involvement in the synergistic effect of VPA and Li on stem cell migration. We also measured cytokines secreted from expanded stem cells and demonstrated secretion of cytokines involved with immunomodulatory effects of stem cells.

Conclusion: Valproic acid (VPA) and lithium (Li) have been shown in combination to have enhanced regenerative effects in animal models of traumatic brain injury (TBI), amyotrophic lateral sclerosis and stroke. Our results suggest their involvement in the mechanism of stem cell activation while additional molecular mechanisms are discussed together with the role of epigenetic modulation in stem cell activation. The results indicate that VPA and Li

independently increase stem cell proliferation while synergistically increasing stem cell migration. Stem cell activation is a proposed mechanism of clinical action for lithium, and we propose a new line of research into neuropsychiatric treatment: activation of stem cells by direct effects through agents, which we will term "stemactigens."

No. 89

PDE7B, NMBR and EPM2A Variants and Schizophrenia: A Case-Control and Pharmacogenetics Study

Poster Presenter: Tae-Youn Jun, M.D., Ph.D.

Co-Author: Hye-Jin Seo

SUMMARY:

Background: We investigated phosphodiesterase 7B (PDE7B), neuromedin B receptor (NMBR) and epilepsy progressive myoclonus type 2A (EPM2A) genes in schizophrenia (SCZ). To the best of our knowledge, these genes have been poorly investigated in studies of SCZ. **Methods:** 573 SCZ inpatients of Korean ethnicity and 560 healthy controls were genotyped for two PDE7B, three NMBR and three EPM2A polymorphisms. Differences in the allelic and genetic frequencies among healthy subjects and patients were calculated using the χ^2 statistics. Repeated measure ANOVA was used to test possible influences of single-nucleotide polymorphisms on treatment efficacy. In case of positive findings, clinical and demographic variables were added as covariates in order to investigate possible stratification bias. **Results:** The rs2717 and rs6926279 within the NMBR gene and rs702304 and rs2235481 within the EPM2A gene were associated with SCZ liability. rs1415744 was also associated with Positive and Negative Symptom Scale negative clinical improvement. The results remained the same after inclusion of the covariates and were partially confirmed in the allelic and haplotype analyses.

Conclusion: Our preliminary findings suggest a possible role of NMBR and EPM2A genes in SCZ susceptibility and, for the second one, also in antipsychotic pharmacogenetics. Nonetheless, further research is needed to confirm our findings.

No. 90

Outcomes of an Involuntary Medication Review Process in a State Psychiatric Hospital: Patient

Characteristics and Time to Consent

Poster Presenter: Lily Arora, M.D.

Co-Authors: Kathleen J. Mencher, A.P.R.N., M.S.,
Christina Fasolas, Theresa Miskimen, M.D., Steven J.
Schleifer, M.D.

SUMMARY:

Background: The Involuntary Medication Administration Report (IMAR) process was introduced in New Jersey in June 2012 as an alternative to judicial review for determining whether medication should be administered involuntarily to patients considered a danger to themselves or others. At our 550-bed long-term state psychiatric hospital, IMAR utilizes a weekly review by a three-member panel: a university-based independent psychiatrist and representatives of hospital administration and non-physician clinical services. In a performance improvement project, we have been evaluating characteristics of IMAR patients and processes, its course and time to resolution, considering efficiency, administrative burden and clinical implications of this intensive approach to pharmacotherapy review. **Methods:** Clinical and demographic data for all patients enrolled in IMAR since its inception were evaluated. Three patient subgroups were identified by medical refusal status (as per the patient's psychiatrist's assessment): refusers (R), unable to consent (U), and those initially considered refusers but later converted to unable status (RU). For this report, process duration and disposition were the primary variables. **Results:** Of 377 IMARs opened during the first four years of the program, 290 had been closed with resolution to consent or discharge. For these completed IMARs, patient mean age was 49 (range=19–81 years), 47% were female, 59% identified as Caucasian, and 85% had a psychotic disorder. Mean days (+SD) from hospital admission to IMAR referral was 661+1772 and from IMAR to consent or discharge was 115+182. Days from admission to IMAR was 444+1410 for R (N=240), 1789+3027 for U (N=38) and 1438+1572 for RU (N=12). RU patients were converted from R to U status after a median of 248 days. Days from IMAR initiation to consent/discharge were 86+138 for R, 160+131 for U and 549+407 for RU. Differences among the groups were highly significant (ANOVA F 51.6, df 2,287, $p < 0.001$; post hoc comparisons

all < 0.025). U and RU patients had guardians assigned (with three exceptions) 60 days (median) from IMAR initiation to guardian assignment for U and 491 days for RU. Median days from guardian assignment to consent by guardian or discharge was 26 days for U and 17 for RU. In regression analyses, developmental disability was associated with more extended time to consent ($p < 0.001$), an effect only partly attributable to "unable" status. Other diagnostic and demographic factors were not significant predictors of time to resolution. **Conclusion:** These data suggest that the IMAR process may facilitate treatment for refusers as well as the assignment of guardians for patients considered unable to consent. Early identification of the need for a guardian for U patients in the IMAR process increases the efficiency of treatment and ultimately can reduce the number of time consuming and potentially stressful doctor-patient interactions.

No. 91

The Efficacy of a Psychiatric Intensive Care Unit in Managing Aggression Among Individuals With Serious Mental Illness

Poster Presenter: Michael Guppenberger, M.D.

Co-Authors: Denise B. Thompson, M.S.N., Daniel Antonius, Ph.D.

SUMMARY:

Background: The management of aggressive individuals with serious mental illness poses significant challenges for those who operate inpatient psychiatric units. Seclusion and restraint are often used to mitigate aggression; however, they come with higher risks for staff and patient injury. To better manage aggressive inpatients, a psychiatric intensive care unit, "Transitions," was created. Researchers have shown that such units are effective in reducing patient and staff incidents, risk for violence, and incidents of aggression. To assess the efficacy of Transitions, we compared seclusion and restraint rates between the Transitions unit and the patients' units of origin. **Methods:** Patients are transferred to Transitions when they are deemed at risk for aggression or have recently aggressed. Patients derive from a comprehensive psychiatric emergency program (CPEP) or one of five other adult inpatient units. Information concerning the patient's unit of origin, length of stay, and the pooled

seclusion and restraint numbers were analyzed. Analyses examined seclusion and restraint rates and length of stay comparisons between individual units and aggregate zone areas. **Results:** There were 204 patients transferred from CPEP or one of the five psychiatric inpatient units to Transitions from 2014 to 2016. Of these patients, 67.1% were never secluded or restrained on Transitions, compared to a combined 35.3% for other inpatient units. Of those who were secluded or restrained, 22.7% were secluded or restrained more than once, compared to 46.3% for other inpatient units. Average seclusion and restraint rates were generally lower for Transitions ($m=1.6$, $SD=3.92$) versus all other units ($m=2.3$, $SD=3.15$). Most patients (45.9%) were transferred from two adjoining units ("5 North"). Analyses using paired sample t-tests revealed that Transitions had significantly less seclusion and restraints versus 5 zone 3 ($t(39)=2.21$, $p=0.033$) and 5 zone 4 ($t(54)=2.39$, $p=0.020$). No other t-tests for other unit comparisons were significant. Transitions restrained and secluded patients from 5 North at almost half the rate ($m=1.44$ versus $m=2.77$, respectively). Paired t tests revealed that patients spent significantly more time on Transitions versus all five inpatient units. **Conclusion:** Consistent with the literature, Transitions managed patient aggression more effectively by maintaining lower seclusion and restraint rates compared to most other inpatient units, while spending over twice as much time on the unit. 67.1% of patients were never secluded or restrained (versus 35.3% on other units), and fewer patients received multiple seclusions and restraints, suggesting that patient aggression was mitigated through less restrictive means. Overall, Transitions shows promise as an effective means to manage aggressive individuals with serious mental illness in a large hospital system, serving as a potential model for other units.

No. 92

Clock Gene Polymorphism and Seasonal Changes in Sleep Duration and Mood in the Old Order Amish

Poster Presenter: Gagan V. Nijjar, M.D.

Co-Authors: Naila N. Karim, M.D., Kathleen A. Ryan, M.P.H., M.S., Hira Mohyuddin, Uttam Raheja, Aamar R. Sleemi, M.D., Alan R. Shuldiner, M.D., Toni I. Pollin, Ph.D., Braxton D. Mitchell, Ph.D., Teodor T. Postolache, M.D.

SUMMARY:

Background: We have previously reported significantly longer sleep duration in the winter as compared to the summer in the Old Order Amish, a population enforcing a self-prohibition of network electric lighting at home. Additionally, we have reported a negative association between the morning chronotype and seasonality in the Amish. As circadian preference is associated with variants in clock genes, and as circadian physiological mechanisms are also implicated in signaling change of seasons, we have now investigated a possible link between genetic variations in clock genes that have been previously implicated in metabolic regulation or seasonality of mood and sleep differences.

Methods: We studied 863 participants ($age=56.0\pm 15.3$) from the Amish Complex Genetic Disease Research Program with both Seasonal Pattern Assessment Questionnaires (SPAQ), generating a Global Seasonality Score (GSS) and self-reported sleep duration by season, and 1,000 genome imputation genotype data. The SNPs that were tested included seven SNPs from PER3 gene, three from CLOCK gene, three from BMAL1 gene, one from PER2 gene, and one from PER1 gene. A mixed models approach was used to analyze the relationship between seasonal changes in sleep duration and SNPs, adjusting for age, sex and BMI.

Results: Heritability of seasonal changes in sleep duration was 14%. The seasonal changes in sleep duration and mood were analyzed in relation to 184 SNPs. The rs934945, rs2735611, rs12649507, rs1982350, rs1562438, and rs11022778 SNPs individually had $p<0.05$. After Bonferroni correction, however, none of the SNPs showed a significant relationship with seasonal changes in sleep duration or with the GSS. **Conclusion:** These clock gene SNPs do not appear to contribute to heritability of seasonal changes in sleep. Our further efforts are now directed to investigate the polygenic architecture of seasonal changes in sleep duration, epigenetic effects, and interactions with environmental factors such as household, occupation, and actual light and short wavelength light exposure. This research was funded by K18MH093940-01 from the National Institutes of Health (TTP) and from the Mid-Atlantic Nutrition

Obesity Recent Center (P30 DK072488—subaward to TTP).

No. 93

Long Sleep Duration and Health Outcomes: A Systematic Review, Meta-Analysis and Meta-Regression

Poster Presenter: Norio Watanabe

Co-Authors: Maki Jike, Osamu Itani, Daniel J. Buysse, Yoshitaka Kaneita

SUMMARY:

Objective: Explore the dose response of long sleep duration in mortality and the incidence of important health outcomes such as diabetes mellitus, hypertension, cardiovascular diseases, stroke, coronary heart diseases, obesity, depression, and dyslipidemia. **Methods:** We collected data from prospective cohort studies with one-year or more follow-ups on associations between long sleep duration and the outcomes. For the independent variable, we subdivided participants at baseline into long sleepers and normal sleepers. The primary outcome was defined as mortality and an incident of each health outcome in the long-term follow-up. Risk ratios (RRs) for each outcome were calculated through meta-analyses of adjusted data from individual studies. Subgroup and meta-regression analyses were performed to investigate the association between each outcome and the duration of short sleep. **Results:** Data from a cumulative total of 5,134,036 participants were collected from 137 studies. Long sleep was significantly associated with the mortality outcome (RR=1.39; 95% CI [1.31, 1.47]). Similar significant results were observed in diabetes mellitus (RR=1.26, 95% CI [1.11, 1.43]), cardiovascular diseases (RR=1.25, 95% CI [1.14, 1.37]), stroke (RR=1.46, 95% CI [1.26, 1.69]), coronary heart diseases (RR=1.24, 95% CI [1.13, 1.37]), and obesity (RR=1.08, 95% CI [1.02, 1.15]). No significant difference was shown in hypertension (RR=1.01, 95% CI [0.95, 1.07]). There was no sufficient usable evidence for meta-analyses in depression and dyslipidemia. Meta-regression analyses found a statistically significant linear association between longer duration of sleep and increase in mortality and cardiovascular disease. No dose response was identified in the other outcomes. **Conclusion:** Future studies should examine the

effectiveness of psychosocial interventions to optimize sleep duration and then if this leads to reducing these health outcomes in general community settings.

Young Investigators' New Research Posters 2

No. 1

A Grassroots Approach to Community Mental Health Education

Poster Presenter: Carlos Fernandez

Co-Author: Edgar Ortega

SUMMARY:

Background: Minority groups tend to underutilize mental health services (MHS) and face problems accessing psychiatric services. Delayed identification and treatment can frequently lead to potentially negative outcomes. The University of California, Riverside (UCR), psychiatry residency program has identified these alarming shortages and become involved in an ongoing project initiated by Riverside University Health System—Behavioral Health (RUHS-BH). The program utilizes a mobile unit providing prevention and MHS intervention for children, assisting this patient population with the earliest signs of mental health concerns. **Methods:** A pilot study will be carried out at a prospective elementary school in Riverside, CA, in a community more than 75% Latino. The study population will consist of teachers and parents who will receive bimonthly educational lectures on the five most common mental health topics related to the child population and training on early identification. We anticipate a study population of 10 to 20 for each group. The study will be in two phases. Preliminary data will take place during the first phase and will incorporate the effects of training parents and teachers, which will be evaluated using questionnaires at the beginning, middle and after the end of the training phase with a six-month follow up questionnaire. The questionnaires will assess general mental health knowledge in children, stigmatizing attitudes, locating mental health referral information, treatment modalities, and knowledge about children's mental health well-being. Phase two of the study will incorporate final data collection and analysis, with an anticipated date of completion by March 2017, in line with the one-year awarded APA

SAMHSA Minority Fellowship (July 2016 to June 2017). **Results:** The pilot's primary focus is to increase teachers' and parents' and children's mental health knowledge. The use of a community academic partnership will aim to reduce stigmatizing attitudes, allow participants to become informed members of their community and recognize common mental health conditions in the child population. We anticipate that during the course of the study, parents and teachers will learn how to access mental health services, become familiar with different treatment modalities (i.e., medication, etc.) and increase awareness for children's mental health conditions. **Conclusion:** Reducing mental health barriers and eliminating disparities is crucial in empowering patients and families. By utilizing a community academic partnership model, the objective of the study is to inform parents and teachers about children's mental health conditions, reduce stigmatizing attitudes in under-resourced Latino communities and increase community mental health literacy. The UCR psychiatry residency program, in conjunction with RUHS-BH, intends to help parents and teachers identify early signs and symptoms of mental health conditions.

No. 2

Characteristics of an Outpatient Sports Psychiatry Practice Developed During Residency

Poster Presenter: Claire Twark, M.D.

SUMMARY:

Background: Sports psychiatry is a subspecialty of psychiatry focusing on 1) the diagnosis and treatment of psychiatric illness in athletes; 2) the utilization of psychological approaches to enhance performance; and 3) the use of exercise as a component of psychiatric treatment. More information is needed about the demographics, pathology, medication use, and risk profiles among sports psychiatry patients. **Methods:** A review of one resident's outpatient panel of 64 past, current and referred patients revealed that 24 patients (38%) could be considered sports psychiatry cases. Collaboration with other departments including orthopedics, physiatry and physical therapy was critical in developing a referral base for these cases. Chart reviews of these patients were performed. **Results:** The mean age at the time of

referral/presentation was 31 (range 19–43), the majority were women (58%), the majority were employed full time (54%), a substantial portion had completed graduate school (34%), and no-show rates were relatively low (9% average). Treatment frequently targeted depression, anxiety, disordered eating (often as a part of the female athlete triad), opioid use disorder, alcohol use disorder, attention-deficit/hyperactivity disorder, and narcissistic personality traits. Antidepressants were the most common medications used. Regarding risk assessment factors, 64% of women and 63% of men had chronic pain, 14% of women and 13% of men had a history of self-injurious behavior, 50% of women and 50% of men had a history of suicidal thoughts, 29% of women and 38% of men had a history of suicide attempts, 29% of women and 38% of men had a history of inpatient psychiatric hospitalizations, and 14% of women and 25% of men had a history of violence. **Discussion:** Understanding the characteristics of sports psychiatry patients is critical for the advancement of this subspecialty and useful to providers interested in treating athletes and incorporating exercise into psychiatric treatment. These patients represent a complex spectrum of presentations and treatments, and more research is needed to provide optimal care for this unique population.

No. 3

Interpersonal Rejection Sensitivity Predicts Work Burnout in PGY-1 Psychiatry Residents: A Preliminary Report

Poster Presenter: Lidia Firulescu, M.D.

Co-Authors: Bishoy Goubran, M.D., Ross W. May, Ph.D., Frank D. Fincham, Ph.D., Juan D. Oms, M.D., Marcos A Sanchez-Gonzalez

SUMMARY:

Background: Recently, physician burnout has gained public health relevance as a growing mental health concern. Burnout is a three-dimensional construct comprising feelings of emotional exhaustion, depersonalization and professional inefficacy. Often, work burnout (WB) has been associated with poor sleep quality, long working hours and negative affectivity (e.g., anxiety, depression, suicidal thoughts). Strikingly, WB in medical residents negatively affects working performance as well as

patient-physician interactions and hence may affect the quality of behavioral health care. Research has demonstrated that higher levels of fatigue and distress are independently associated with self-perceived medical errors. Although the relationship between WB and negative affectivity has been well documented, the association with social factors related to the work environment has been overlooked. The aim of this clinical study is two 1) explore the social working environment bases of WB and 2) identify potential impairments in cognitive performance associated with WB in PGY-1 psychiatry residents. **Methods:** Study subjects are PGY-1 psychiatry residents at a teaching hospital. Residents are administered surveys on work burnout (Maslach Burnout Inventory; WB), workplace bullying, personal bullying (PB), and interpersonal rejection sensitivity (IRS), all of which are anonymously submitted electronically. In order to investigate the impact of WB on cognitive performance, a simple three-minute math task (to subtract serial sevens from a four-digit number as fast as possible) is administered to residents. Hierarchical multiple regression (HMR) and correlations were used to determine the associations between WB, work environment social factors and math task performance. A p-value of under 0.05 was considered significant. **Results:** The current analysis included 16 PGY-1 (mean age=33.1±4.2) psychiatry residents. HMR analysis using WB as main outcome contained three predictors: model 1 contained PB; model 2 contained PB and workplace bullying; and model 3 contained PB, workplace bullying and IRS. Model 3, specifically IRS, was the only significant predictor (p=0.017), accounting for 38.9% of the variance in WB scores. High IRS levels were associated with poor math task performance (r=-0.52; p<0.05), but WB was not associated with math performance. **Conclusion:** Although limited by a small sample size, preliminary results demonstrate that residents with high WB levels display high IRS. In addition, IRS is associated with poor arithmetic performance. Hyper-alertness to social reactions of others as well as poor interpersonal expectations seem to trigger high WB and impaired cognitive performance in PGY-1 psychiatry residents. These preliminary results suggest that strategies to improve emotional intelligence and self-confidence

to positively impact WB among residents warrant further exploration.

No. 4

Impact of Work Burnout on Cardiac Autonomic Responses to Stress in PGY-1 Psychiatry Residents

Poster Presenter: Lidia Firulescu, M.D.

Co-Authors: Mei Wai Lam, M.D., Bishoy Goubran, M.D., Ross W. May, Ph.D., Frank D. Fincham, Ph.D., Juan D. Oms, M.D., Marcos A Sanchez-Gonzalez

SUMMARY:

Background: Recently, burnout has been associated with increased sympathetic tone to the heart and blood vessels after mental stress, as well as lowered physiological post-stress cardiovagal rebound. Studies have shown that stressful stimulation increases cardiac sympathovagal balance (e.g., increases the low-frequency component/high-frequency component of heart rate variability; LF/HF), which may eventually lead to increased cardiovascular risk. This study examined the impact of work burnout (Maslach Burnout Inventory; MBI) on cardiac responses to stress through measurement of heart rate variability (HRV) and blood pressure (BP) in PGY-1 psychiatry residents. **Methods:** Sixteen PGY-1 psychiatry residents volunteered for the study. MBI was administered to classify burnout level into high burnout (HB) versus low burnout (LB) using a median split approach. HR was measured with a monitor (Polar 800CXS; Kempele Finland) placed below the sternum. Three repeated blood pressure measurements were recorded at the end of the following intervals: five-minute seated rest (BASE), three-minute arithmetic test (AT) and three-minute recovery period (REC). Physiological parameters gathered and derived from HR monitor and BP measurement were HRV, systolic BP (SBP) diastolic BP (DBP), normal R-R intervals that differ by more than 50ms (pNN50; vagal tone), and LF/HF ratio. **Results:** There was no significant difference between LB and HB groups at baseline in any of the tested variables. There was a significant time-group interaction (p=0.036), such that the HB group displayed impaired cardiovagal reactivation and hyperactivity of SNS during AT and REC. The pNN50 did not return to baseline during REC in the HB group only. Likewise, significant time-group interaction (p=0.023) was identified such that

sympathovagal tone (LF/HF ratio) remained elevated during REC, while it returned to baseline in the LB group. Similarly, in the HB group, DBP did not return to baseline level during REC, while DBP returned to baseline level in the LB group (significant time-group interaction, $p < 0.001$). **Conclusion:** Findings suggest that high burnout among PGY-1 psychiatry residents is associated with cardiac hyperactivity. Impaired cardiovagal reactivation and hyperactivity of SNS imply potential cardiovascular dysregulation. The long-term impact of burnout on cardiac autonomic regulation in medical residents merits further investigation.

No. 5

A Program Partnering Medical Students With ACT Teams to Improve Chronic Medical Conditions in Patients With Severe and Persistent Mental Illness

Poster Presenter: Heather Burrell Ward, M.D.

SUMMARY:

Background: There is great need for better primary care follow-up in the mentally ill population. Their chronic mental illness, coupled with lack of health literacy, marginalized socioeconomic status and comorbid medical conditions, prove to be prohibitive barriers to care. To address this need, we created a novel program that partnered medical students with Carolina Outreach's assertive care treatment (ACT) team. Our purpose was threefold: 1) empower patients to affect change in their health behaviors and improve their health outcomes; 2) decrease stigma of mental illness among medical students through service learning in longitudinal outpatient psychiatric care; and 3) build leadership skills with peer-teaching in the context of a multidisciplinary health care team. **Methods:** Carolina Outreach identified patients with comorbid psychiatric and medical conditions who necessitate additional coordination of their medical care. A team of two medical students (one first year, one third year or above) served as health care liaisons for each patient. Through monthly visits with ACT team staff, student teams worked with each patient to identify health goals and facilitate progress toward those goals. Senior students taught and led the first-year students in motivational interviewing toward achieving these health goals. Students also encouraged conversations about medical conditions

and medication compliance and facilitated regular primary care appointments for each patient. Students also attended weekly didactic sessions on the diagnosis, treatment and medical comorbidities of severe mental illness, as well as goal setting, motivational interviewing and health behaviors coaching. **Results:** In order to measure the effectiveness of our program, we conducted baseline and end-point surveys of both the patients and medical students. We assessed patient attitudes about behavior change through the Patient Activation Measure and used the Short-Form 12 Health Survey to assess if these motivations actually led to changes in patients' quality of life. We tracked medication adherence, appointment attendance and progress toward their self-identified health goal. We assessed medical student attitudes toward patients with mental illness and toward the field of psychiatry through the Belief Toward Mental Illness Scale and the Balon Attitudes Toward Psychiatry Scale, respectively. **Conclusion:** Medical students may be able to improve chronic medical conditions in patients with severe mental illness by coordinating care between ACT teams and primary care providers and by facilitating discussion about patients' health and behaviors. Service learning is an effective way to decrease the stigma associated with mental illness.

No. 6

Tobacco Use and Psychosis Risk in Persons at Clinical High Risk

Poster Presenter: Heather Burrell Ward, M.D.

SUMMARY:

Background: One of the most consistent observations in persons with schizophrenia and other psychotic disorders is a high rate of tobacco use, estimated at three to six times that of the general population. Initiation of smoking occurs before psychosis symptoms emerge for about 75% of persons with schizophrenia, and prospective population-based cohort studies find that risk of schizophrenia is about doubled for tobacco smokers. Based on the observed temporal precedence and that higher levels of tobacco use are associated with higher risk of subsequent schizophrenia, several researchers propose a causal relationship between smoking tobacco and the development of a psychotic disorder. These same investigators

acknowledge, however, the many challenges to establishing causality in observational studies, especially that of confounding factors. Factors associated with increased risk of smoking initiation and dependence in the general population, if also associated with psychosis risk, could confound associations of smoking and schizophrenia. General population factors associated with smoking include depression, anxiety, low self-esteem, impulsivity, trauma, stress, alcohol use, poor academic performance, and low socioeconomic status. The purpose of this study was to evaluate the role of tobacco use in the development of psychosis in individuals at high clinical risk. **Methods:** The North American Prodrome Longitudinal Study is a two-year multisite prospective case control study of persons at high clinical risk that aims to better understand predictors and mechanisms for the development of psychosis. The cohort consisted of 764 clinical high-risk and 279 healthy comparison subjects. Clinical assessments included tobacco and substance use and several risk factors associated with smoking. **Results:** Clinical high-risk subjects were more likely to smoke cigarettes than unaffected subjects (light smoking OR=3.0, 95% CI [1.9, 5.0]; heavy smoking OR=4.8, 95% CI [1.7, 13.7]). In both groups, smoking was associated with substance use, stressful life events and perceived discrimination and in clinical high-risk subjects with childhood emotional neglect and adaptation to school. Clinical high-risk subjects reported higher rates of several factors previously associated with smoking. After controlling for these factors, the relationship between clinical high-risk state and smoking became nonsignificant (light smoking OR=1.9, 95% CI [0.7, 5.2]; heavy smoking OR=0.9, 95% CI [0.1, 7.2]). Moreover, baseline smoking status (HR=1.16, 95% CI [0.82, 1.65]) and categorization as ever-smoked (HR=1.3, 95% CI [0.8, 2.1]) did not predict time to conversion. **Conclusion:** Persons at high risk for psychosis are more likely to smoke compared to unaffected persons. Factors associated with smoking in both groups were more common in the clinical high-risk cohort, and smoking status in clinical high-risk subjects did not predict conversion risk. These findings did not support a causal relationship between smoking and psychosis.

No. 7

Association Analysis Between (AAT)n Repeats in

the Cannabinoid Receptor 1 (CNR1) Gene and Smooth Pursuit Eye Movement (SPEM) Abnormality

Poster Presenter: Jin-wan Park

Co-Authors: Do-eun Lee, Hyeon-ah Lee, Sang-woo Han, Han-Yong Jung, Hwa-Young Lee, Dr.P.H., Se-Hoon Shim, M.D.

SUMMARY:

Background: According to previous studies, the cannabinoid receptor 1 (CNR1) gene, located on chromosome 6q14-q15, could be an important candidate gene for schizophrenia. The association between CNR1 polymorphisms and schizophrenia is actively being investigated, and some studies have linked the AAT-trinucleotide repeats in the CNR1 gene with the risk of schizophrenia. Meanwhile, smooth pursuit eye movement (SPEM) has been regarded as one of the most consistent endophenotypes of schizophrenia. In this study, we investigated the association between the AAT-trinucleotide repeats in the CNR1 gene and smooth pursuit eye movement abnormality in Korean patients with schizophrenia. **Methods:** We measured SPEM function in 187 Korean patients with schizophrenia (84 male, 83 female), and they were divided according to SPEM function into two groups: good and poor SPEM function. We also investigated allele frequencies of AAT-repeat polymorphisms on the CNR1 gene in each group. A logistic regression analysis was performed to find the association between SPEM abnormality and AAT-trinucleotide repeats in each group. **Results:** The natural logarithm value of signal to noise ratio (Ln S/N ratio) of the good SPEM function group was 4.34 ± 0.29 and that of the poor SPEM function group was 3.21 ± 0.70 . In total, seven types of trinucleotide repeats were identified, each containing seven, 10, 11, 12, 13, 14, and 15 repeats, respectively. (AAT)13 allele was most frequently observed, with a frequency of 30.5%. The frequencies of the other repeat alleles (in the decreasing order) were as follows: (AAT)13 (30.5%), (AAT)14 (24.3%), (AAT)12 (19.8%), and (AAT)7 (11.1%). However, no significant associations were found between the number of AAT-repeat polymorphisms of the CNR1 gene and SPEM function. **Conclusion:** No significant associations were found between AAT-trinucleotide polymorphisms and SPEM abnormality in Korean patients with schizophrenia.

No. 8

Maintaining a Target Six Breaths Per Minute During Paced Breathing Task Is Associated With Heart Rate Variability and Attention in Schizophrenia

Poster Presenter: *Bishoy Goubran, M.D.*

Co-Authors: *Lidia Firulescu, M.D., Alessandra Dumenigo, B.A., Roboam Aguirre, M.D. DBA, Ross W. May, Ph.D., Frank D. Fincham, Ph.D., Juan D. Oms, M.D., Marcos A Sanchez-Gonzalez*

SUMMARY:

Background: Paced breathing (PB), a distress tolerance skill typically used as a relaxation technique, has been documented to benefit heart rate variability (HRV) and overall well-being in healthy subjects. Schizophrenics (SCZ) display increased cardiovascular risk and poor cognition manifested as low HRV and attention, respectively. Our preliminary data demonstrate that PB improves HRV and attention in SCZ. However, certain patients do not obtain the full benefits (improved HRV and attention) after PB. Accordingly, we sought to investigate whether the improvements in HRV and attention were linked to the ability to follow a metronome to maintain a respiration rate close to 6bpm during a PB task. **Methods:** Thirty SCZ (12 female) from a community clinic completed psychometric scales for measuring affectivity. Thereafter, a heart and respiratory rate monitor (Zephyr biopatch; Annapolis, MD) was attached to the participant's chest to collect R-R intervals and breathing rates throughout the task. After a 10-minute rest period in the seated position, participants were asked to breathe spontaneously (SB) for six minutes; subsequently, subjects were instructed to PB at 6bpm (1:3 inspiration to expiration) for six minutes following a visual metronome. Attention was measured before and after the experiment using "digits span test." HRV analyses were performed on R-R intervals using Kubios HRV[®]. Transient changes between phases SB versus PB were minimized by excluding the first minute of each phase. The mean respiration rate, coefficient of variation and standard deviation (SD) of respiratory rate were also calculated. Subjects were grouped according to mean of their breathing rate into a group successfully following PB maintaining breathing rate close to 6bpm

(responders; R) and a group unable to maintain PB task (non-responders; NR). Simple t-test and a 2 by 2 ANOVA with repeated measures were used to compare the groups (R vs. NR) at baseline and in response to the breathing task (SB vs. PB). **Results:** Patients' demographics (M \pm SEM) were weight (85.7 \pm 4.3kg) and age (48.2 \pm 3.2 years). R had significantly (<0.05) higher attention levels and HRV than NR both before and after the task. In contrast, SCZ subjects with lower attention levels were incapable of following the PB task, and their breathing rates were recorded to be at least two standard deviations away from the target of 6bpm. **Conclusion:** Results revealed that R SCZ or those who successfully followed the PB task had higher attention scores and higher HRV at baseline and in response to the PB task. We postulate that the ability to follow a target breathing rate of 6bpm during PB reflects a subject's attention and HRV and thus can assess cognitive levels and disease severity. Further studies are needed to identify whether the ability to maintain a target 6bpm during PB task could be used as an indicator of other cognitive domains.

No. 9

Integrated Assessment of Visual Perception Abnormalities in Schizophrenia and Their Relationship With Clinical Characteristics

Poster Presenter: *Halide Bilge Turkozer*

Co-Authors: *Volkan Topcuoglu, Yue Chen, Tuna Hasoglu, Lesley A. Norris, Meredith Brown, Nate Delaney-Busch, Hikmet E. Kale, Zahide Pamir, Huseyin Boyaci, Gina R. Kuperberg, Kathryn Eve Lewandowski, Ph.D., Dost Ongur*

SUMMARY:

Background: The visual system has increasingly been recognized as an important site of pathology and dysfunction in schizophrenia. The aim of this study was to develop a comprehensive task battery evaluating different visual perceptual functions in patients with psychosis and to assess the discriminative power of these tasks between groups of subjects along with their relationship to clinical characteristics. **Methods:** Twenty-six patients with schizophrenia and schizoaffective disorder (mean age=43.7, 65.4% male) and 21 healthy control subjects (mean age=40.78, 52.38% male), ages 18–

60, participated in the study. Five different areas of visual functioning were evaluated using a task battery: visuospatial working memory (WM), velocity discrimination (VD), contour integration (CI), illusory size perception, and backward masking. Symptom severity was evaluated using the Positive and Negative Syndrome Scale (PANSS), and schizotypal traits in healthy controls were assessed using the Schizotypal Personality Questionnaire (SPQ). **Results:** Patients demonstrated significantly lower performance for VD, CI and visuospatial WM tasks (all $p < 0.005$). Performances of illusory size perception and backward masking tasks did not differ between the two groups. Discriminant analyses yielded two models to classify patient and control groups using visual task performance. Discriminant scores obtained from performances of WM-CI and VD-CI tasks were able to classify over 70% of participants correctly. To better characterize individuals with higher risk profiles, a more homogenous group of healthy individuals distinct from patients may be needed. Therefore, we performed further analyses using data from healthy individuals only with schizotypal scores lower than the 75th percentile. The discriminant score obtained from VD and CI task performance was able to classify patients and healthy controls with low schizotypal traits with 88.5% sensitivity and 75% specificity in this analysis. Furthermore, the VD-CI model showed significant correlation with both the severity of negative symptoms in patients ($p = 0.004$) and negative schizotypal traits in healthy controls ($p = 0.005$). **Conclusion:** These results demonstrate that an integrated assessment of perception using multiple selective visual tasks is better at classifying groups than individual tasks and has both state and trait indicator characteristics. These findings also highlight the fact that healthy controls are actually a heterogeneous group with individuals who might share similar neurodevelopmental backgrounds with psychosis patients. Our future objective is to examine the potential use of visual system assessments in risk evaluation, early diagnosis or predicting treatment response as neurobiological tools that assist clinical diagnostic methods.

No. 10

Insulin Resistance in Patients With Schizophrenia: A Marker of Accelerated Aging?

Poster Presenter: Ellen E. Lee, M.D.

Co-Authors: A'verria Martin, Ph.D., Lisa Eyler, Ph.D., Dilip V. Jeste, M.D.

SUMMARY:

Persons with schizophrenia have significantly greater morbidity and mortality than the general population due to physical illnesses such as metabolic and cardiovascular disease. People with schizophrenia have higher rates of metabolic syndrome, possibly associated with unhealthy diet, low physical activity, smoking, obesity, use of antipsychotic medications, poor health care, and dysregulated inflammation associated with schizophrenia. Few studies have compared insulin resistance and possible covariates in persons with schizophrenia versus the general population. Short-term treatment trials with metformin have not shown improved insulin resistance in persons with schizophrenia. We studied metabolic biomarkers in the context of sociodemographic variables to better characterize insulin resistance in persons with schizophrenia. We conducted a cross-sectional study of 123 participants with schizophrenia (mean age 48.3 ± 10.1 years) and 115 healthy comparison subjects (HCs) without any major mental illness (mean age 48.7 ± 11.7 years). Sociodemographic, clinical and physical measures (e.g., blood pressure, body mass index (BMI), waist circumference), as well as laboratory measures including fasting insulin, glucose and hemoglobin A1C, were examined. We assessed for metabolic syndrome in study participants using the NCEP ATP III definition of metabolic syndrome, Homeostatic Model Assessment for Insulin Resistance (HOMA-IR) and hemoglobin A1C. We compared biomarker levels, calculated correlations between the biomarkers and other factors, and conducted linear models to assess the diagnostic group differences when controlling for covariates. The two groups were comparable in age, gender and race, though the schizophrenia group smoked more, had significantly higher rates of metabolic syndrome and insulin resistance, and had higher BMI and higher levels of hemoglobin A1C, insulin and glucose than the HCs. HOMA-IR was significantly associated with age within the participants with schizophrenia ($p = 0.048$) and with waist circumference, BMI and blood pressure within both groups. Within the schizophrenia group, there were no significant

correlations with illness duration, smoking or antipsychotic medication usage. The linear model of HOMA-IR levels with diagnostic group, age, gender, and all two- and three-way interactions showed a main effect of diagnostic group ($F[1,238]=17.0$, $p<0.001$, Cohen's $d=0.69$) and a diagnosis-by-age interaction ($F[1,238]=3.9$, $p=0.051$, Cohen's $d=0.46$). HOMA-IR may be a useful biomarker for metabolic syndrome that warrants further investigation for understanding metabolic changes in schizophrenia.

No. 11

A Pilot Study of Predictors of Outcome in Cognitive Behavior Therapy for First-Episode Schizophrenia in Beijing

Poster Presenter: Fanqiang Meng

Co-Authors: Zhihua Guo, Zhanjiang Li, Jing Sun

SUMMARY:

Background: Cognitive behavior therapy (CBT) has been shown to be effective in a randomized controlled trial for Chinese people with first-episode schizophrenia. There is little known about predictors of outcome in CBT for first-episode schizophrenia and even less about hypothesized mechanisms of change. **Objective:** Discuss baseline variables as predictors of outcome in CBT for first-episode schizophrenia using data from a clinical trial, test the hypothesis that changes in cognitive mechanisms will be associated with symptom change and help clinicians learn to choose first-episode schizophrenic patients who are suitable for CBT. **Methods:** Eighty participants with schizophrenia took part in the study. Forty patients received CBTp in addition to treatment as usual (TAU). Forty patients received TAU only. All patients were assessed on symptoms using the Positive and Negative Syndrome Scale (PANSS) and neuropsychological function, including the Coping Style Questionnaire (CSQ) and Irrational Belief Scale (IBS), before and after CBTp. We also measured patients' demographic characteristics that may be associated with outcome. **Results:** There were no significant differences in symptoms, irrational beliefs and coping styles between the two groups ($p=0.05$). The CBTp+TAU group showed greater improvement from baseline to follow-up than the TAU control group on total and positive symptoms as well as self-blaming, problem-solving and generalization commentary ($p=0.05$). Greater

pre-therapy self-blaming scores at baseline correlated with improvement in total symptoms ratings in the CBTp+TAU group ($r=0.512$, $p=0.040$), but not the TAU control group ($r=0.12$, $p=0.48$). Less pre-therapy generalization commentary at baseline correlated with improvement in total symptoms in the CBTp+TAU group ($r=0.419$, $p=0.039$), but not the TAU group ($r=0.055$, $p=0.82$). Greater pre-therapy problem solving scores at baseline correlated with improvement in total symptoms ratings in the CBTp+TAU group ($r=0.490$, $p=0.036$), but not the TAU control group ($r=0.146$, $p=0.54$). All of the above correlation coefficients differed between both groups ($p=0.05$). There was also a significant correlation between duration of illness and improvement in PANSS total score in both groups. **Conclusion:** CBT appears to change the cognitive mechanisms, and these changes are associated with good outcomes. CBT may be more effective for those who are younger with shorter duration of illness. In the future, a big sample will be needed to further test this conclusion.

No. 12

Efficacy of 42 Pharmacological Cotreatment Strategies Added to Antipsychotic Monotherapy in Schizophrenia: Overview of Meta-Analytic Evidence

Poster Presenter: Jose M. Rubio

Co-Authors: Christoph U. Correll, M.D., Gabriella Inczedy-Farkas, Michael Birnbaum, John M. Kane, M.D., Stefan Leucht

SUMMARY:

Background: The limited treatment response in schizophrenia has prompted the study of the combination of an antipsychotic with another drug (not necessarily another antipsychotic) as a strategy for suboptimal response. Despite being widespread practice, its efficacy is controversial. While there have been numerous randomized controlled trials and meta-analyses on this type of intervention, results are not easily comparable in quality and clinical significance. This literature cannot inform clinicians as to which of the multiple studied combinations has a stronger evidence base for its recommendation. In this poster, we summarize and compare the meta-analytically determined efficacy of antipsychotic augmentation in adults with schizophrenia. **Methods:** We conducted a systematic

overview of meta-analyses of randomized controlled trials comparing the efficacy of combination treatment (antipsychotic plus any other drug) versus antipsychotic monotherapy in adults with schizophrenia. Independent reviewers searched PubMed and PsycINFO, extracted the data and assessed the methodological quality using the AMSTAR, plus a newly developed rating tool for the quality of the meta-analyzed content. Effect sizes, expressed as standardized mean difference or risk ratio, were compared separately for combinations with any antipsychotic and with clozapine. Our primary outcome was total symptom reduction; secondary outcomes were positive, negative, cognitive, and depressive symptoms; study-defined inefficacy; and treatment discontinuation. To assess for systemic bias, we compared in a meta-regression the quality of the meta-analyses with the effect sizes. **Results:** Out of 3,397 publications, 29 meta-analyses testing 42 combination strategies in 381 individual trials and 19,833 participants were included. For total symptom reduction, 32 strategies augmenting any antipsychotic and five strategies augmenting clozapine were examined. Fourteen combinations outperformed monotherapy (SMD=-1.27 to -0.23), yet none of them with clozapine. Methodological quality of the meta-analyses was generally high (mean score=9.4 out of 11), but content quality of the meta-analyzed studies was low (mean score=2.8 out of 8). Poorer content quality was related to higher effect sizes in total psychopathology ($p=0.001$). **Discussion:** Despite some strategies showing large effect sizes, those were inversely correlated with the quality of meta-analyzed studies, which was low for most strategies, suggesting high risk of bias. Although 18 out of 42 interventions were recommended by the authors of the meta-analyses, our quality assessment suggested that none of them could be broadly recommended. These findings contrast with other research suggesting that a minority of patients with schizophrenia who respond to combination treatment relapse on monotherapy. Therefore, higher quality trials and especially patient-based meta-analyses are necessary to determine whether and which subpopulations might benefit from combination treatment.

No. 13

The Changes in Marital and Professional Role in Patients With Schizophrenia: A 20 Years Follow-Up Study

Poster Presenter: Adriana Mihai

Co-Authors: Alex Mihai, Maria Crainic

SUMMARY:

Background: Schizophrenia is known as a disorder with important impact on familial and professional life. This study evaluated the changes in marital and professional status during the long-term evolution of this severe mental disorder. **Methods:** Patients with a diagnosis of schizophrenia admitted in 1994 in an acute psychiatric clinic were followed up after 20 years in 2014. We collected the demographic data of patients diagnosed with schizophrenia from the administrative database. The data reflected the patients' socioeconomic situation at the moment of their first admission and in 2014. **Results:** From 70 patients admitted in 1994, 57 (81.42%) were followed up and included in this study in 2014. Male to female ratio was 0.78. The average age of onset was 23.07. In our sample, 17.55% of patients remained married; female patients divorced more frequently than male patients. Half of the patients were employed, and 45.61% were unemployed before the onset of the psychiatric disorder. Only 24.13% of those employed at the moment of onset of disorder continued to be employed in 2014, and 36.84% are still unemployed. There is a significant risk ($p<0.001$) of loss of employment in this category of patients. A high percentage of them (36.84%) have no revenue, being financially dependent and supported by their families. **Conclusion:** Both the marital and professional status of patients with schizophrenia has significantly changed during the long course of this disorder. Patients have a significantly low ability to establish a marital relationship and a very high unemployment rate. The burden of schizophrenia in society is very high, and policy makers have to support and encourage the efforts of these patients and provide help for their reintegration in society as active members with families and professional lives. **Keywords:** Schizophrenia, Marriage, Employment

No. 14

Effects of Cognition on Social Adjustment and Community Functioning in First-Episode Psychosis

Poster Presenter: Polly Huynh, B.S.

Co-Authors: Mei-Hua Hall, Ph.D., Kathryn Eve Lewandowski, Ph.D., Ann K. Shinn, M.D., M.P.H., Dost Öngür, M.D., Ph.D.

SUMMARY:

Background: Cognition and social adjustment are among the greatest challenges on the path to recovery for patients with first-episode psychosis (FEP). Cognition is highly predictive of functional outcome. The goal of this study is to examine the relationship between cognition, community function and social adjustment in FEP. We predict that cognition has a positive effect on both community function and social adjustment. **Methods:** Social adjustment, community functioning and cognition were assessed in 19 patients at the McLean first episode clinic and 16 controls. FEP patients included individuals with *DSM-IV-TR* diagnoses of bipolar or major depressive disorder with psychosis, schizophrenia, schizoaffective disorder, or psychosis NOS. Cognition, social adjustment and community functioning were assessed using the MATRICS Consensus Cognitive Battery (MCCB), the modified Social Adjustment Scale (SAS, focusing on work/academic, social and family status), and the Multnomah Community Ability Scale (MCAS), respectively. Data from the Young Mania Rating Scale (YMRS), Montgomery-Åsberg Depression Rating Scale (MADRS), and Positive and Negative Syndrome Scale (PANSS) were also collected in patients. Partial correlations were used to examine the relationships between cognition (neurocognition or social cognition), social adjustment and community functioning, controlling for age and sex in all subjects. Multiple regression analyses were carried out in which PANSS total score, MADRS, YMRS, SAS, MCAS total score, education, and PANSS insight subscore were entered in the model as predictors of neurocognition or social cognition in patients. **Results:** MCAS total score was significantly correlated with both neurocognition ($r=0.51$, $p=0.01$) and social cognition ($r=0.53$, $p=0.006$) in all samples. The SAS was nonsignificantly correlated with neurocognition ($r=0.27$), social cognition ($r=0.23$) or MCAS ($r=0.16$) (all $p>0.1$). The YMRS was a significant predictor of social cognition (coefficient=-0.94, $p<0.001$), with higher YMRS scores predicting poorer social cognition ($r=-0.74$). The MCAS was a

significant predictor of neurocognition (coefficient=-0.57, $p=0.05$), with MCAS positively correlated with social cognition ($r=0.59$). **Conclusion:** Our results suggest that cognition is associated with functional outcome, consistent with prior reports. Social adjustment was not significantly related to cognition in our study, but preliminary results suggest that mania is a strong predictor of social cognition. Lower manic symptoms predicted better social-emotional processing, indicating that mood disturbance is associated with the ability to relate to social situations. Limitations include small sample size and possible confounding by medication effects. We are collecting a larger sample to confirm these preliminary results.

No. 15

Antipsychotic Polypharmacy and Its Impact on Health Care Utilization: A Historical Cohort Analysis

Poster Presenter: Rabin Dahal, M.D.

Co-Authors: Shreedhar Paudel, M.D., M.P.H., Neda Kovacevic, M.D., Shwetha Katta, Lazar Jankovic, Astha Joshi, M.P.H., Ljiljana Markovic

SUMMARY:

Background: Antipsychotic polypharmacy (APP) is commonly practiced despite having controversial efficacy over antipsychotic monotherapy (AMT). In naturalistic settings, APP is most often used in inpatient psychiatric units, but there are limited studies on the outcomes. With this background, we wanted to compare health care service utilization between patients on APP and those on AMT in a naturalistic inpatient setting. **Methods:** This is a historical cohort study conducted in psychiatric units among patients discharged on antipsychotic medications. A total of 155 patients discharged on one antipsychotic and 95 patients discharged on more than one antipsychotic within the first six months of 2013 were identified as the AMT and APP groups, respectively. The records were followed for each patient for three years after respective index hospitalization. Number of psychiatric rehospitalizations, number of psychiatric emergency visits and days of inpatient stay were our study outcomes. We also reviewed relevant baseline demographic data. The data were analyzed quantitatively to compare the outcomes between APP and AMT groups. **Results:** At baseline, the APP

group had 42% schizoaffective disorder, 14% schizophrenia and 24% bipolar disorder, whereas the AMT group had 15.4% schizoaffective disorder, 4.7% schizophrenia and 27.9% bipolar disorder. The APP group had a higher percentage of people with SSDI benefits (71.5% APP vs. 39.3% AMT) and DMH services (50.4% APP vs. 12.9% AMT). About 44% of APP and 37.5% of AMT people had suicide attempts in past, whereas 9.4% of APP and 14.8% of AMT people were homeless. Our results at the end of three years indicated differential consumption of services by the groups. When compared to the AMT group, the APP group had significantly higher psychiatric readmissions. Relative risk (RR) for more than three readmissions was 1.7 ($p=0.02$). Similarly, the APP group had more psychiatric emergency visits in comparison to the AMT group. RR for more than six psychiatry emergency visits was 2.1 ($p=0.02$). Average number of psychiatric emergency visits was 3.4 in APP and 2.08 for AMT group ($p=0.03$). Average number of psychiatric hospital days was 31.13 for APP and 19.51 for AMT ($p<0.001$). When compared to the AMT group, the APP group was likely to stay more than 10 days in a psychiatric hospital (RR=1.4, $p=0.0001$). Similarly, 52.13% of APP people and 31.54% of AMT people stayed more than 19 days in a psychiatric hospital during the study period ($p<0.05$). **Conclusion:** APP is a common practice, but our study found higher rates of psychiatric rehospitalizations and psychiatric emergency visits and a higher number of psychiatric hospital days in the APP group in comparison to the AMT group. Our study finding should be interpreted cautiously, as the comparison groups were diverse at baseline in terms of diagnosis, rate of homelessness and utilization of DMH services. Randomized controlled trials and prospective studies with homogeneous groups might help to verify our findings.

No. 16
Evaluating the Effect of the Changes in FDA Guidelines for Clozapine Monitoring

Poster Presenter: Ryan S. Sultan, M.D.
Co-Authors: Mark Olfson, Steven Garlow, Erica Duncan

SUMMARY:

Background: Concerns exist that clozapine is underutilized in the management of treatment-

resistant schizophrenia. Although a 2015 change in the Food and Drug Administration (FDA) monitoring recommendations lowered the threshold of the absolute neutrophil count for treatment interruption from 1,500 per μL to 1,000 per μL and removed white blood count thresholds from the monitoring algorithm, the implications of this policy change on clozapine interruptions remains unknown. **Methods:** We analyzed outpatient prescribing records for antipsychotic medications in the Veterans Integrated Service Network 7 (VISN 7) from 1999 to 2012 to assess the potential impact of the recent changes in FDA neutropenia monitoring recommendations on clozapine treatment continuity. We evaluated results of CBC monitoring to compare percentages of patients who did or would have developed one or more hematologic events under the previous and current FDA guidelines in the first year following initiation of clozapine. **Results:** From a cohort of 14,620 patients with schizophrenia (ICD-9 295.x), 246 patients initiated clozapine. No agranulocytosis was observed during the study period. Under the former recommendations, five patients (3.1%, 95% CI [0.43, 5.83]) qualified for treatment interruption during the first year of clozapine treatment, while only one patient (0.6%) qualified under the current recommendations. Under the former recommendations, hematologic events occurred at a similar rate for individuals on and off clozapine. **Conclusion:** The new FDA monitoring guidelines are likely to substantially reduce the percentage of patients who meet criteria for clozapine-associated hematologic events requiring treatment interruption. This decrease may reduce the clinical burden of managing patients on clozapine and therefore increase the number of individuals treated with this uniquely effective medication.

No. 17
Genome-Wide Association Study of Depressive Symptoms Among a Large Sample of Smokers and Network Analysis

Poster Presenter: Jonathan Heinzman
Co-Authors: Karin Hoth, Elizabeth Regan, Barry Make, Greg Kinney, Frederick Wamboldt, Kristin Holm, Carlos Martinez, Michael Cho, Edwin Silverman, James Crapo, Shizhong Han, James Potash, Gen Shinozaki, M.D.

SUMMARY:

Background: Depression is the most common psychiatric disorder in the United States, having a prevalence of nearly 16%. Although twin studies support that genetic factors influence depression, few risk genes have been identified. Because effects from many variants with small effect sizes likely underlie it, a hypothesis-free genome-wide association study (GWAS) approach is useful. A GWAS requires a large sample size, however, which is time-consuming and expensive. To overcome these challenges, this study used existing genome-wide genotypic and phenotypic data for nearly 10,000 chronic smokers from the COPDGene study. This population was used because depression has higher prevalence in both smokers and COPD patients and an association with increased mortality in COPD. This study aimed to identify genetic risk factors for depression among the COPDGene cohort. **Methods:** The data were from 9,716 COPDGene subjects, including current and former smokers (i.e., 10 or more pack-year history, mean age=59.4, SD=9.0, 46.5% female), with 3,140 African-American (AA) and 6,576 non-Hispanic White (NHW) subjects. The depression phenotype was defined using both the Hospital Anxiety and Depression Scale (HADS) and antidepressant use. 24.7% of the NHW group (1,622) and 12.5% of the AA group (391) were classified as having depression. An established GWAS pipeline provided the most highly associated genes for each ethnic group. Network analysis tools such as GeneMANIA, DAVID, ConsensusPathDB, and GLITTER then determined the relevance of top genes to depression. DAVID and ConsensusPathDB determined common gene pathways, GeneMANIA investigated genetic interactions between genes and GLITTER analyzed co-expression patterns in human tissue. **Results:** The most highly associated single nucleotide polymorphisms (SNPs) showed significance in the range of $p \approx 10^{-6}$ —not surviving genome-wide correction. Some top SNPs in the NHW sample were in genes already associated with depression and other psychiatric conditions. The fifth top SNP (rs12036147, $p=1.28 \times 10^{-6}$) is near CHRM3 (rs12036147, $p=1.28 \times 10^{-6}$), which codes for a muscarinic acetylcholine receptor in the central nervous system. Another group of SNPs were near the MDGA2 gene (rs17118176, $p=3.52 \times 10^{-6}$ and rs113304767 and rs11849139, $p=3.53 \times 10^{-6}$), which

was the top result in a neuroticism GWAS. Further, top genes formed networks involved in synaptic transmission and showed a trend of stronger co-expression in the brain than in other non-brain tissues. Therefore, despite using a symptom- and treatment-based definition of depression instead of diagnosis, COPDGene data provides a significant opportunity for genetic association studies of depression. **Conclusion:** Future studies investigating depression with more precisely defined psychiatric phenotypes would significantly contribute to an understanding of the genetic risk of depression among COPD patients.

No. 18**The Effect of NUDT6 Expression on Contextual Learning Assessed by Passive Avoidance Test**

Poster Presenter: Fatma Özlem Hökelekli

Co-Authors: Murat Yilmaz, Emre Cem Esen, Koray Basar, Yavuz Ayhan, Turgay Dalkara, Emine Eren Koçak

SUMMARY:

Background: Natural antisense transcripts are RNAs that are transcribed from the opposite strand of protein coding sense transcripts. A well-known example of sense-antisense pairs is FGF2 and its protein coding antisense partner, NUDT6 (FGF-AS or GFG). Although there are studies investigating the role of FGF2 in learning, the NUDT6-learning relationship is a relatively new field of research. In a study assessing general cognitive abilities of mice, the NUDT6 gene was shown to be more expressed in animals exhibiting fast learning activities. In this study, we investigated the effect of NUDT6 protein expression on contextual learning. **Methods:** Eight- to 10-week-old male Sprague-Dawley rats were used for the experiments (N=7–13 rats per group). In the first part, NUDT6 was overexpressed by repeated daily intracerebroventricular injections of a full-length rat NUDT6 plasmid for two weeks. In the second part, NUDT6 was knocked down by three lentiviruses expressing different NUDT6-shRNA sequences. Changes in protein levels were assessed by Western blotting and immunohistochemistry. Contextual learning was tested by passive avoidance task, which uses a box consisting of dark and bright compartments separated by an automatic door. In the training phase, animals were placed in the bright

compartment while the door was closed. Ten seconds later, the door was automatically opened, allowing animals to enter the dark compartment. When animals entered the dark compartment, they received a foot shock of 0.9mA lasting for two seconds. Six hours later, animals were placed into the bright compartment and their latency to enter the dark compartment was noted as a measure of learning and memory. If the animal did not enter the dark compartment within 300 seconds, the experiment was terminated. Mann Whitney U test was used for comparing control and experimental groups. A p-value less than 0.05 was considered to be statistically significant. **Results:** We showed that intracerebroventricular NUDT6 plasmid injection resulted in an increase in hippocampal NUDT6 protein expression. The median latency to enter the dark compartment was 300 seconds (IQR=207 seconds) in the NUDT6-overexpressed group and 300 seconds (IQR=218 seconds) in the control group. We did not find any statistically significant differences between groups. In the NUDT6 knockdown groups, the median latency to enter the dark compartment was 222 seconds (IQR=214 seconds), 300 seconds (IQR=214 seconds) and 300 seconds (IQR=137 seconds), respectively. Median latency for the control group was 300 seconds (IQR=211seconds). Differences between the NUDT6 knockdown groups and the control group were found not to be statistically significant. **Conclusion:** In this study, we showed the manipulations of NUDT6 protein expression in the hippocampus did not affect the performance in contextual memory tested by passive avoidance. This project is supported by The Scientific and Technological Research Council of Turkey, SBAG 110S481 and the Loreal-UNESCO (Turkey) for Women in Science Program.

No. 19

Anxiety: A Common Trait of Borderline and Schizotypal Personality Disorder

Poster Presenter: Andrea Bulbena-Cabre

Co-Authors: Amanda Fisher, John Samuels, Ludwing Florez Salamanca, Jose M. Rubio, Asya Latifoglu, Harold W. Koenigsberg, M.D., Marianne Goodman, M.D., Erin Hazlett, Ph.D., Margaret Mcnamara, Antonia S. New, M.D., Luis Ripoll, Mercedes Perez-Rodriguez

SUMMARY:

Background: The relationship between borderline personality disorder (BPD) and schizotypal personality disorder (SPD) has been debated for years. In fact, it was not until 1987, with the release of *DSM-III-R*, when the broad term of “borderline disorders” was separated into BPD and SPD. Research data support the classification of BPD and SPD as separate diagnostic categories. While SPD has been linked to schizophrenia based on genetic, neurobiological and phenomenological data, BPD shares common neurobiological and symptom profiles with affective disorders and posttraumatic stress disorder. However, there are numerous studies that indicate that SPD and BPD frequently co-occur and have similar comorbidities such as mood and anxiety symptoms. In this study, we compared anxiety symptoms in SPD and BPD patients, compared to patients with other personality disorders and healthy controls. Rather than focusing on categorical anxiety disorders, we assessed anxiety traits using self-reported questionnaires that capture subthreshold anxiety symptoms not fulfilling criteria for overt anxiety disorders. **Methods:** 854 individuals classified in five different groups—healthy controls, BPD, SPD, comorbid BPD and SPD, and other PD (non BPD/SPD)—were recruited. Diagnoses were made using SCID-IV, and anxiety was evaluated using the Spielberger State-Trait Anxiety Inventory (STAI). **Results:** The BPD, SPD and comorbid BPD/SPD groups scored significantly higher in the STAI trait compared to patients with other personality disorders ($p < 0.001$) and healthy controls ($p < 0.001$). However, despite slightly higher STAI trait scores among those with comorbid BPD and SPD, there were no significant differences between this group and those with BPD or SPD alone. **Conclusion:** Patients with BPD and SPD have high levels of anxiety symptoms compared to patients with other personality disorders and healthy controls. High anxiety seems to be a common trait of both SPD and BPD.

No. 20

Anxiety Phenotype in Bipolar Disorders

Poster Presenter: Andrea Bulbena-Cabre

Co-Authors: Antonio Bulbena, Mercedes Perez-Rodriguez, Katherine Burdick, Purificacion Salgado

SUMMARY:

Background: Anxiety disorders (AD) are highly prevalent in bipolar disorder (BD), but little is known about this comorbidity, and it has important treatment implications. Since the neurobiology of the joint hypermobility syndrome has recently provided new light to understand the pathophysiology of anxiety, it might be also relevant to clarify the clinical phenotype of bipolar patients suffering from AD. The aim of the study is to determine the phenotype (both clinical and somatic) of bipolar patients who also suffer from anxiety disorders. **Methods:** A sample of 30 patients with bipolar disorder was collected at Parc de salut Mar Hospital in Barcelona. Variables collected included demographic data, psychiatric symptoms, and somatic illnesses and complaints. **Results:** Joint hypermobility was found in 41% of the sample, and the life prevalence of anxiety disorders in this sample was approximately 48%. The prevalence of joint hypermobility in patients with bipolar disorder and comorbid anxiety was 66.7% ($p=0.06$). There were significant differences in the ratings of the SSAS ($p=0.0025$), HAD-A ($p=0.0012$), HAD-D ($p=0.0219$), collagen laxity ($p=0.0120$), STAI State ($p=0.0115$), STAI total ($p=0.0235$), SOCONS ($p=0.0164$), and the Mini BPQ ($p=0.0409$) when comorbid anxiety was controlled for. When comorbid joint hypermobility was controlled for, there were significant differences in the SSAS ($p=0.0076$) and the HAD-A ($p=0.0142$). **Conclusion:** As expected, patients with bipolar disorder and comorbid anxiety have a specific phenotype characterized by joint hypermobility, somatosensory amplification and increased body perception.

No. 21

Allopurinol Augmentation in Acute Mania: A Meta-Analysis of Placebo-Controlled Trials

Poster Presenter: Alexander Chen

Co-Authors: Theodore Malmstrom, Henry A.

Nasrallah, M.D.

SUMMARY:

Background: Allopurinol is a xanthine oxidase inhibitor commonly used in the treatment of gout. Recent studies have also shown its promise as an adjunctive treatment for manic episodes in bipolar I

disorder, possibly through mechanisms involving the purinergic pathway. However, its efficacy across studies has been inconsistent, so we conducted a meta-analysis of published controlled studies with the goal of determining the efficacy profile of allopurinol as an adjunctive treatment for mania in bipolar disorder. **Methods:** An online search was conducted using PubMed for placebo-controlled, randomized, double-blind, clinical trials (RCTs) using the terms “allopurinol,” “bipolar,” “mania,” “manic,” and “YMRS,” and a meta-analysis was conducted in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses statement. **Results:** Four studies met the criteria for inclusion. Two of the four studies were inpatient treatments, one study was outpatient treatment and one study had a mixture of both. All studies used allopurinol as an adjunct in treating acute mania in bipolar disorder subjects. Three of the studies showed efficacy in the primary outcome measure between allopurinol versus placebo groups with significantly reduced YMRS scores, while one showed no significant effect size between the allopurinol and placebo groups. Akhondzadeh et al. treated subjects ($N=75$) with allopurinol 300mg daily as adjunct to lithium and haloperidol and showed an effect size of Cohen’s $d=0.561$. Machado-Vieira et al. treated subjects ($N=91$) with allopurinol 600mg daily as adjunct to lithium and showed an effect size of $d=0.320$. Fan et al. treated subjects ($N=23$) with allopurinol 600mg daily as adjunct to a mood stabilizer (lithium, valproic acid and/or carbamazepine) with an atypical antipsychotic and showed an effect size of $d=0.250$. Weiser et al. treated subjects ($N=180$) with allopurinol 300mg daily as adjunct to non-lithium mood stabilizer and/or antipsychotic and showed an effect size of $d=0.023$. The overall effect size for the four studies is $d=0.25$. No significant difference in side effects were found between groups for any of the studies. **Conclusion:** The data suggest that allopurinol may have some efficacy as an adjunct in reducing mania symptoms during acute manic episodes in patients with bipolar disorder. Adjunctive allopurinol efficacy may be correlated with choice of primary treatment medications. Additional controlled trials with greater sample sizes, homogenous dosing, and consistent primary treatment modalities are needed to determine optimal clinical application.

No. 22

WITHDRAWN

No. 23

Autism Spectrum Disorder Presenting With Bipolar I Disorder With Mania and Psychotic Features: An Overlooked Common Association

Poster Presenter: Ekaterina Hossny

Co-Author: Yassir Mahgoub

SUMMARY:

Background: Several studies suggest an association between autism spectrum disorder (ASD) and bipolar disorder. Symptoms of bipolar disorder can be viewed as part of the underlying developmental disorder, leading to proper diagnosis being unrecognized. The symptoms of mood disorder can be masked by other symptoms or behaviors in the ASD population. It has been suggested that seven percent of patients with ASD have bipolar I disorder with mania and psychotic features. Although risperidone is FDA approved to treat irritability in patients with autism (ages six and older), as well as for treatment of acute manic or mixed episodes associated with bipolar I disorder, there is a paucity of data related to the treatment of patients with the above association. We highlight a common and unrecognized comorbidity between bipolar I disorder and ASD and review treatment response literature. **Objective:** Describe a case of a patient with ASD who presented with bipolar I disorder with mania and psychotic features and demonstrate the unique and fast response to a low dose of risperidone. **Methods:** Methods for this study included systemic PubMed search for "bipolar disorder," "autism," "autism spectrum disorder," "Asperger's," "pervasive developmental disorder;" APA guidelines for treatment of bipolar disorder; and the case summary of a recent patient. **Case:** A 24-year-old female with a history of autism spectrum disorder, high functioning and with no significant medical history, was recently diagnosed with a brief psychotic episode 11 months ago, requiring brief hospitalization. She had a fast and complete recovery on low-dose risperidone but stopped taking her medications four months prior to her second hospitalization. A week prior to hospitalization, she lost her job and had a period of depression mixed

with euphoria, grandiosity, increased irritability and impulsivity, decreased need for sleep, and persecutory delusions that lasted for five days. On admission, labs were within normal limit, and urine toxicology screen was negative. She received haloperidol 5mg and Ativan 2mg for agitation and was restarted on risperidone 0.5mg twice daily, as she responded well to risperidone previously. Her symptoms resolved completely within 48 hours of her presentation, and she returned to her baseline functioning. **Conclusion:** There is common occurrence of comorbid bipolar I disorder and ASD that can be underdiagnosed. ASD with bipolar I disorder presenting with manic and psychotic features may favorably respond to a low dose of risperidone.

No. 24

WITHDRAWN

No. 25

Differential Outcomes in Patients With Unipolar Treatment-Resistant Depression and Bipolar Depression

Poster Presenter: Nicolas A. Nunez

SUMMARY:

Background: Epidemiological data show that about 11% of people in industrialized countries will suffer from depression, with a yearly incidence of about four percent, representing a significant social and economic burden. According to the STAR*D study, more than 50% of patients suffer from treatment-resistant depression (TRD), since they do not respond to a first trial of an antidepressant. Following Akiskal's theory, 60% of these TRD patients may suffer from undiagnosed bipolar depression (BD). However, very few studies have compared the psychopathological and therapeutic trajectories in TRD and BD patients. **Methods:** Psychopathological features and clinical response were investigated prior to treatment (T0) and after treatment (T3) using MADRS, HAM-D17, and global functioning (GAF) in 100 TRD and 70 BD patients. These patients underwent several antidepressant treatment strategies. Only the last trial, when the patient responded to treatment and remained stable for more than six weeks (mean 14.7±4.5, T3) and the treating psychiatrist kept the treatment unchanged,

was included in this study for statistical analysis.

Results: TRD patients were older than BD patients (age 46.5 ± 13.3 vs. 39.9 ± 14.5 , $p=0.003$). The age of the first episode of depression in TRD was 37.6 ± 15.3 and in BD was 27 ± 11.02 ($p < 0.001$). In addition, TRD patients had more suicidal ideation (81% vs. 66%, $p=0.019$), but fewer suicide attempts compared to BD (23% vs. 40%, $p=0.014$). The BD group failed 4.9 ± 2.4 antidepressant trials, while the TRD group failed 3.6 ± 2.6 antidepressant trials; the GAF score was significantly lower in the TRD group than the BD group (55.5 ± 8.6 vs. 61.3 ± 4.513 , $p < 0.001$). At baseline, the TRD group had higher MADRS and HAM-D17 scores (30.8 ± 0.7 vs. 22.6 ± 0.9 , $p < 0.001$ and 18.6 ± 0.7 vs. 14.6 ± 0.9 , respectively, $p < 0.001$). At T3, when both groups were treated with antidepressants plus atypical antipsychotics plus mood stabilizers, the TRD group had a superior delta change compared to the BD group on the MADRS (14.1 vs. 9.2 , $p=0.036$) and HAM-D17 score (10.1 vs. 5.0 , $p=0.022$). The delta change was calculated by subtracting the score after treatment (T3) from the score before treatment (T0). However, after the same treatment, the final MADRS and HAM-D17 scores remained worse in TRD patients compared to BD patients (MADRS score 19.5 vs. 14.4 , $p=0.023$; HAM-D17 score 15.2 vs. 11.7 , $p=0.042$). **Conclusion:** TRD patients exhibited distinct clinical features compared to BD patients and a better pharmacological response compared to BD patients when treated with combination therapies, even if the final prognosis remains poorer for TRD patients.

No. 26

Increased Aggression Is Associated With Higher Scores on Borderline Personality Features Scale in Bipolar Youth

Poster Presenter: Ruchir P. Arvind, M.D.

Co-Authors: Christopher D. Verrico, Ph.D., Pooja A. Amin, M.D., Marguerite Patel, M.D., Ajay Shah, M.D., Ramandeep S. Kahlon, M.D., Laurel Williams, D.O., Kirti Saxena, M.D.

SUMMARY:

Background: Borderline personality disorder (BPD) is a debilitating mental illness that affects approximately one to two percent of the general population. It is a serious, complex condition characterized by a pervasive pattern of instability

and significant deficits in affective, cognitive, behavioral, and interpersonal functioning, with impulsive behaviors and verbal aggression. Previous literature suggests that BPD adds significantly to the burden of BP illness and is associated with a more chronic and severe course and outcome. We utilized the Borderline Personality Features Scale (BPFS) to examine the predictors that may increase the likelihood of borderline features in youth with BD. **Methods:** Thirty participants ages 7–17 with mean age 12.95 ± 3.08 were enrolled from an outpatient specialty mood disorders clinic. Participants met *DSM-IV-TR* criteria for BD-I and -II, and the Course and Outcome of Bipolar Youth criteria for bipolar disorder-not otherwise specified. The 24-item self-report BPFS, as a battery of validated measures, was administered to obtain cross-sectional data from study participants and their respective primary caregivers. BPD features and bipolar symptoms were reported by youth and parents or guardians. Multivariable linear regression analyses examined associations between BPFS total score and various psychopathology-related predictor variables, while adjusting for age, race and primary BD diagnosis. The Buss Perry Aggression Questionnaire (BPAQ) is a 29-item scale for assessing physical aggression, verbal aggression, anger, and hostility. **Results:** Significant positive associations were seen between total score of BPFS Child Version and total score of the BPAQ ($\beta=0.35$, $p < 0.01$). **Conclusion:** Some clinicians opine that early signs of personality disorders are apparent before the age of 18 and that identification of these maladaptive features in children and adolescents is important. To our knowledge, this is the first study to look for clinical symptoms that may predict emerging borderline features in youth with bipolar disorder. The significance of this work lies in the clinical implications of recognizing and treating borderline features in youth. Implementing early psychotherapeutic approaches can be useful for youth manifesting such pattern and can aid clinicians to reduce long-term mood disorder burden. Longitudinal studies are needed to explore the development of borderline personality in bipolar youth.

No. 27

Anhedonia and Inflammation in Bipolar I/II Depression: Results From a 12-Week, Double-Blind,

Placebo-Controlled Clinical Trial of Infliximab

Poster Presenter: Yena Lee

Co-Author: Roger S. McIntyre, M.D.

SUMMARY:

Objective: Investigate the efficacy of infliximab on measures of anhedonia among individuals with bipolar I/II depression exhibiting baseline inflammatory activation. **Methods:** Subjects with bipolar I/II disorder currently experiencing a major depressive episode were randomized to adjunctive infliximab (5mg/kg) or saline control as part of a 12-week, phase 2, double-blind clinical trial. Treatment was administered on weeks 0, 6 and 12. Inclusion criteria included ages 18–65; baseline inflammatory activation (e.g., high-sensitivity c-reactive protein=5; central obesity and at least one of hypertension, hypercholesterolemia or hyperlipidemia; regular smoking; diabetes mellitus, inflammatory bowel disorder); receiving outpatient care; minimum Hamilton Depression Rating Scale 17-Item total score of 20; and Young Mania Rating Scale total score of under 12. Primary outcome was change in the Snaith Hamilton Pleasure Scale (SHAPS) total score (i.e., baseline vs. endpoint) between placebo- and infliximab-treated subjects. **Results:** Preliminary results will be obtained by March 2017 (N=30). As of December 2016, 135 individuals have signed informed consent; 17 subjects have completed the study, and six subjects are currently receiving active treatment or in follow-up. We hypothesize that modulation of the inflammatory systems will improve measures of anhedonia in subjects with bipolar I/II depression exhibiting baseline inflammatory activation. **Conclusion:** Positive results from the proposed proof-of-concept study would instantiate the relevance of inflammatory systems in the phenomenology, and possibly pathoetiology, of mood disorders. Moreover, a positive result would provide the impetus to develop scalable treatments targeting inflammatory systems to mitigate transdiagnostic disturbances like anhedonia.

No. 28

A Structural MRI Study of Excoriation (Skin Picking) Disorder and Its Relationship to Clinical Severity

Poster Presenter: Michael D. Harries

Co-Authors: Sam R. Chamberlain, Sarah A. Redden, Brian Odlaug, Austin Blum, Jon E. Grant

SUMMARY:

Excoriation (skin picking) disorder (SPD) shares symptomology with other obsessive-compulsive and related disorders. Few studies, however, have examined the neurological profile of patients with SPD. This study examined differences in cortical thickness and basal ganglia structural volumes between 20 individuals with SPD and 16 healthy controls using magnetic resonance imaging (MRI). There were no significant differences in demographic variables (age, gender, education, and race) between groups. All subjects completed a structural MRI scan and completed a battery of clinical assessments focusing on SPD symptom severity, depression and anxiety symptoms, and quality of life. In individuals with SPD, increasing skin picking symptom severity correlated with decreased cortical thickness in the left supramarginal gyrus, increased cortical thickness in the left insula, and decreased cortical thickness in the right inferior parietal, right temporal and right supramarginal gyrus. No statistically significant differences in basal ganglia (caudate, putamen and nucleus accumbens) or hippocampal structural volumes were found between groups. This study suggests similarities and differences exist in symptomology between SPD and the other obsessive-compulsive and related disorders. Additional neuroimaging research is needed to better delineate the underlying neurobiology of SPD.

No. 29

Increased Amygdala Reactivity in Ethnic Minority Individuals and Its Relationship to the Social Environment

Poster Presenter: Robert A. McCutcheon

Co-Authors: Michael Bloomfield, Tarik Dahoun, Mitul Mehta, Oliver Howes

SUMMARY:

Background: Ethnic minorities have greatly increased rates of schizophrenia, and this is particularly the case for individuals of Black ethnicity. The risk is most pronounced when individuals are living in areas with few people of their own ethnic group. Amygdala hyperactivity has been linked to paranoid symptoms in psychosis, and increased levels of paranoia have been observed in

ethnic minority individuals. It is possible that increased amygdala reactivity could contribute to the increased risk of psychosis in ethnic minorities. White individuals show an increased amygdala response when viewing Black faces; however, it is not clear if a similar effect is seen in Black individuals. In this study, we hypothesized that ethnic minority participants would display a greater amygdala response to White faces than White British controls and that this increased amygdala reactivity to White faces would correlate with neighborhood-level variables associated with increased incidence rates for psychotic disorders **Methods:** Twenty individuals of White British ethnicity and 20 of Black ethnicity underwent a 3T MRI scan while viewing faces of Black and White ethnicity. Subjects were aged 18–45, with no history of mental illness. Population density, indices of multiple deprivation and percent own-group ethnic density were obtained from the 2011 census. Neighborhood segregation was quantified using the index of dissimilarity method. **Results:** Participants had an average age of 26.7 years and were 48% male. At the within-group level, both groups individually showed greater right amygdala activation to the outgroup faces (White ethnicity $t=2.08$, $p=0.02$; Black ethnicity $t=2.38$, $p=0.015$). Between groups, the Black ethnicity group showed greater right amygdala activation for the White faces over baseline contrast compared to the White ethnicity group ($t=1.84$, $p=0.038$). Within the Black ethnicity group, amygdala reactivity to White faces showed statistically significant correlations with measures of neighborhood population density ($r=0.61$, $p=0.01$), segregation ($r=0.71$, $p=0.003$), deprivation ($r=0.67$, $p=0.04$), and own-group ethnic density ($r=-0.51$, $p=0.04$). **Conclusion:** This is the first time increased amygdala response to White faces has been demonstrated in individuals of Black ethnicity. For the group of Black individuals, significant correlations were observed between amygdala response and neighborhood variables associated with increased psychosis risk. This has relevance for our understanding of the increased rates of paranoia and psychotic disorders in ethnic minority individuals. Further research in patient populations may help clarify etiological relevance.

No. 30

Mirtazapine Use in Depressed Pediatric Oncology Patients

Poster Presenter: Alan Hanft

Co-Authors: Diem-Tran Nguyen, Paulina Kaiser, Susan Turkel

SUMMARY:

Background: Depression is a common, debilitating complication seen in pediatric patients with cancer. Selective serotonin reuptake inhibitors (SSRIs) are currently the first-line pharmacological treatment for depression in the child and adolescent population, but their side effects and drug interactions may be difficult for cancer patients to tolerate. Mirtazapine has been shown to be effective in managing depressive symptoms, including insomnia and chemotherapy-associated symptoms of nausea and anorexia in adults. Mirtazapine has been used in depressed pediatric patients, but very few data exist regarding its use in children and adolescents with a malignancy. To explore the hypothesis that mirtazapine may be an effective and tolerable option to address anxiety and depressive symptoms in pediatric oncology patients, a retrospective chart review was undertaken at Children's Hospital Los Angeles. **Methods:** Pediatric oncology patients seen by the consultation-liaison service at Children's Hospital Los Angeles who received mirtazapine between May 1, 2004, and April 1, 2014, were retrospectively identified. For each patient, mirtazapine dose, duration of use, response, and adverse effects were recorded. Depressive symptoms prior to mirtazapine use were compared to symptoms upon treatment cessation or the last time the patient was seen. **Results:** There were 110 oncology patients of 220 patients seen who were treated with mirtazapine for depression during this period. There were 49 females and 61 males in the study population, and the mean age at mirtazapine initiation was 14.6 years (+3.46). The number of patients with symptoms prior to treatment versus number of patients improved were as follows: depressed mood (110 vs. 70, 63.6%), insomnia (91 vs. 79, 86.8%), anorexia (88 vs. 58, 65.9%), anxiety (70 vs. 48, 68.6%), irritability (65 vs. 33, 50.8%), nausea/vomiting (62 vs. 27, 43.6%), lethargy (49 vs. 15, 30.6%), anhedonia (46 vs. 21, 45.7%), psychosis (26 vs. 10, 38.5%), suicidal ideation (21 vs. 11, 52.4%), and hopelessness (13 vs. 6, 46.2%). The most

improvement with mirtazapine was seen for insomnia (86.8%), anxiety (68.6%), anorexia (65.9%), and depressed mood (63.8%), although all symptoms improved over the course of treatment. **Conclusion:** Among our cohort of 110 patients, there was improvement in depressive symptoms, anxiety, anorexia, and insomnia during the course of mirtazapine administration, indicating a potential role for mirtazapine in addressing depression and anxiety in pediatric cancer patients. Although SSRIs are currently considered first-line pharmacological treatment for depression in children and adolescents, those with cancer may be better served by treatment with mirtazapine.

No. 31

Benefits of Mirtazapine for Depression in Children and Adolescents With Cystic Fibrosis

Poster Presenter: Alan Hanft

Co-Authors: Paulina Kaiser, Diem-Tran Nguyen, Susan Turkel

SUMMARY:

Background: Children and adolescents with cystic fibrosis (CF) are two times more at risk for developing depression than healthy controls, and CF patients with depression have lower quality of life and adherence to treatment. Currently, the first-line pharmacological treatment for depression in children and adolescents is selective serotonin reuptake inhibitors (SSRI), but many patients with CF suffer from nausea, loss of appetite and weight loss, so SSRI side effects may not be acceptable. Mirtazapine increases appetite, has antiemetic and sedating effects, and may be effective for depressive symptoms in CF patients. The associated weight gain may improve prognosis in CF. However, few data about mirtazapine for the treatment of depression in youth exist. Accordingly, a retrospective chart review was undertaken at Children's Hospital Los Angeles (CHLA) to study the utility of mirtazapine in depressed pediatric patients with CF. **Methods:** Records of patients seen for psychiatric consultation at CHLA were reviewed to identify patients with the diagnosis of CF who were prescribed mirtazapine for over five days from May 1, 2004, to April 1, 2014. Nausea, insomnia, anorexia, depressed mood, anxious mood, suicidal ideation, anhedonia, lethargy, hopelessness, psychosis, and weight were

recorded at the initiation and conclusion of mirtazapine treatment. Any adverse effects were noted. **Results:** There were 220 patients treated with mirtazapine, from which 18 patients with CF were identified. Two subjects took mirtazapine for only five days, which was insufficient to appreciate changes in symptoms. One took it for over a year, but was not seen often enough to assess its effects. One took it for ten days, then expired of CF on the eleventh day. Another only took it four days then stopped because he said it made him irritable. Thirteen patients with adequate data to assess any change constituted the study population (nine females, four males). The patients ranged in age from 8 to 20 years. The final daily mirtazapine dose ranged from 7.5mg to 45mg (mean=23mg, median=15mg). Treatment duration ranged from 28 to 1,530 days (mean=426 days, median=197 days). Of the thirteen patients, nine had anorexia, and it improved in all of them. Twelve patients had insomnia, and it also improved in all of them. There was no change for the three patients who had nausea. A mean weight gain of 4.5kg was seen after mirtazapine treatment. Overall, the mean number of depressive symptoms prior to treatment with mirtazapine was 5.2, and it was 0.54 at the end of treatment. **Conclusion:** In this small patient population, depressive symptoms, appetite, insomnia, and weight improved during mirtazapine administration, although no change in nausea was seen. Overall it was well tolerated. Currently, SSRIs are considered first line for treatment of depression in children, but mirtazapine may be a better option for pediatric patients with CF.

No. 32

Attention Bias in Adolescents and Young Adults With Bulimia Nervosa

Poster Presenter: Mirjana Domakonda

SUMMARY:

Background: Cognitive biases, such as attention bias (AB), are postulated to play a significant role in the development and maintenance of bulimia nervosa (BN) symptoms. Recent findings suggest that AB to highly palatable foods on a computerized visual probe task (VPT) was positively correlated with body mass index (BMI) in overweight youth with loss of control eating. Although several studies have

examined AB in adults with BN, few have assessed AB in adolescents and young adults. This study aimed to 1) assess AB to food stimuli in adolescents and young adults with BN compared to healthy controls on a computerized VPT and 2) determine how AB to palatable foods is associated with BN symptom severity. **Methods:** This study will capitalize on an extant longitudinal sample of adolescents with a history of BN to test the above aims. We are administering the visual probe task to 30 adolescent and young adult participants in the longitudinal study, 15 who met *DSM-5* diagnostic criteria for BN upon enrollment in the longitudinal study and 15 age- and BMI-matched controls. Youth are administered the Eating Disorder Examination to assess BN symptom severity. A mixed model analysis of covariance will be conducted to assess AB across all trials for each participant. Independent samples t-tests will be used to compare BN and control groups, and Pearson correlations will be used to assess associations of AB with current symptom severity in the BN group. **Results:** Our preliminary findings suggest that, compared to healthy youth, those with a history of BN selectively attend away from high palatable food stimuli. Data collection is still underway, but this study and all analyses will be complete by the time of the 2017 Annual Meeting. **Conclusion:** These preliminary findings suggest that youth with BN might attend away rather than toward high palatable food stimuli. Such attention away from food stimuli might suggest an avoidance strategy, and our future analyses will inform whether such avoidance is associated with current BN symptoms. Additionally, future analyses will also incorporate baseline, resting state brain activity to determine whether patterns of functional connectivity within attentional (salience) networks might contribute to AB or avoidance of food stimuli in youth with a history of BN. Future directions for this line of research will seek to utilize attention bias modification therapy to treat the AB that may contribute to the maintenance of BN symptoms.

No. 33

Quality Improvement Project to Decrease Medication Burden for Foster Youth

Poster Presenter: Evan J. Trager

Co-Author: Richard J. Lee, M.D.

SUMMARY:

Background: Concern over the increasing prevalence of psychotropic medication use among children and adolescents in the foster care system has led to regulatory and legal changes in a number of states. In California, judicial review is currently mandated for all psychotropic medications prescribed to youths in the foster care system. In brief, treating psychiatrists fill out a series of standardized forms (hereafter known as med declarations) discussing the nature of the child's illness, medications alternatives, past trials of medications, the proposed medication regimen, and other relevant information. A reviewing psychiatrist will then examine the document and either concur with the treating psychiatrist or send the form back for revisions. Concurrence are sent on to the courts, who may approve, deny or set a hearing seeking further information. While the question of what is appropriate medication is ultimately driven by clinical needs, state regulators have advised that, when possible, guidelines that are geared toward lower medication numbers and maximum dosages should be followed. We sought to design a practice improvement project for Riverside County to track adherence to these guidelines. **Methods:** We will first undertake an analysis of the systems that take part in the med declarations and hold meetings involving key informants, including quality improvement staff, data analysis and entry staff, treating psychiatrists, reviewing psychiatrists, and reviewing judges. Data will be collected to identify steps where data fidelity can be improved. Statistics will be obtained to identify how adherence to the guidelines changed both over time and through the review and revision process. **Results:** From a sample of 100 med declarations, 19% were missing age demographics, 18% were missing gender demographics, and nine percent contained medications without defined class or maximum doses, confounding efforts to analyzed compliance. With generous allowances for non-exact spellings, approximately four percent of medications could not be reconciled with a known psychotropic medication. At least 15% of med declarations violated guideline rules for maximum daily doses. For the number of medications allowed based on age, 67%, 12% and 20% were out of compliance for those aged 0–5, 6–11 and 12 and older, respectively.

Discussion: We identified three discrete areas for targeted practice and data improvement: 1) provision of guideline documents to treating psychiatrists; 2) standardization of data entry into tracking documents, including emphasis on use of generic drug names, except when trade name formulations were central to the guidelines, such as for methylphenidate products; 3) creation of a web form-based system for tracking of guideline adherence. We are tracking the implementation of this throughout the county system and developing a streamlined protocol for tracking that can be implemented statewide.

No. 34
WITHDRAWN

No. 35
The Impact of a Resident-Lead School-Based Psychoeducation Program on School-Referral Mental Health Visits

Poster Presenter: Jacqueline Penn

Co-Authors: Geetanjali Sahu, M.B.B.S., Anne Buchanan, George Alvarado, Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: Early intervention for mental illness has been shown to vastly improve children's lives. We previously showed that the bulk of referrals to the emergency room (ER) for psychiatric reasons are middle school students. It is thought that implementing awareness of mental health into their school curriculum would educate them about the issues involved and help prevent the problem from escalating to where an ER visit is required. **Objective:** Provide middle schoolers with awareness of mental health issues, preventive measures and coping skills by incorporating psychoeducation into their regular school curriculum; examine the effectiveness of this psychoeducation curriculum; and elucidate the long-term outcomes of this curriculum in terms of the number of ER visits and inpatient hospitalizations for this population. **Methods:** The psychiatry residency program at Maimonides designed a 45-minute psychoeducation class for eighth graders in a nearby public school that discussed the definition of stress, how it can affect mind and body mentally and physiologically, and how one can break the cycle of

feeling stressed using various techniques. Our residents taught the students stress coping skills and ended the class by asking each student to write down a toolbox of things they can do and a list of people they can talk to when they are stressed. We intend to expand this program by first implementing it for sixth graders and then plan to make it a three-year course spanning the entire middle school years so that these kids have the tools to handle the challenges they are confronted with during a time of transition and through puberty. Data collection included pre- and post-psychoeducation-class surveys of 325 subjects, ER referral numbers for psychiatric reasons, and hospitalizations for this population. Our study design allows us to evaluate this course for the same cohort longitudinally.

Results: This psychoeducation curriculum was overall well received by the students and their teachers, showing significant knowledge gain about mental illness in general and how to cope with stress in particular. We are awaiting IRB approval to administer pre- and post-class surveys and gather data on ER referrals and hospitalizations.

Conclusion: We expect at the very minimum to help middle schoolers cope with stress. It is envisioned that over the long term, middle school student ER referrals for psychiatric reasons would show a significant downward trend.

No. 36
Does It Matter What Comes First? Medications Versus Psychosocial Treatment for ADHD: An Analysis of Commercial Insurance

Poster Presenter: Raman Baweja, M.D., M.S.

Co-Authors: Gudong Liu, Daniel A. Waschbusch, Douglas Leslie, William E. Pelham Jr., James Waxmonsky

SUMMARY:

Background: Pharmacological and psychosocial interventions are both well supported for the treatment of ADHD, with practice guidelines recommending either as an initial treatment option. However, a recent randomized trial using a sequential multiple assignment design found that starting combination treatment with behavioral therapy (BT) was both more efficacious and less expensive than starting with medication. One of the driving factors was the poor uptake of BT in families

already prescribed medication. However, it is not clear if these results generalize beyond the confines of a research study where costs and other barriers to treatment are removed. **Methods:** In children diagnosed with ADHD (excluding autism and intellectual disability) by a medical professional, we examined predictors of psychosocial and pharmacological treatment for ADHD using data from the MarketScan® Commercial Claims and Encounters database for 2008 to 2013. We specifically assessed whether initial treatment with ADHD medication was correlated with reduced uptake of psychosocial treatment (PST). **Results:** In total, 47% of patients diagnosed with ADHD received only medication, 22% received only PST, 19% received both, and 12% received neither treatment. The rates of any PST declined as patients' ages and as time progressed from 2008, with PST significantly less likely in 2012 than 2008 (OR=0.38, 95% CI [0.37, 0.39]. Odds ratios (ORs) for 2008 versus all other assessed years were similar. Male gender, living in the south, and treatment from a nonpsychiatrist professional were associated with reduced likelihood of receiving PST. During the first year after the initial ADHD diagnosis, 65% of patients without previous medication accessed PST versus only 29% of patients who had been prescribed ADHD medication (OR=0.188, 95% CI [0.18, 0.19]). Children ever seen by a psychiatrist were about three times more likely to receive PST. **Conclusion:** Among commercially insured children diagnosed with ADHD, medication treatment was more common than PST. Predictors of increased medication use largely predicted decreased PST. Rates of PST were five times lower in medicated than unmedicated youth. These findings suggest that prescribers and/or parents are unlikely to engage in PST if already prescribed medication. Therefore, PST needs to be started prior to medication if there is a desire for PST to be part of the treatment plan.

No. 37

Cyberbullying and Adolescent Mental Health: A Study of Adolescents on an Acute Inpatient Psychiatric Unit

Poster Presenter: Samantha B. Saltz, M.D.

Co-Authors: Maria Rozon, M.A., David L. Pogge, Ph.D., Philip D. Harvey, Ph.D.

SUMMARY:

Background: Cyberbullying has received wide media attention and appears to be linked to adverse consequences to victims, with multiple suicides reported. In a previous study, we found that cyberbullying was a common experience among adolescent psychiatric patients. In this study, we examined victimization by cyberbullying among adolescent psychiatric inpatients and related it to social media use and histories of adverse early life experience. **Methods:** We collected data on the prevalence of social media utilization and cyberbullying victimization on adolescent psychiatric inpatients between the ages of 13 and 16. Fifty adolescents completed two surveys assessing childhood trauma and a cyberbullying questionnaire. The prevalence of cyberbullying was examined and related to social media use and histories of childhood trauma, as well as the number of social media contacts. **Results:** Twenty-percent (10/50) of participants had been victimized by cyberbullying, while only three admitted to partaking in cyberbullying. Access to social networking sites and engagement in Internet-based communication was common, with most participants engaging on a daily basis or more frequently in at least one social media activity (Facebook 54%, chat rooms 33%, Instagram 53%, Twitter 30%). Victims reported that several forms of media were being utilized to cyberbully (Facebook 6/10, chat rooms 3/10, Instagram 6/10, Twitter 4/10), except emailing. Cyberbullying was associated with higher depression scores ($p=0.024$), anger scores ($p=0.016$) and dissociation symptoms ($p=0.044$). It was found that those who were cyberbullied had lower underreporting scores ($p=0.003$), and therefore, their results appear to be more valid. We also found that emotional abuse was significantly correlated with cyberbullying ($p=0.013$), but the other four types of early life trauma (physical and sexual abuse and physical and emotional neglect) were not. **Conclusion:** These findings suggest that cyberbullying can lead to significant mental health impairments compared to other adolescents treated in an inpatient psychiatric ward. Considering that adolescents who are admitted to these facilities likely have higher depression and anger symptoms at baseline than adolescents living in the community, we suggest that cyberbullying may exacerbate their existing mental health issues. It

was interesting that forms of abuse and neglect besides emotional abuse were not associated with cyberbullying. This is consistent with the fact that abuse via social media can generally only be through emotional measures. We also found that the majority of adolescents did not engage in bullying, but victims were active in social media. This suggests that adolescent education regarding healthy use of technology needs to be provided. Further, additional research needs to determine the role of extensive social media use in mental health problems of adolescents who are not abused, but may otherwise be affected by social media access.

No. 38

A Rare Presentation of Conversion Disorder in an Adolescent Male: A Case Report

Poster Presenter: Ankita Vora, M.D., M.P.H., M.S.

Lead Author: Annemarie K. Loth

SUMMARY:

Case: A 14-year-old Mexican-American boy with a history of developmental delay, anxiety to strangers and significant social stressors, who was a track runner at baseline and functional at his grade level, presented with five days of worsening right-hand clawing, falls, urinary incontinence, and selective mutism, with later progression to dysphagia. He had a minor arm injury six months prior while wrestling with his brother and a change in behavior at that time. His stressors included bullying at school for his ethnicity and legal concerns involving his biological father. On exam, he held his right arm in a flexed position next to his chest with his shoulder adducted, bicep flexed, wrist flexed, and fingers flexed in a fist. He had in-toeing of the right foot, internally rotated and plantar flexed with toe walking. His attitude was guarded, with anxious mood, flat affect with intermittent smiling and goal-directed thought process. He communicated in monosyllables, hand gestures, nods, and writing. He had minimal food intake with BMI in the first percentile. He also had times of emotional build up that he would release through posturing with an arched spine and flexed joints of his right upper and lower extremities. Workup, including EMG/NCS, head CT and brain MRI, was unremarkable. Bush-Francis Scale score was 6. Superimposed catatonia was considered, though Ativan and zolpidem

challenges failed. ECT was an option for further treatment of catatonia if his condition did not improve. He was instead stabilized with Zoloft 150mg daily as well as scheduled and as-needed Ativan. PT/OT/ST, psychotherapy and behavioral reward systems were used, focusing on ability rather than disability. Negative behaviors were disregarded, and attention was brought to positive ones. This approach, as well as encouraging the discussion of his emotions, helped during his emotional episodes. **Discussion:** Prevalence of conversion disorder among children is estimated to be two to four in 100,000. The most common presentation is psychogenic nonepileptic seizures. There is not much description in the literature about a dystonic presentation; thus, treatment and placement of such patients is a challenge. Care of these patients requires a multidisciplinary approach in the proper environment.

No. 39

A Study of Mental Health Literacy in Ambulatory Cancer Patients

Poster Presenter: Shi Hui Poon

Co-Authors: Leslie Lim, Justine Goh, Fu Qiang Wang

SUMMARY:

Background: The diagnosis of cancer is often associated with psychological distress, which can develop into severe psychiatric problems if not properly addressed. The prevalence of depression and anxiety has been found to be three to ten times higher among cancer patients compared to the general population. Correct identification of the etiology, symptoms and treatment of mental disorders is collectively known as mental health literacy (MHL). Prior studies suggest that poor MHL impedes help seeking, with negative consequences on treatment adherence, quality of life and prognosis. However, no research has been carried out among ambulatory cancer patients to date.

Objective: We aim to evaluate the prevalence of depressive and anxiety symptoms in a group of cancer patients undergoing outpatient radiotherapy. We assess the MHL of these patients and compare them with controls comprising medical non-cancer outpatients, after excluding any psychiatric disorder.

Hypothesis: We hypothesize that MHL is associated with lower educational levels and that oncology

patients, some of whom were expected to suffer from psychiatric morbidity, would have higher MHL scores compared to controls, in view of them possibly making contact with psychiatric services.

Methods: In this cross-sectional study, ambulatory cancer patients and controls underwent assessments to determine their levels of anxiety and depression using the Hospital Anxiety and Depression Scale (HADS). Two vignettes, each depicting a case of major depressive disorder (MDD) and generalized anxiety disorder (GAD), were shown to these patients, and their opinions regarding diagnosis, etiology, treatment, and attitudes toward mental health services were evaluated using structured questionnaires. Their responses were tallied to form a composite MHL score. **Results:** A total of 112 oncology patients and controls were matched based on gender and age. Oncology patients displayed higher rates of anxiety (16.1% vs. 8.9%) and depressive (3.6% vs. 1.8%) symptoms compared to controls; however, these differences were not statistically significant ($p=0.248$; $p=0.564$). Oncology patients were found to be significantly less educated than their matched counterparts ($p=0.006$), but they did not demonstrate superior MHL composite scores compared to controls. Furthermore, controls were more likely to correctly identify MDD, while oncology patients were more likely to correctly identify GAD. The perception of patients with mental illnesses, use and side effects of psychotropic medications, and knowledge regarding psychiatric referrals were comparable between both groups ($p=0.211-0.652$). **Conclusion:** While ambulatory cancer patients suffer from higher levels of depressive and anxiety symptoms, our findings suggest that these patients did not show superior MHL compared to controls. Targeted psychoeducation and intervention should be implemented to increase awareness and to encourage help seeking in this group.

No. 40

Affective Empathy May Differentiate Smokers Who Quit During Pregnancy From Those Who Do Not: Preliminary Findings From an Ongoing Pilot Study

Poster Presenter: Amy Curtis

SUMMARY:

Background: Pregnancy appears to be associated

with unique, yet-to-be identified processes that facilitate an abrupt change in cigarette smoking behavior in women in a fashion that varies inter-individually. We previously demonstrated an inverse relationship between the ability to accurately perceive distress cues in others (empathic ability) and biologically quantified cigarettes per day across pregnancy, with the oxytocin receptor gene moderating this link. We posit that empathic processes could represent a central mechanism of smoking behavior change during pregnancy. Extending this work to a new cohort; we tested the hypothesis that smokers who quit upon recognizing pregnancy (spontaneous quitters) have greater empathic capacity than those who continue smoking (persistent smokers). **Methods:** Twenty-two pregnant women ($M=28.8$ years old) who were smoking during the last menstrual period were assessed in early pregnancy ($M=16.8$ weeks) using performance-based neurocognitive paradigms linked to neuroanatomical correlates of affective and cognitive empathy (pain paradigm, face/eye emotion processing). Women were categorized into spontaneous quitter or persistent smoker groups based on baseline and third trimester expired CO, urine cotinine and interviews. To specifically examine natural processes of behavior change, women receiving treatment for smoking cessation were excluded. **Results:** Data for affective sharing and empathic concern tasks for the first 22 participants (10 spontaneous quitters, 12 persistent smokers) are available ($N=37$ anticipated by March 31, 2017). Interestingly, persistent smokers showed higher reactivity to neutral stimuli in the control condition relative to spontaneous quitters for tasks of affective sharing (32.6 vs. 3.8, $p=0.014$) and empathic concern (19.2 vs. 1.5, $p=0.037$). Capacity for affective sharing and empathic concern (pain condition minus control condition) in persistent smokers versus spontaneous quitters were 49.7 versus 68.2 (Cohen's $d=0.64$) and 49.2 versus 64.5 (Cohen's $d=0.58$), respectively. Analysis of cognitive empathy task data and covariates is underway. **Conclusion:** Maternal smoking during pregnancy has been linked to adverse psychiatric outcomes in offspring, including attention-deficit disorder, conduct disorder and substance use disorders. Preliminary patterns from this interim analysis suggest important differences in social information

processing between pregnant women who successfully quit smoking during pregnancy and those who do not. Characterizing these differences may help to elucidate the complex pathways linking prenatal tobacco exposure to neurodevelopmental sequelae in children, as well as aid in design of novel prenatal smoking cessation interventions. This study was supported by grant K23DA037913 by Dr. Massey from the National Institute on Drug Abuse.

No. 41

Evidence-Based Guidelines: Bright Light Therapy for Major Depressive Disorder in Pregnant Women

Poster Presenter: Joanna K. Mansfield, M.D., M.Sc.

Co-Authors: Sophie Grigoriadis, M.D., Ph.D., Anthony Levitt, M.D., M.B.B.S.

SUMMARY:

Objective: Appraise the current literature regarding the evidence for the use of bright light therapy to treat major depressive disorder in pregnant women.

Methods: Outcomes assessed include depression severity (HDRS, SIGH-SAD) as well as treatment side effects. MEDLINE, EMBASE, Cochrane, and PsycINFO databases were searched to identify controlled clinical trials to include in formulating the recommendations. The author reviewed the abstracts to identify articles to be critically appraised. Methods of the Canadian Task Force on Preventative Health Care were followed to identify, grade and synthesize the study information to create a recommendation based on the evidence. **Results:** There is fair evidence to recommend the use of bright light therapy to treat major depressive disorder in pregnant women (Level I evidence, Grade B recommendation). However, clinical considerations should include factors such as the severity of the depression, the patient's tolerability of risk regarding medication use in pregnancy and the availability of psychotherapy resources when deciding to use bright light therapy to treat major depressive disorder during pregnancy.

No. 42

To Restrain or Not Restrain: Retrospective Analysis of the Management of Agitated Pregnant Patients in the ED

Poster Presenter: Lisette Rodriguez-Cabezas, M.D.

Co-Authors: Tricia Pendergrast, Crystal Clark, Amy

Yang, Katherine L. Wisner, M.D., M.S.

SUMMARY:

The behavioral and psychotropic management of pregnant women with mental illness or acute agitation who receive psychiatric evaluation in the emergency department has not been systematically studied. Current data have been based on case reports and expert opinion. Due to the limited amount of data in this area, clinicians continue to lack evidence-based information to optimally treat this patient population, and this hinders care for pregnant women with acute psychiatric issues. Given the increased interest in perinatal psychiatry in the public and the media recently, more data are needed to guide clinical decision making. This retrospective analysis will provide information on the percentages of women who receive emergency psychotropics, including dosage and class of psychotropic; restraints; or both in an urban hospital emergency room visit. Other variables that will be examined include duration of ED visit, patient diagnoses, demographic information, chief complaint, and disposition. This investigation will provide information where little exists on acute care of perinatal women with mental illness and outcomes of psychotropic and behavioral interventions. It will also provide information on which populations are most likely to experience agitation and receive one of these treatments. These data are novel and will provide the basis for future research in this area.

No. 43

Testosterone in Human Studies: Modest Associations Between Plasma and Salivary Measurements

Poster Presenter: Anouk E. de Wit

SUMMARY:

Background: Testosterone is involved in many processes like aggression and mood disorders. This is further supported by the gender differences found in the prevalence of the latter. As testosterone may easily diffuse from blood into saliva, salivary testosterone is thought to reflect plasma-free testosterone level. If so, it would provide a welcome noninvasive and less stressful alternative to blood sampling. Past research did not reveal consensus

regarding the strength of the association, but sample sizes were small. We therefore investigated whether salivary testosterone is a valid marker for plasma testosterone. **Methods:** In total, 2,048 participants (ages 18–65 years; 696 males and 1,352 females) from the Netherlands Study of Depression and Anxiety (NESDA) were included, and saliva (using cotton Salivettes) and plasma were collected for testosterone measurements. Levels were determined by enzyme-linked immunosorbent assay and radioimmunoassay, respectively. Free testosterone was calculated by the Vermeulen algorithm. Associations and possible sociodemographic, sampling and lifestyle factors that could affect the association were determined using linear regression analyses. **Results:** Plasma total and free testosterone showed a significant association with salivary testosterone in men (adjusted $\beta=0.09$, $p=0.01$; and $\beta=0.15$, $p<0.001$, respectively) and in women (adjusted $\beta=0.08$, $p=0.004$; and crude $\beta=0.09$, $p=0.002$, respectively). Only age confounded the association between serum and salivary testosterone, however, not between plasma-free testosterone and salivary testosterone in women. **Conclusion:** Although statistically significant associations were found between plasma and salivary testosterone in this study, the associations were much more modest compared to previous studies. These results indicate that the association is not a simple one and likely influenced by many factors of both technical (e.g., the use of Salivettes instead of passive drools of saliva and other issues of sample collection protocols) and biological origin. Until we know the impact of these factors, the determination of testosterone in blood continues to be the method of choice, especially in clinical settings.

No. 44

The Influence of Personality Factors on Social Decision Making

Poster Presenter: *Seunghyun Park*

SUMMARY:

Objective: This study investigated the role of personality plays in the ultimatum game and the trolley game. **Methods:** Eighty subjects were recruited. The participants conducted the Big Five Inventory-K-10 (BFI-K-10), the ultimatum game and

the trolley game. The ultimatum game consisted of two sets of questions: 48 questions with the role of a responder, six with that of a proposer. The trolley game consisted of eight scenarios, and the subjects were asked to answer whether the scenario was morally acceptable or not. **Results:** Participants with high openness scores tended to accept unfair offers in the ultimatum game and choose decisions based on deontological ethics in the trolley game more than participants with other traits. Participants with high agreeableness scores showed higher rejection rates of seven to three offers in the ultimatum game. Participants with high neuroticism scores offered more money in the ultimatum game. Other personality traits, including extraversion and conscientiousness, showed no significant results. **Conclusion:** Among the big five personality traits, openness was related to both the ultimatum game and the trolley game. Agreeableness and neuroticism were related to the ultimatum game.

No. 45

Delusional Infestation in a Patient With Poor Insight Obsession Symptoms

Poster Presenter: *Natalia M. H. O. Santos*

Lead Author: *Natalia M. H. O. Santos*

Co-Authors: *Maira Aguiar Werneck, Victor Capelo, Leonardo P. de Jesus, Tatiana Brancalião Silveira, Priscila Zempulski*

SUMMARY:

Case: S. R., female, 49 years old, reached dermatology ambulatorial service complaining of “worm eruption” on her skin six months from the current date. Epidermal excoriation was associated to the emerge of these worms. She stored, in a box, a large number of the supposed worms, asking for a professional examination of debris. Her dermatologist realized that the excoriation was self-perpetrated and sent her to the psychiatry service. The skin was severely damaged, so the assistants determined psychiatric hospitalization. The patient also associated the eruption of worms with a supposed “enchanted plate of food” a neighbor gave her, for whom she already had negative thoughts. Besides that, she performed a long-time daily ritual, which involves cleaning, organization and religious activities. In this episode, she was treated by a multidisciplinary team and received antipsychotic,

antidepressive and antihistaminic medication, improving psychotic and obsessive symptoms and yet achieving great cicatrization from skin lesion. We report a patient with delusional infestation (Ekblom's syndrome), a condition whereby that the sufferer assumes self-mutilation behavior (scratching, harming, cutting) in order to eliminate parasites. This syndrome is associated with several psychiatric comorbidities; in this reported case, previous history of obsessive symptoms that turned into a delusional disorder, somatic type, was identified. **Conclusion:** observing the complexity of psychopathology and yet the low prevalence of this condition, the study aim is to review literature of this disorder and analyze the psychopathology involved.

No. 46

Deep Vein Thrombosis-Induced Delirium: A Case Report and Literature Review

Poster Presenter: Aimy Rehim

Co-Authors: Adeeb Yacoub, Jeisson Fontecha Hernandez, Ari Kappel

SUMMARY:

Background: Delirium is a neuropsychiatric syndrome characterized by rapid onset of global impairment in cognition, attention and consciousness, with a fluctuating course. There are many hypotheses for the development of delirium, and the pathophysiology remains poorly understood. The neuroinflammatory hypothesis of delirium suggests that acute peripheral inflammation induces activation of proinflammatory cytokines and inflammatory mediators in the central nervous system, resulting in neuronal and synaptic dysfunction that manifests as neurobehavioral and cognitive changes. In this poster, we present a case that has not been previously described in English literature, in which a middle-aged female with alcohol use disorder developed delirium in the context of bilateral lower extremity deep vein thrombosis (DVT) while hospitalized. **Methods:** We present a comprehensive PubMed search and case report for delirium secondary to deep vein thrombosis. **Case:** A 57-year-old Caucasian female with a history of alcohol use and medical history of liver cirrhosis was admitted to the medical intensive care unit for respiratory failure and septic shock secondary to aspiration pneumonia after she was

found intoxicated and unconscious. Six weeks after admission, the patient was medically cleared for discharge; however, she presented with a confused state and psychiatry was consulted. The patient was found delirious, and the Delirium Rating Scale (DRS-R98) was completed with a score of 26. Vital signs were stable, and basic labs, ammonia level and radiological studies, including brain MRI without contrast, were unremarkable. C-reactive protein (CRP) was found to be elevated. Based on elevation of CRP, the patient had bilateral lower extremity doppler ordered and was discovered to have an acute bilateral DVT with a D-dimer elevation. The patient was started on enoxaparin after bilateral lower extremity DVT and on low-dose risperidone for acute management of behavioral manifestations of delirium. Her delirium resolved within two to three days, and risperidone was tapered to discontinuation. DRS-R98, by this time, had significantly improved. **Discussion:** In a systematic review of the literature, there were no previously reported cases of DVT-induced delirium. In this poster, we present a pathophysiological mechanism related to the systemic inflammatory response for DVT-induced delirium in this case of a patient with a history of alcohol use complicated with liver cirrhosis. Liver disease was stable days before and during the episode of delirium. We hypothesize that cases with hepatocellular damage caused by liver cirrhosis may predispose to peripheral DVTs with a cascade effect of a systemic inflammatory response that can precipitate delirium. This gives strong consideration that ordering inflammatory markers such as CRP or IL-6 could be considered when ascertaining the origin of the delirium, more readily leading to the diagnosis and treatment of acute DVTs.

No. 47

Delirium Is Associated With Increased Mortality in General Hospital Inpatients

Poster Presenter: Aubrey Chan

Co-Authors: Michelle Weckmann, John Cromwell, Gen Shinozaki, M.D.

SUMMARY:

Background: Delirium is a dangerous condition that affects people with underlying medical illness and is associated with increased length of stay, increased

cost of care, increased likelihood of hospital readmission, and increased likelihood of need for care in a nursing facility rather than returning to independent community living. Despite these associations and the existence of multiple validated screening tools for identifying delirium, it remains poorly recognized and diagnosed, and delirium screening tools are frequently underutilized.

Methods: We are performing a secondary data analysis on general medical inpatients who were evaluated using the Delirium Rating Scale 98 (DRS-98) as part of other, ongoing research studies. DRS-98 scores were used to determine whether a given subject was delirious at the time of evaluation. Primary outcome measured was all-cause mortality. Secondary outcome is survival time, that is, time between initial DRS-98 evaluation and death.

Results: Our preliminary data show that, in our population, delirium is associated with increased mortality, even when evaluated at short follow-up times of up to six months. Among subjects who were not delirious, mortality was six percent. Among subjects who were delirious, mortality was 19% ($p=0.04$). Overall, prevalence of delirium was 32%.

Conclusion: Our findings show that delirium is associated with greatly increased mortality within a relatively short time. More efforts are necessary to improve the identification of delirium and to enhance the use of screening tools to identify this dangerous condition.

No. 48

Psychosocial Predictors of Quality of Life and Weight Loss Three Years After Bariatric Surgery: Results From the Toronto Bari-PSYCH Study

*Poster Presenter: Janooshsheya Balasundaram, M.D.
Co-Authors: Raed Hawa, M.D., Susan Wnuk, Ph.D.,
Sanjeev Sockalingam, M.D.*

SUMMARY:

Background: Bariatric surgery is now recognized as a durable treatment for severe obesity, specifically in patients with body mass index (BMI) of $40\text{kg}/\text{m}^2$ or $35\text{kg}/\text{m}^2$ with at least one obesity-related comorbidity. Studies exploring trends in psychopathology after bariatric surgery have been limited by their short-term follow-up and variable use of standardized psychosocial measures. Therefore, prospective study designs extending

beyond the first year after surgery are needed to address these gaps in the literature. Therefore, we examined the BMI and the effect of pre-operative psychiatric factors such as depressive symptoms, anxiety symptoms and binge eating symptoms on quality of life compared to its results one, two and three years after surgery. **Methods:** Patients were recruited from the Toronto Bariatric Surgery Centre of Excellence (TBSCCE) between 2010 and 2016 as part of the Toronto Bariatric Psychosocial (Toronto Bari-PSYCH) cohort study. Patients who underwent bariatric surgery were measured at follow-up on BMI, Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder seven-item scale (GAD-7) and Binge Eating Scale (BES) pre-operatively and also in one, two and three years after surgery. We compared mean differences (MD) between each yearly time point and presurgery values. Statistical significance was denoted by a p-value less than 0.05.

Results: A total of 694 patients who underwent bariatric surgery completed baseline and year 1 questionnaires. Patients who completed at least one psychopathology questionnaire at two years and three years were 442 and 250 patients, respectively. The mean presurgery BMI was $48.9\text{kg}/\text{m}^2$. At one year after surgery, patient experienced significant decrease in BMI ($\text{MD}=-16.4\text{kg}/\text{m}^2$) and significant improvements in BES ($\text{MD}=10.18$, $p<0.0001$), PHQ-9 ($\text{MD}=6.93$, $p<0.0001$) and GAD-7 ($\text{MD}=3.55$, $p<0.0001$) scores. At two year after surgery, there was a significant decrease in BMI ($\text{MD}=-16.4\text{kg}/\text{m}^2$) and significant improvements in BES ($\text{MD}=9.71$, $p<0.0001$), PHQ-9 ($\text{MD}=5.95$, $p<0.0001$) and GAD-7 ($\text{MD}=2.91$, $p<0.0001$). At three years after surgery, there was a significant decrease in BMI ($\text{MD}=-16.7\text{kg}/\text{m}^2$) and significant improvements on BES ($\text{MD}=8.62$, $p<0.0001$), PHQ-9 ($\text{MD}=5.79$, $p<0.0001$) and GAD-7 ($\text{MD}=2.83$, $p<0.0001$). However, no significant difference was noted between years 1, 2 and 3 except for a significant increase in PHQ-9 MD ($p<0.0004$) and GAD-7 MD ($p<0.0123$) scores between years 1 and 2. **Conclusion:** Our data show significant improvements in depressive, anxiety and binge eating symptoms for up to three years after surgery. However, there was a significant increase in psychosocial distress measures after the first year despite sustained weight reduction. Further study of potential causes and long-term trends is needed.

No. 49**Navigating Dilemmas Beyond Capacity Assessment in Patients Lacking Decisional Capacity and Surrogate Decision Maker**

Poster Presenter: David H. Jiang, M.D.

Co-Authors: Carmen Casanovas, Daniel Safin

SUMMARY:

Background: Medical decision-making capacity (DMC) was described originally by Appelbaum to consist of four domains: communication, understanding, appreciation, and reasoning. Psychiatrists are often called regarding the assessment of DMC, particularly in cases where it is uncertain or where a psychiatric condition is present. Among consultations for capacity assessment, there are certain cases that are particularly challenging: cases involving patients with serious but non-emergent medical illness, who lack capacity due to psychiatric illness and who also lack a surrogate decision maker. In these cases, capacity assessment is only the beginning of a cascade of management dilemmas. Our aim is to use an analysis of ten such cases to provide the psychiatrist with guidance in their liaison role beyond capacity assessment. **Methods:** We searched previous consultations seen at our institution, as well as articles in peer-reviewed literature for cases that fit the following criteria: presence of non-emergent medical illness, psychiatric symptoms impairing DMC and lack of a surrogate decision maker. We reviewed and analyzed these cases for salient features. We then developed an inventory of management considerations to aid psychiatrists in these assessments. **Results:** Our search of PubMed generated 2,282 articles, and the abstracts of these were reviewed. Five articles containing eight cases fit our above-mentioned criteria. We selected ten cases in total—two from our institution and eight from PubMed. Review of the ten cases revealed significant heterogeneity: Presenting medical conditions included malignancy, infectious illness and hematological conditions, among others; presenting psychiatric conditions included affective and psychotic disorders. By analyzing these cases, important management considerations were revealed: the ethics and laws of treating patients lacking capacity, risk/benefit/prognosis, logistics of

treatment, ramifications of the patient's active resistance versus non-participation, reversibility of psychiatric symptoms, negative effects of coercive management on the therapeutic alliance, and many others. **Discussion:** The literature contains scant guidance for the psychiatrist in managing cases such as these. This lack of direction was also described by several articles in our literature review. These cases often involve very complex decision making, as each facet has the potential to dramatically change the appropriate course of management. We have developed a categorized table of considerations that will serve the psychiatrist in their consultant role beyond the capacity assessment. **Conclusion:** When patients present with non-emergent but serious medical illness, a lack of capacity due to psychiatric illness and a lack of a surrogate decision maker, there arise many management dilemmas for which we propose a guiding tool based on the current literature.

No. 50**Mental Health and IBS: Reducing Your Distress**

Poster Presenter: Jonathan O'Brien, M.D.

Co-Authors: Yvonne Tse, Anjali Sambhi, Louis Liu, Sanjeev Sockalingam, M.D., Doreen Klar

SUMMARY:

Background: Irritable bowel syndrome (IBS) is characterized by altered bowel habits and abdominal discomfort in the absence of organic etiological findings. IBS is associated with significant psychosocial and diet challenges. Integrated care programs offer an approach to address these physical and mental health issues. Evidence-based diet interventions such as a fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAP) diet and psychological treatments (e.g., CBT and mindfulness) offer potential benefit, but have not been studied in an integrated group base setting for IBS. **Objective:** We studied the feasibility of an integrated psychosocial and FODMAP education group intervention. **Methods:** Six patients diagnosed with IBS according to ROME IV criteria were recruited to our pilot feasibility study. Patients received three group sessions over a period of three months with inter-session homework. All sessions were co-facilitated by registered dietitians, who provided education

regarding the FODMAP diet, and a psychiatrist and gastroenterologist. In session 1, psychoeducation was provided on the association of IBS and mental illness. In session 2, mindfulness relaxation exercises were led by a psychiatrist, and basic concepts of CBT were discussed. Session 3 was a question and answer session. In all sessions, patients completed the GAD-7 (anxiety), the PHQ-9 (depression), the PHQ-15 (somatic symptoms), and a group evaluation questionnaire. Symptom scales were compared before and after intervention using Wilcoxon signed rank test as a result of the sample not being normally distributed. **Results:** six patients were recruited to our study, and five completed three sessions. All patients were female, with a mean age of 55. Patients scored highest on the PHQ-15 at session 1, with medium-range ratings on somatic symptoms, which showed a trend decrease to a mean low-range somatic symptom threshold by session 2. GAD-7 and PHQ-9 symptom severity was rated as mild throughout the study and did not show a significant change. Qualitative analysis revealed that patients found FODMAP education and guided relaxation exercises to be most helpful in symptom management. Only one patient did not report qualitative reduction in IBS symptoms from the FODMAP diet. **Discussion:** Our study shows preliminary evidence of the feasibility of an integrated group intervention using FODMAP diet education and brief psychosocial treatment, which resulted in patient-reported improvement in symptom management and a trend for reduced somatic symptoms. The results of this feasibility study warrant further investigation with a larger sample size and provide initial data on the role of an integrated psychosocial group intervention for IBS.

No. 51

Acute Detoxification of Loperamide Dependence: A Case Study

Poster Presenter: Kelly Jaziri, M.D.

Co-Author: Raphael Leo

SUMMARY:

Background: Loperamide, an over-the-counter antidiarrheal agent, is formulated to act on opioid receptors in the intestine, thereby slowing intestinal motility. Historically, loperamide has been considered to have a low abuse potential, as it has

been previously thought to only act on opioid receptors in the gut. However, when taken at high doses, loperamide crosses the blood-brain-barrier, achieving CNS effects and euphoria similar to that associated with centrally acting opioids. **Case:** We present the case of a 38-year-old Caucasian female with a history of opioid use disorder who required acute detoxification using methadone for loperamide dependence. The patient initially presented with complaints of nausea, vomiting, restlessness, diaphoresis, tremulousness, generalized body aches, restless legs, and anxiety. She admitted to a 10-month history of loperamide abuse. She denied use of opioids during this period of time; in fact, she described initially seeking out loperamide for the purposes of mitigating withdrawal symptoms following discontinuation of opioid use. She then discovered that, at a high enough dose, she was able to achieve a euphoric effect similar that of other opioids of abuse. The patient was admitted for acute detoxification. She was initially administered 20mg of methadone; this was successful in mitigating withdrawal symptoms. The methadone was reduced over four successive days by 5mg daily, and the patient tolerated it well, successfully completing acute detoxification. **Discussion:** This case describes the emergence of loperamide abuse and dependence, a trend that has previously been underrecognized, as well as the need for acute detoxification in chronic users. It is important for clinicians to recognize the increasing abuse potential of loperamide. A basic Internet search yields various websites, available to the lay public, describing specific ways of using the medication for recreational purposes. Loperamide is easily accessible over the counter. When taken in higher than recommended doses, the medication can cause serious adverse cardiac events, including QT interval prolongation, ventricular arrhythmias and even cardiac arrest. Additionally, loperamide is not detectable on routine urine toxicology screening; serum detection of loperamide requires gas chromatography mass spectrometry. Awareness of the potential for abuse of this medication is important for the purposes of potentially preventing future negative outcomes related to its abuse.

No. 52

Needs Assessment in Delirium Practice: Multisite,

Multidisciplinary, Semi-Structured Interview Study

Poster Presenter: Kumi Yuki

Co-Author: Gen Shinozaki, M.D.

SUMMARY:

Background: Delirium is a common neuropsychiatric condition, characterized by the presence of disturbed attention, awareness and cognition, which develop in a short-term period due to underlying medical conditions. Delirium is often unrecognized, leading to complications such as a fall and infection, higher rates of morbidity and mortality, and longer lengths of hospital stay. This study examines health care professionals' perspectives in needs and issues related to delirium care in the hospital setting.

Methods: From October 2016 to November 2016, semi-structured interviews were conducted with 100 multidisciplinary health care professionals, including physicians, nurses and administrators in multiple hospitals. The interview data included health care professionals' experiences in delirium care, perceived challenges with delirium practice, and ideas of how to improve the delirium care and outcomes. **Results:** This analysis included interviews with 71 physicians (psychiatrists, internal medicine physicians, hospitalists, neurologists, and emergency medicine physicians), 16 nurses and 13 administrators (department manager, health information director). Perceived challenges were detection/diagnosis of delirium (56%), prevention of complications (47%), and use of delirium screening scales (46%). Furthermore, time constraints associated with delirium care (e.g., care refusal, requiring a sitter, frequent reorientation, fall prevention), lack of communication among the disciplines (e.g., nurses' delirium screening results not reported to physicians, disagreement of delirium diagnosis between psychiatry and medicine departments), violence to care staff (e.g., staff was stabbed by a delirious patient), and confusion in terminology for delirium (e.g., interchangeable terms used, such as altered mental status, delirium and encephalopathy) were noted as serious issues related to delirium practice. To improve the delirium practice, early detection of delirium with delirium screening scales, education to increase awareness of delirium, and more efforts in communication among disciplines were suggested. **Conclusion:** Delirium is challenging due to its difficulty with diagnosis,

serious complications, increased need for care, and the necessity for a multidisciplinary approach. This study was supported by the National Science Foundation.

No. 53

Results of an Interdepartmental Residency Seminar on Decision-Making Capacity

Poster Presenter: Reena Baharani

Co-Author: Nicholas J. Genova, M.D.

SUMMARY:

Informed consent is a fundamental ethical principle in medicine and is routinely discussed in early medical education. Psychiatric residency training routinely involves ethical and practical discussions of informed consent and decision-making capacity on patients with neuropsychiatric limitations. However, such intricacies are emphasized much less in residency training programs for other inpatient disciplines. A poor understanding of informed consent and decision-making capacity could result in unethical treatment or poor outcomes for patients and families. Literature on decision-making capacity assessments suggests that physician comfort is lacking, even among psychiatry residents with their increased exposure and training. This may be, at least in part, due to the lack of evidence-based medicine that supports their daily clinical work. As psychiatry trainees at Stony Brook University Hospital (SBUH), we provided three one-hour interdepartmental residency seminars on this topic to internal medicine (IM) residents. We sought to improve patient care at SBUH by increasing understanding of informed consent and decision-making capacity and to improve interdepartmental communication on this common area of clinical collaboration. IM residents in all training years completed pre-seminar surveys assessing their comfort with decision-making capacity. The seminars' didactic section included topics of informed consent, decision-making capacity, a review of research on capacity assessments, and logistical information to assist with consulting psychiatry on relevant inpatient cases. The seminars' discussion section involved case vignettes and an open forum. The IM residents then completed post-seminar surveys reassessing their comfort as well as their opinion on the seminars' helpfulness. The

majority of IM residents initially felt uncomfortable performing a capacity assessment, and the seminars were effective in improving their discomfort. Preliminary data show the proportion of residents who endorsed discomfort with capacity assessments decreased from 60% to 20% following the seminars. Also, 73% of residents indicated that they would appreciate further education on decision-making capacity. There is little published data on the performance of IM physicians in assessing decision-making capacity. There are no known published studies assessing the utility of an interdepartmental seminar in improving patient care and physician communication. Educational seminars on decision-making capacity may be opportune and can favorably impact medical physicians' comfort with capacity assessments.

No. 54
Psychiatric Comorbidities in Heart Failure Patients With LVAD Implantation

Poster Presenter: Sarah Elmi, M.D.

Co-Authors: Melanie Schwarz, M.D., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: Psychiatric comorbidities such as depression and cognitive impairment have been associated with worse outcomes in patients with heart failure. Left ventricular assist devices (LVAD) are used for patients with nonreversible heart failure. LVAD patients need significant lifestyle modifications, adjustment to living and traveling with life-sustaining equipment, and frequent visits to health care providers that can result in stress and some degree of social isolation, predisposing them to depressive states. Unlike heart transplantation, for which psychiatric comorbidities and psychological factors have been studied extensively, there is paucity of data on association of these and LVAD procedure outcomes. While the International Society of Heart and Lung Transplantation recommends that all potential LVAD candidates undergo a detailed psychosocial evaluation, there are no clear guidelines on what constitutes an acceptable psychiatric risk. **Objective:** Develop a comprehensive profile of LVAD procedure patients with a focus on psychiatric comorbidities and psychological characteristics and explore the

relationships between these patient factors, complications, readmission rates, and survival.

Methods: In this retrospective study, we reviewed a cohort of 54 adults admitted for advanced heart failure between January 2014 and November 2016 at our Heart and Vascular Center for LVAD and underwent psychiatric evaluation before LVAD placement surgery. Data collected include demographics, comorbidities, education, living arrangements, psychiatric history, psychiatric medications, length of hospital stay, complications, and readmissions. **Results:** Of the 54 adult patients admitted for LVAD, 27 consecutive cases had presurgical psychiatric evaluation by a single psychiatrist and attended routine psychiatric follow-up consultations with the same psychiatrist. In this cohort, all but one were males, with ages ranging from 36 to 79 years (average age=60.7 years). At baseline, two patients had depression, six had symptoms of anxiety and only two of them were on SSRIs. Most patients coped well with LVAD; however, five patients showed varied psychiatric symptoms, including anxiety, agitation, depression, and insomnia, some of which were treated with medications. The CL team also started four patients on medications to address their mood and anxiety problems (low-dose Remeron or BDZ). Patients who coped better had significantly lower length of stay in the hospital: 33.4 days versus 65 days ($p=0.007$). Further data collection is ongoing. **Conclusion:** By partially/completely replacing the function of a failing heart, LVAD potentially reverses the postulated mechanisms of cerebral hypoperfusion and sympathetic overstimulation that have a role in some psychiatric conditions and therefore may have an overall positive effect. Although it does not prove any causality, shorter length of stay for the index procedure was associated with better outcomes in our LVAD patients.

No. 55
Psychological Factors Influence the Overlap Syndrome in Functional Gastrointestinal Disorders (FGIDs) Among Middle-Aged Women in South Korea

Poster Presenter: Seung-Ho Jang

Co-Authors: Suck Chei Choi, M.D., Ph.D., Sung Hee Kim, P.S.W., Hye Jin Lee, Ph.D., Sang Yeol Lee, M.D., Ph.D.

SUMMARY:

Background: This study investigated psychological factors related to the overlap syndrome, i.e., multiple gastrointestinal conditions that are part of functional gastrointestinal disorders (FGID) in the same individual, potentially related to quality of life (QOL) among middle-aged women in South Korea.

Methods: Participants were 627 women aged 45–60. The study was undertaken between July 2014 and March 2015. Depressive and anxiety symptoms were ascertained using the Center for Epidemiologic Studies Depression Scale (CES-D) and Beck Anxiety Inventory (BAI), respectively. Negative cognition and the cognitive triad were identified using the Automatic Thoughts Questionnaire–Negative (ATQ-N) and the Cognitive Triad Inventory (CTI), respectively. Resilience and quality of life were assessed using the Connor-Davidson Resilience Scale (CD-RISC) and World Health Organization Quality of Life scale abbreviated version (WHOQOL-BREF).

Results: Women with the overlap syndrome had the highest CES-D (mean=16.66±11.79, $p<0.001$), BAI (mean=17.46±12.67, $p<0.001$), and ATQ-N scores (mean=53.61±20.88, $p<0.001$), followed by women with gastrointestinal disorders but without the overlap syndrome and healthy controls. Healthy controls had the highest WHOQOL-BREF score (mean=77.69±12.53, $p<0.001$). After stepwise selection, the final model explained 61.8% of the variance in the outcome. **Conclusion:** Depressive symptoms, anxiety, negative cognition, cognitive triad, and resilience were significantly related to QOL in women with the overlap syndrome.

No. 56**Efficacy of Manual-Based CBT for the Drug-Naïve Obsessive-Compulsive Disorder Patients in China**

Poster Presenter: Jia Luo

SUMMARY:

Objective: Evaluate the efficacy of manual-based cognitive behavior therapy (CBT) for obsessive-compulsive disorder (OCD) and also explore acceptability and feasibility of manual-based CBT in China for drug-naïve OCD. **Methods:** In an open trial, 52 of 70 patients (74.28%) met the study criteria, and 46 of 52 (88.46%) subjects agreed to receive manual-based CBT without medication. All the

patients were free of psychoactive medication for at least four weeks before the study. The CBT treatments were based on a manual, including 14 individualized outpatient sessions for 12 weeks administered by five trained CBT therapists. All subjects were evaluated with the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), Hamilton Depression Scale (HAM-D) and Hamilton Anxiety Scale (HAM-A) by three psychiatrists, independently, on the treatment at baseline and endpoint of the therapy. Perceived helpfulness and satisfaction with CBT were assessed on a 10-point scale anchored at one end by 0 (very unhappy or unhelpful) and at the other end by 10 (very happy or helpful) by themselves. The patients did not receive any other treatment except for CBT during the study. Response was defined as at least 35% of the Y-BOCS reductive ratio after 14 sessions CBT. A total score of Y-BOCS less than 6 at the end of therapy was remission, and if the patients cannot complete 14 sessions, they would be dropouts. **Results:** Thirty-nine subjects completed 14 sessions CBT. The dropout rate was 15.22%. At the end of the therapy, the scores of Y-BOCS decreased from 23.46±6.47 to 10.97±7.03. HAM-D and HAM-A also reduced from 6.69±4.21 to 2.66±3.05 and 8.72±5.80 to 3.21±3.66, respectively ($p<0.01$). Based on the intention to treat principle, the response and remission rates were 69.57% (32 of 46) and 21.74% (10 of 46), respectively. Satisfaction and helpfulness ratings were high (respectively, 6.89±0.42 and 6.62±0.68). **Conclusion:** CBT manual-based treatment can significantly improve obsessive-compulsive, anxiety and depressive symptoms for drug-free patients with OCD. Meanwhile, CBT is easy to be accepted by the patient, and the compliance is good. A manual-based CBT for drug-naïve OCD patients in China appears to be an effective, feasible and promising intervention. **Keywords:** Obsessive-Compulsive Disorder, Cognitive Behavior Therapy, Efficacy, Feasibility

No. 57**Regression and Hypomania Secondary to Steroids in a Patient Newly Diagnosed With Lupus Cerebritis**

Poster Presenter: Navjot K. Brainch, M.B.B.S.

Co-Authors: Patrick Schule, M.D., Richa Kalra, M.D., Melanie Schwarz, M.D.

SUMMARY:

Background: Post-steroid neuropsychiatric manifestations in SLE (PSNP-SLE) and neuropsychiatric manifestations of SLE (NP-SLE) are rare clinical entities that can coexist and have similar presentations, but need different treatment. **Case:** This report describes a 38-year-old female with history of OCD and a month-long history of progressive altered mental status (AMS). Her symptoms, interspersed with periods of lucidity, had worsened over three days and comprised of disorganized thought process, insisting on being a three-and-a-half-year-old, echolalia, and clang associations. These symptoms occurred in context of her being on 60mg per day of prednisone for the last month after being diagnosed with retinal vasculitis and autoimmune hepatitis. Initially, her symptoms were attributed to steroid-induced psychosis, so prednisone was tapered. Seroquel 25mg was started for sleep. However, before the effects of tapering became apparent, she was found to have positive ANA, Anti-Smith, Anti-ds DNA and Anti-Jo antibodies. Her autoimmune history (AI) and positive AI workup with negative MRI, CSF, anti-NMDA, VDRL, and toxicology screens made lupus cerebritis the top differential diagnosis, and consequently, she was started on Solumedrol 1g per day for three days. She also later received cyclophosphamide once and IVIG for five days. Solumedrol was cross-tapered to prednisone 60mg, which was tapered to 20mg over four days. The patient continued to demonstrate regressive behavior, but as steroids were tapered, the length of lucid intervals increased to the point that she was discharged with follow-up. The patient was readmitted three days later for AMS with similar presentation in context of medication noncompliance. This time she was also diagnosed with hypomania evidenced by upbeat mood, flight of ideas, loose associations, and increased distractibility for two weeks. She improved after being started on lithium 300mg twice daily and Seroquel increased to 50mg twice daily. The patient received rituximab for lupus cerebritis. At the time of discharge, the patient did not exhibit any overt symptoms of psychosis or mania. **Discussion:** The temporal association between starting prednisone and her symptoms makes it difficult to rule out PSNP-SLE. Improvement in her symptoms with initiation of steroid taper also lends credence to this diagnosis. Her autoimmune history and response to immunosuppression

suggested that lupus cerebritis was also playing a role. Her symptoms responded well to treatment with lithium, Seroquel and rituximab. **Conclusion:** This case demonstrates one of the reasonable ways of management in absence of FDA guidelines. Regression has not been documented in patients with PSNP-SLE or NP-SLE; hence, treatment venues remain unexplored. Treatment in this case was based on other associated mood/psychotic symptoms. Given that both diagnoses (PSNP-SLE and NP-SLE) manifest similarly but require extremely different treatment, concerted efforts should be made toward finding ways to differentiate the two to provide proper treatment.

No. 58

Psychiatric Emergency Services: Can Duty Hour Changes Help Residents and Patients?

Poster Presenter: Navjot K. Brainch, M.B.B.S.

Co-Authors: Faith Laurel, M.D., Patrick Schule, M.D., Theresa Jacob, Ph.D., M.P.H., Maria M. Bodic, M.D.

SUMMARY:

Background: Limitations on resident duty hours have been widely introduced with the scope of decreasing resident fatigue and improving patient outcomes. Although there is evidence of improvement in resident well-being and education, several downsides have been identified, including multiple hand-offs between clinicians leading to potential errors in patient care. While the available literature emphasizes a need for more specialty/setting-specific schedules and consideration of residents' opinions when implementing duty-hour reforms, there is lack of studies in psychiatric emergency service (PES) settings examining the impact of duty-hour changes on residents or patients. In our PES, prior to July 2016, residents worked 12-hour shifts (8:00 a.m. to 8:00 p.m. regular shifts), leading to fatigue and delays in evaluating patients during the latter part of the shift, which happens to be the busiest times of the day (4:00 p.m. to 10:00 p.m.). Consequent to a needs assessment, alternative schedules were assigned between regular and swing shifts (10-hour shifts, moved down to later in the day to address the higher patient volume).

Objective: Assess 1) the impact of swing shifts and decrease in overall duty hours on resident well-being and education; 2) the impact of swing shifts on

patient wait time and length of stay (LOS); and 3) the overall level of resident burnout while rotating in PES. **Methods:** This is an IRB-approved quality improvement project. At the end of their work week, residents completed anonymous surveys focusing on fatigue, sleep and life outside work for both regular and swing shifts. They were also administered the Maslach Burnout Inventory. Data from the electronic medical records were collected for a period of six months before and after the schedule change for total LOS and patient wait time. **Results:** Our data show that 66% preferred the regular shifts, while only 42% liked the swing shifts. All residents reported being tired, with 83% neither getting adequate rest nor having any time for household chores during regular shifts. About 86% reported getting enough sleep during the swing shifts. Preliminary data show that, on average, patient wait time and LOS decreased from 169 to 147 and 690 to 515 minutes, respectively. The post-duty-hour-change period ends in February 2017, after which data collection and final analyses will be completed. **Conclusion:** Despite reports of getting more sleep and having more time for outside activities during the swing shifts, the majority of our residents still preferred the regular 12-hour shifts, with some reporting an absolute preference for the same. Contrary to our expectations, a small percentage strongly disliked the swing shifts, demonstrating that shorter duty hours is not a singular factor for overall resident satisfaction. The change to swing shifts apparently impacts length of stay and patient wait time; however, whether this is clinically significant or not can be determined only after further data analyses.

No. 59

Trauma Diagnosis in Incompetence to Stand Trial: A Useful Distinction

Poster Presenter: Cristina M. Secarea, M.D.

Co-Author: Philip Candilis, M.D.

SUMMARY:

Given the lack of data on PTSD and its effect on competence restoration, we isolated a group of IST patients diagnosed with PTSD from a large sample of inpatient restoration subjects. In analyzing factors influencing restorability and length of time to restoration, we compared the PTSD group to those

without PTSD. Of 312 incompetent patients, 5.1% (N=16) were diagnosed with PTSD. The majority, 68.8% (N=11), were females between the ages of 18 and 40 (81.3%, N=13). Substance use was the most common disorder associated with a diagnosis of PTSD and was found in 68.8% of the sample. The category of legal charge (misdemeanor or felony) was similar in distribution with the non-PTSD group: 75% (N=12) were charged with a misdemeanor, 25% (N=4) with a felony. Fifty percent of both groups were adherent to medication treatment. Only 37.5% (N=10) of patients with PTSD had one or more emergency episodes that required involuntary medications, less than the non-PTSD group with 43.9% emergency episodes. Overall, the average length of time to restorability among IST patients with PTSD was five days less (51.1 days) compared to those without PTSD (56.6 days). Although the sample in our study is small, it matches PTSD prevalence and demographics in the general population. We offer a number of reasons for expanding this research and theorize on potential positive effects on competence restoration duration and costs.

No. 60

Why Incompetent and Unrestorable?

Poster Presenter: Cristina M. Secarea, M.D.

Co-Author: Philip Candilis, M.D.

SUMMARY:

In the forensic literature, the most common factors associated with incompetence to stand trial (IST) are older age, a less serious charge, and a diagnosis of intellectual developmental disorders, cognitive disorders and psychosis. We present data from a sample of 53 inpatients at a state psychiatric facility found incompetent to stand trial and identify the correlates of incompetence, from demographic data and severity of charges to treatment adherence, severity of illness and violent behavior. Of 53 IST patients, the majority were male (72%), were 41 to 60 years old (45%) and had a history of prior hospitalizations (75%). The two most common diagnoses were psychotic disorders (75%) and substance use disorders (57%); the third most common diagnosis was cognitive disorders (30%). Eighty-three percent were adherent to their medication, and only 32% required emergency

medications to treat agitation or violent behavior. The mean hospital length of stay (LOS) for the group was 119 days. This study reproduces previous incompetence data in the forensic literature. Unlike other incompetence studies, however, we also explored treatment adherence by monitoring refused doses of psychotropic medication and categorizing the refusals by medication class and emergency episode. By identifying specific static (demographic) and dynamic (clinical) factors influencing incompetence, we draw a more precise picture of the unrestorable patient and offer support for forensic evaluators identifying evaluatees as unrestorable.

No. 61
Involuntary Mental Health Holds and the Decision to Pursue Commitment: A Descriptive Study

Poster Presenter: Ian Lamoureux
Co-Authors: Teresa A. Rummans, M.D., Kathryn Schak

SUMMARY:

Background: Patients receiving involuntary treatment on temporary mental health holds are commonly encountered in both medical and psychiatric hospitals. Despite this, this population is relatively poorly studied. We examined the relationship between temporary mental health holds and judicial commitment. **Methods:** Patients admitted to an acute adult inpatient psychiatric hospital unit who were placed on a 72-hour hold during their stay over a 12-month period were catalogued. The charts were reviewed retrospectively; demographic data and clinical outcomes were recorded. **Results:** A total of 345 patients were included in the study. Commitment was pursued for 35.6% of these patients. Of the patients for whom commitment was pursued, 66.7% were committed to a state hospital, representing 23.8% of the total patients placed on a temporary mental health hold. A discharge diagnosis of a psychotic disorder (OR=2.29 95% CI [1.37, 3.84], $p=0.002$) and male sex (OR=1.79 95% CI [1.07, 2.98], $p=0.026$) were strongly associated with commitment. **Conclusion:** Commitment is not pursued for the majority of patients who are placed on temporary mental health holds. Of those placed on temporary mental health holds, men with

psychotic disorders are the most likely to be committed.

No. 62
Substituted Consent for Electroconvulsive Therapy: A Consideration of Commonly Encountered Clinical Challenges

Poster Presenter: Ian Lamoureux
Co-Authors: Keith G. Rasmussen, M.D., Folabo Y. Dare, D.O.

SUMMARY:

Research on electroconvulsive therapy (ECT) has demonstrated ample data regarding its effectiveness and safety. ECT has become a critical part of the psychiatric treatment armamentarium for depression, mania, some cases of schizophrenia/schizoaffective disorder, catatonia, and some cases of agitation in dementia. However, many patients who would most benefit from ECT present challenges in obtaining informed consent. Like all procedures in medicine, a formal informed consent process must be undertaken prior to the administration of ECT. For those patients who, for various reasons, lack the capacity to provide consent, substituted consent must be obtained. In this poster, we delve into some of the obstacles ECT clinicians encounter when dealing with substituted consent, paying particular attention to the legal and ethical concerns that give rise to these challenges. It is concluded that even though many ECT patients present challenges for the consent process, these can be overcome, and patients can benefit from this modality.

No. 63
WITHDRAWN

No. 64
Hippocampal Subfields Volumes and Cognition in Elderly Patients With Subclinical Depression

Poster Presenter: Jun-ki Lee

SUMMARY:

Because older adults are basically decreased in their social and occupational domains, when diagnosed according to the diagnosis criteria of MDD, the suffering is likely to be underestimated and may not receive appropriate treatment. These depressions

affect the hippocampus, and structural changes in the hippocampus come with changes in cognitive function. The aim of this study is to investigate the association of depression, hippocampus and cognitive function among the elderly in the community who are depressed, but whose functional impairment in social and occupational domains is not clear. We also hypothesize that the hippocampal subfield would be differentially affected by depression because the hippocampus consists of functionally different subfields. Twenty depressed and 20 control subjects were recruited by measuring the Geriatric Depression Scale in the elderly without any cognitive impairment and without the diagnosis and treatment of depression. All participants underwent 3T magnetic resonance imaging. Each hippocampal subfield was estimated using an automated procedure implemented in FreeSurfer. The CERAD-K was used to assess the cognitive domain, and these results were explored with imaging data. Compared with the control group, the volume of the depression group was significantly smaller in the total hippocampus (13.1%), cornu ammonis (CA)_{2_3} (11.4%), subiculum (10.6%) and CA_{4_dendate gyrus} (11.7%). In addition, the depressed group was significantly lower in memory recall (23.3%) and recognition (16.1%) in the cognitive domain. These results support that depression in the elderly differently affects the volume reduction in hippocampal subfields and affects cognitive function, especially memory area.

No. 65

One-Year Changes in Cognitive Functions and Characteristics of Cerebral Amyloid Deposition in Geriatric Depression: A Pilot Study Using Amyloid PET

Poster Presenter: Jae-Hwa Choi

Lead Author: Hye-Geum Kim

Co-Authors: Bon-Hoon Koo, Eun-Jin Cheon, Eun-Jung Kong, Young-Ji Lee

SUMMARY:

Background: Patients with geriatric depression (GD) often have cognitive impairments, and recent studies have reported that there are long-lasting cognitive impairments, despite symptom reduction, and have indicated that GD might be associated with

developing Alzheimer's diseases (AD). Meanwhile, few studies have examined cerebral β -amyloid ($A\beta$) levels to evaluate cognitive functions in GD until now. We examined brain amyloid deposition in patients with GD using ¹⁸F-labeled amyloid PET and evaluated the changes of specific cognitive functions of each patient. Finally, the purpose of this study is exploring plenty of factors that might affect developing AD. **Methods:** Participants included elderly patients over 60 years old with major depressive disorder who had subjective memory complaints or mild cognitive impairment (MCI) and had not been diagnosed with dementia yet. Thirteen participants received psychological assessments, including cognitive functions, and are checked ¹⁸F-labeled amyloid PET. We quantified the standard uptake value ratio (SUVR) as the degree of amyloid accumulation. To evaluate the changes of cognitive functions, all participants repeated psychological assessments after one year. **Results:** Ten subjects were judged as β -amyloid negative ($A\beta^-$) and three subjects as β -amyloid positive ($A\beta^+$). At the point after one year, all subjects improved their depressive symptoms, and nine subjects of 13 improved their general cognitive functions, but cognitive functions of the other four subjects, including one $A\beta^+$ subject, were deteriorated although depression improved. These four deteriorated subjects did not show significant differences from the other nine subjects, including demographic data, psychiatric histories and amyloid depositions. Of three subjects judged as $A\beta^+$ initially, the other two subject rather improved cognitive functions. One subject who converted to dementia was initially diagnosed as major depression severe "with psychotic features" was also "with anxious distress" based on the *DSM-5*. In results of correlation analysis, the degree of deterioration in attention abilities was significantly positively correlated with amyloid deposition in the following brain regions: central region, frontal regions, insula, cingulum, basal ganglia, and whole brain region. **Conclusion:** In spite of the limitations as a pilot study, this study showed that the changes of cognitive functions in patients with GD were not identical, even in $A\beta^+$ subjects, and some GD patients might suffer long-lasting cognitive impairments or deteriorate cognitive functions, despite depressive symptom reduction. Of all cognitive functions, the degree of deterioration in

attention abilities were correlated with whole brain regional amyloid SUVR, as were the other certain brain regions.

No. 66

Reduced Cortical Thickness in Patients With Late-Life Depression Without Cerebral Vascular Disease

Poster Presenter: Kangyoon Lee

Co-Authors: Jehyun Sohn, Young Min Lee

SUMMARY:

Objective: The aim of this study is to compare cortical thickness in late-life major depression patients without cerebral vascular disease (CVD) with that of nondepressed normal comparison subjects using magnetic resonance imaging (MRI).

Methods: Altogether, 47 subjects were finally recruited from the memory impairment clinics of Pusan National University Hospital in Korea. All subjects (late-life major depression patients without CVD: N=21, matched nondepressed normal comparison subjects: N=26) underwent 3T MRI.

Results: Late-life major depression patients without CVD showed reduced cortical thickness in the left precuneus, left inferior temporal gyrus and left cuneus compared with nondepressed normal comparison subjects. **Conclusion:** Our findings suggest that late-life major depression without CVD is associated with reduced cortical thickness.

No. 67

Case Study: A Closer Look at a Senior With Dissociative Identity Disorder

Poster Presenter: Ralph Lissaur

SUMMARY:

Background: Eugene Bleuler said that patients with schizophrenia demonstrated a "splitting of the psyche into several souls...split into as many different persons or personalities as they have complexes"" and that "the blocking of the recall of memories is a common occurrence during the examination of these patients." Among American clinicians, only 60.4% accurately diagnosed dissociative identity disorder (DID) when reviewing a vignette of a patient presenting with symptoms of DID. The clinician's age, professional degree, and years of experience were not associated with accurate diagnosis. Clinicians misdiagnosed DID

patients as those with schizophrenia 10% of the time. This report presents a case of DID and highlights important clinical characteristics that a clinician should recognize when differentiating DID from schizophrenia, two disorders that are often incorrectly diagnosed. **Case:** T. is 65-year-old Caucasian female with an unremarkable medical history and no substance abuse history who presents with a chief complaint of "wanting to be dead." She presents with a caregiver, who also happens to be a long-time friend, during her evaluation. The patient complains that her "brain was stolen" and experiences multiple voices "calling me bad names, wanting me to be dead and saying that they'll kill me." She states that "people can read my mind." The caretaker discusses how the patient can switch between four to five personalities, as frequently as daily to as infrequently as a few times a month. Soon after the caretaker discusses the patient's various personalities, the patient's demeanor shifts from tired to being vigorous and full of life. The patient declares herself as S., a 30-year-old woman who works in a medical office. She states to the caregiver, "if you're gonna describe me, at least get it right." The patient has a history of being beaten by both her mother and father as a child for years. **Discussion:** DID is a clinical diagnosis as outlined in the *DSM-5*. The presence of two or more distinct personality states or an experience of possession is the defining feature of the disorder. The disorder can also be identified by sudden alterations or discontinuities in sense of self and sense of agency and recurrent dissociative amnesias. The identities that arise in DID should present recurrently, are unwanted and involuntary, and cause clinically significant impairment. They should not be part of a broadly accepted cultural or religious practice. Correctly identifying this disorder is essential because first-line treatment is triphasic trauma-focused therapy. The disorder can develop in a child who has the biological capacity to dissociate to an extreme level, has experienced physical and/or sexual abuse, and compartmentalizes.

No. 68

Detecting Pre-Death Grief in Caregivers of Dementia: Measurement Equivalence of the Chinese Version of the Marwit-Meuser Caregiver Grief Inventory

Poster Presenter: Tau Ming Liew
Co-Authors: Nan Luo, Philip Yap

SUMMARY:

Background: Coping with pre-death grief (PDG) is an unmet need in caregivers of persons with dementia (PWD), yet few instruments have been developed or validated to detect PDG, and none are available in the Chinese language, even though Chinese is a commonly-used language worldwide. In this study, we sought to produce a Chinese version of a PDG scale (Marwit-Meuser Caregiver Grief Inventory, MM-CGI) and evaluate whether this Chinese version is equivalent, in its measurement properties, to the original English version. **Methods:** The Chinese version of MM-CGI was produced through recommended qualitative methods (translation, reconciliation, back-translation, and cognitive interviews) and administered to 103 family caregivers of community-dwelling PWD. Comparisons were made with the responses from 291 family caregivers who had completed the English version. The score difference between the two versions was computed, with adjustment of potential confounding variables using multiple linear regression. Equivalence in the scores would be declared if the 95% confidence interval (CI) of adjusted score difference fell within predefined equivalence margin of half a standard deviation (SD) of the overall sample. Comparisons between the language versions were also made in internal consistency reliability (using Cronbach's α), test-retest reliability (using intraclass correlation-coefficient), construct validity (using Pearson's correlation coefficient), and known-group validity (using box plot). Equivalence in reliability and validity would be declared if the 95% CI of the reliability indices were similarly 0.70 or more and if the validity assessment showed similar patterns in correlation and box plot. **Results:** The mean scores of the Chinese and English versions were 144.1 (SD=28.0) and 140.5 (SD=35.6), respectively. The adjusted 95% CI for score difference was -4.5 to 4.9, which fell within the predefined equivalence margin (± 16.9) and indicated equivalence of the total scores. The 95% CI of the reliability indices were 0.70 or more for the two language versions. The Chinese and English versions also showed similar characteristics in construct validity and known-group validity—they

converged with caregiver burden and depression scales, diverged from unrelated scales and showed corresponding increase in median scores at differing severities of caregiver burden. **Conclusion:** This study demonstrates the measurement equivalence of the Chinese MM-CGI, comparing to the original English version. It provides the basis for valid cross-cultural comparison of PDG using MM-CGI, as well as for pooling the scores from the Chinese and English versions in multi-ethnic populations to increase study power and representativeness.

No. 69

Terminal Cancer and End of Life Care in a Vietnam Combat Veteran

Poster Presenter: Amanda L. Holloway, M.D.
*Co-Authors: Shiv Lamba, Colleen O'Rourke, M.D.,
Najah Barton, Ed.D., Maria Llorente, M.D.*

SUMMARY:

Background: This is a case study of an older male Vietnam veteran with chronic combat-related posttraumatic stress disorder (PTSD) who was diagnosed with metastatic cancer with a primary small bowel tumor. He initially presented with a pleural effusion that was worked up extensively. Immunohistological analysis of the pleural fluid was performed, and it was found that his cancer was metastatic adenocarcinoma originating from the small bowel. It was stage IV, and thus, the patient was informed that his treatment would be palliative. This patient experienced worsening of several PTSD symptoms during the course of his end of life care, including sleep issues that had to be managed pharmacologically. In addition, the members of his long-term Vietnam veteran support group were very much involved in his end of life care. The unique experience of a combat veteran facing a life-threatening illness and end of life care is highlighted in this case. In addition, his support group played a very important role in both his PTSD treatment and end of life care. **Discussion:** This is an important case to discuss given that it is extremely rare for a primary small bowel tumor to present initially with a pleural effusion. In addition, this patient's chronic combat-related PTSD affected his reaction to the diagnosis and his end of life care. He continued to meet regularly with his veteran support group, and the group dynamics changed and affected his mental

health during this time. **Conclusion:** Although metastatic cancer from a small bowel primary tumor is rare, it can occur and in this case presented initially as pleural effusion. It is of utmost importance to educate providers regarding this rare presentation, as it could assist in future differential diagnosis for those presenting with pleural effusion. In addition, this case highlights issues of PTSD and end of life care. With our aging veteran population growing, this is an issue that will continue to arise often in clinical practice. This is of particular growing concern in Vietnam combat veterans who were variously exposed to Agent Orange and thus are at increased risk for several forms of cancer. This patient gained benefit from his ongoing PTSD support group, and further exploration of the group dynamic as it relates to end of life in the veteran population is important as the population of combat veterans with PTSD continues to age.

No. 70

The Impact of Collaborative Care on the Number of Disability Days Taken by Depressed Employees Seen in Primary Care Practices

Poster Presenter: Akuh Adaji, Ph.D., M.B.B.S.

Co-Authors: Richard Newcomb, Zhen Wang, Gregory Couser, Hassan Murad, Mark Williams

SUMMARY:

Objective: Determine the impact of “real world” collaborative care on disability days taken by depressed employees seen in primary care practices using objective employer absence data. **Methods:** We combined data from the Depression Improvement Across Minnesota Offering a New Direction (DIAMOND) collaborative care program with objective employer disability absence data for the period between 2008 and 2015. We conducted a retrospective cohort study comparing depressed employees (ages 18–65) seen in primary care practices who were eligible and enrolled for DIAMOND to those eligible but not enrolled (practice as usual [PAU] group). We assessed the impact of collaborative care on disability days at three-, six- and 12-month time periods and depression severity following eligibility for DIAMOND. **Results:** There were 1,038 depressed employees (mean age=46.96, SD=11.57, 87.19% female) in the collaborative care group and 469 (mean age=46.62, SD=11.59, 87.58%

female) in the PAU group. The collaborative care group initial PHQ-9 depression mean score (15.60, SD=4.13) was more severe than the PAU group (14.90, SD=4.02), and this reached statistical significance ($p<0.001$). The primary outcome measure of disability days was more in the collaborative care group compared to the PAU group at three (17.42, SD=29.96 vs. 14.02, SD=27.60; $p<0.01$) and six (31.70, SD=54.30 vs. 26.32, SD=50.49, $p<0.04$) months, but at 12 months (51.84, SD=86.22 vs. 44.42, SD=76.39; $p<0.22$), the difference was no longer statistically significant. The change in the depression severity mean score for the collaborative care group (-10.10, SD=5.97) at six months was more than the PAU group (-6.13, SD=6.66), with $p<0.001$. **Conclusion:** Employees enrolled in the collaborative care program on average had more severe depression at baseline and took more disability days, though the statistical difference disappeared at 12 months. Collaborative care led to faster improvement in depression scores in keeping with past research. Studies evaluating the “real world” collaborative care of longer duration are required to determine if further improvements in disability days are seen with time, as suggested in this study. **Keywords:** Collaborative Care, Disability Days, Depression

No. 71

ACCESS-SMI: Advancing Collaborative Care to Ensure Systematic Screening in Severe Mental Illness

Poster Presenter: Carrie Cunningham

SUMMARY:

Background: Existing collaborative care and other integrated care models do not specifically address the complexities of working with people with severe mental illness (SMI) in primary care settings. Though behavioral health homes aim to address the health of people with SMI followed in community mental health clinics, there are a number of SMI patients who are treated solely in primary care. Barriers to caring for people with SMI in primary care include limited time, lack of provider knowledge, and stigma. With the life expectancy of people with SMI 10 to 25 years lower than the general population, these complex medical issues necessitate an integrated approach to treatment. **Objective:** We sought to

implement a modified collaborative care model for people with SMI using a population-based registry, patient-centered team care, measurement-based treatment to target for medical outcomes, and a stepped care model. Our goals are to 1) examine the feasibility and acceptability of creating an SMI registry within primary care; 2) document baseline screening rates on the following metrics—metabolic monitoring (BMI, A1c, LDL, BP), HCV, HIV, smoking status, and referral to community mental health clinics—and track outcomes after intervention to improve screening; 3) use the registry to conduct psychiatric caseload review at weekly primary care/behavioral health team meetings; and 4) inform best practices for treating patients with SMI in primary care settings. **Methods:** This is a prospective cohort study to evaluate the implementation of an SMI registry within a federally qualified primary care clinic in an urban, safety net center. Our study population will include all primary care clinic patients who have a diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, major depressive disorder with psychotic features, borderline personality disorder, and other psychotic spectrum disorders. A population management tool will be used to extract the registry list from the electronic health record. The study will quantitatively track screening rates for defined health metrics and qualitatively document the registry implementation process. **Results:** An initial SMI registry has been created and will be updated as new patients who meet criteria enter the clinic. Baseline data are being extracted. The registry is used during weekly caseload review with the clinic therapist, primary care provider and consulting psychiatrist. Outcomes will be reviewed with clinic management and used to inform clinical practice. Data collection and analysis will be completed in time for presentation of final results in the poster. **Conclusion:** The goal of this implementation project is to create a population-based tool to track screening and coordinate care for patients with SMI in a primary care setting. Lessons learned from our project can be used to inform others seeking to improve care for this particularly vulnerable population.

No. 72

Eye Care Day for Refugees: Improving Emotional

Wellness Through Inter-Specialty Collaboration

Poster Presenter: Diana Prieto, M.D.

Lead Author: Diana Prieto, M.D.

Co-Authors: Sophia Banu, M.D., Fuad Makkouk, M.D.

SUMMARY:

A recent study found that about 50% of Iraqi refugees reported depression, emotional stress and chronic health conditions, with 63% rating their overall physical health as fair or poor in association with at least one chronic medical condition. Despite available access to health insurance for recently arrived refugees, many delay medical care for different reasons, including language barrier, lack of transportation or simply not knowing where to seek care. At the Clinic for International Trauma Survivors (CITS) in Houston, Texas, where I saw mental health referrals from local refugee agencies, I found that more than half of every visit was spent addressing and discussing physical health concerns with patients. Many of these patients have recently arrived in the U.S., and this was their first encounter with a medical doctor in many years. All of our patients have mental health concerns, including depression, anxiety and PTSD; however, at their first visit, a majority expressed their main concern as being their physical well-being more so than their mental health. This led us to think of creative ways of addressing patients' more immediate needs and concerns. In partnership with ophthalmology faculty and residents who had a similar interest in providing medical care for refugees, we organized an event to provide free vision screening for all refugee clients of the agencies associated with CITS. The agencies helped to remove some of the main barriers to refugee medical care access by providing transportation and language interpreters. 136 refugees attended the event to receive diabetic eye exams as well as vision, cataract, glaucoma, and amblyopia screening. The patients then had the opportunity to discuss the findings and recommendations on an individual basis with an ophthalmologist. Patients were then provided with easy access to community resources for follow-up when needed in addition to a voucher for corrective eyewear if deemed necessary. In putting together this event, our goal was to provide ease of access for refugees to a medical specialty that is not always easily accessible due to the need for a referral in

addition to the previously discussed barriers to health care. Another goal of the event was to provide each refugee with the knowledge of where and how to access the care that they need so that they could continue to follow up as needed or seek care in other specialties independently. In the future, we hope to include other medical specialties important for this specific population in an effort to make health care more accessible by removing some of the social barriers that exist. It is also important to work closely with primary care providers taking care of the refugee patient population and to educate them about the barriers to health care that these patients face. It is through helping our patients improve their physical health that we hope to be able to address their mental health concerns more effectively.

No. 73
Impact of Child Psychiatry Access Programs on Mental Health Care in Pediatric Primary Care: What Do the Parents Think?

Poster Presenter: Shireen Cama, M.D.

Co-Authors: Alexander Knee, M.S., Barry D. Sarvet, M.D.

SUMMARY:

Background: Primary care doctors (PCPs) are increasingly being called on to identify and treat mental illness in pediatric patients, yet PCPs vary in their comfort in doing so. Child psychiatry access programs (CPAP) are publicly funded programs in several states nationwide that were established with the goals of increasing mental health care access for children and supporting PCPs in their role as front-line mental health providers. Regional CPAP teams provide assistance to PCPs through telephone consultations and, when necessary, in-person consultations. The objective of this study was to evaluate the effectiveness of the Massachusetts CPAP (MCPAP) in helping children and adolescents with mental health problems gain access to services and to assess parental satisfaction with the role of their child's PCP in the treatment of mental health problems. **Methods:** A total of 440 consecutive initial PCP telephone consultations made to the MCPAP team between March 2010 and June 2012 were sampled for the study. A structured telephone survey taking five to 10 minutes to complete was

administered to the parent by a member of the research staff an average of four months after the PCP's telephone consultation. Questions assessed types and rates of referrals to services and satisfaction rates based on measures reflective of the patient-parent-doctor relationship. **Results:** An average of 3.7 follow-up recommendations were made to each participant surveyed after PCP consultation with MCPAP. The most common recommendation (90%) was to follow up with the child's PCP, and the least common recommendation (12%) was to make a medication change. A majority of participants (78%) noted being able to follow through with the recommendations made by the PCP. Participants showed an overall high rate of satisfaction with their PCP's handling of their child's mental health problem (79%). Satisfaction rates did vary somewhat based on severity of the child's illness, with higher satisfaction rates for those with less severe illness. Participants who agreed with statements reflective of a positive patient-doctor relationship (including time spent with patient, respect for personal beliefs and knowledge of child's condition) exhibited higher rates of satisfaction with the PCP's role in their child's mental health problems than those who did not agree. **Conclusion:** Child psychiatry access programs are key resources for primary care physicians and families seeking mental health care for children nationwide. In this survey of parents whose child's PCP received assistance from the MCPAP program, results indicated high rates of utilization of recommended treatment services and high rates of parental satisfaction of the PCP's handling of their child's mental health issues.

No. 74
Effects of Mindfulness-Based Art Therapy (MBAT) on Psychological Symptoms in Patients With Coronary Artery Disease

Poster Presenter: Hye Jin Lee, Ph.D.

Co-Authors: Sung Hee Kim, P.S.W., Sang Yeol Lee, M.D., Ph.D.

SUMMARY:

Background: Mindfulness-based art therapy (MBAT) induces emotional relaxation in coronary artery disease patients and is a treatment known to improve psychological stability. The objective of this study was to evaluate the treatment effects of MBAT

for coronary artery disease patients. **Methods:** A total of 44 coronary artery disease patients were selected as participants; 21 patients belonged to the MBAT group, and 23 patients belonged to the control group. The patients in the MBAT group were given 12 sessions of treatments. To measure depression and anxiety, Beck Depression Inventory (BDI) and Trait Anxiety Inventory (TAI) were used. Anger and anger expression were evaluated using the State Trait Anger Expression Inventory (STAXI). The treatment results were analyzed using two-way repeated measures ANOVA. **Results:** The results showed that depression, trait anxiety and anger decreased significantly and anger control improved significantly in the MBAT group. In the control group, however, there was no significant change. **Conclusion:** MBAT can be seen as an effective treatment method that improves coronary artery disease patients' psychological stability. Evaluation of treatment effects using program development and large-scale research for future clinical application is needed.

No. 75

Phoenixin in Alzheimer's Disease

Poster Presenter: Gozde Gultekin

Lead Author: Murat Emul

Co-Authors: Gizem Cetiner Batun, Mehmet Yuruyen, Hakan Yavuzer

SUMMARY:

Background: Neuropeptides such as leptin and ghrelin are suggested to be related to learning and memory. Phoenixin is newly found neuropeptide localized in hypothalamus and shows effects via gonadotropin-releasing hormone (GnRH) receptor. The GnRH system is considered to be involved with memory formation processes. In this study, we compared plasma phoenixin level in people with subjective memory complaints (SMC) and mild Alzheimer's disease (AD). **Methods:** Thirty-two people with SMC and 29 people with AD enrolled in the study. All participants were assessed with a neuropsychological battery (Mini-Mental State Examination, Digit Span Forward and Backward, Immediate and Delayed Logical Memory, Rey Auditory Verbal Learning Word List Test, Stroop Color-Word Interference Test, and SET test for verbal fluency). ELISA kits were used to assay the level of

human phoenixin. **Results:** Patients with AD were significantly older than people in the SMC group ($p=0.02$). Mean plasma phoenixin level was not significantly different between groups ($292.93\pm 277.30\text{ng/ml}$ vs. $339.52\pm 351.64\text{ng/ml}$, $p=0.749$). The mean plasma phoenixin level was positively correlated with immediate recall in SMC ($r=0.417$ and $p=0.034$), while there was no significant correlation between plasma phoenixin level and neuropsychological parameters in the AD group. **Conclusion:** In an animal model, phoenixin has been found to facilitate memory formation and mitigate memory impairment. This study is the first searching the association of plasma phoenixin level and cognitive complaints or decline in the literature. Although there were no significant differences between SMC and AD groups according to plasma levels, phoenixin should be investigated in human beings for a predictive role and new treatment option in AD.

No. 76

Treatment of Delirium With Melatonin: Five Case Reports

Poster Presenter: Jung Woo Yang

Co-Authors: Aram Lee, Won Sub Kang, Jong-Woo Paik, Jong Woo Kim

SUMMARY:

Background: Delirium is one of the most common mental illnesses that can affect cognitive function and increase accidents such as falls, especially in hospitalized elderly people. Pharmacological symptomatic treatment of delirium has been tried with antipsychotics. This strategy seems to be effective in the majority of delirium cases, but because of side effects of antipsychotics, including QTc prolongation and extrapyramidal symptoms, there are some limitations with usage of antipsychotics in some patients, especially in elderly people and the severely medically ill. A new sleep medication, melatonin, has been shown to be an effective drug in treatment of insomnia, and recent studies have revealed the protective effects of melatonin usage to prevent onset of delirium.

Methods: All cases were consulted to the psychiatric department of Kyung Hee University Hospital because of symptoms of delirium and diagnosed delirium by *DSM-5* criteria. We compared baseline

severity of delirium to that of post-medication of prolonged-release melatonin 2mg at bedtime using the Delirium Rating Scale Revised 98 (DRS-98-R), and we considered the improvement of delirium as both the severity score of DRS-98-R less than 10 and less than 50% of the baseline score. **Results:** We report five cases of successful use of melatonin 2mg in treating delirium of hospitalized patients, instead of antipsychotics. Cases 1, 3 and 5 showed delirious symptoms after operation, case 2 had severe pulmonary problem and QTc prolongation, and case 4 had previous history of Alzheimer's dementia and diagnosed new onset of delirium by aggravated general medical condition. In cases 1 and 5, antipsychotics were already administered to patients in order to treat delirious symptoms, but it was not effective. After switching antipsychotics to melatonin, the symptoms of delirium, such as disorientation, insomnia and motor agitation, were alleviated. All the patients had significant reduction of severity score of DRS-98-R after administration of melatonin, without side effects such as over-sedation or QTc prolongation. **Conclusion:** These cases illustrate the possibility of the use of melatonin as an effective treatment option of delirious symptoms such as disorientation, motor agitation, lability of affect, and hallucinations, as well as insomnia, with fewer concerns of drug side effects. Further study with a larger sample and various doses will be required to confirm these results.

No. 77

A Case Study of Trichotillomania: Improved Clinical Outcomes With a Novel Psychotropic Combination-Treatment Regimen

Poster Presenter: Ritvij M. Satodiya, M.D.

Co-Authors: Deina Nemiary, M.D., Alyssa Peckham, , Douglas Boggs, M.S.

SUMMARY:

Background: Trichotillomania (TTM) is a disorder of poor impulse control in which individuals experience recurrent urges to pull body hair to relieve stress. The manifestation of these irresistible impulses often increases with stressful life events. The resulting baldness can significantly impair quality of life (QoL) and functioning. TTM manifests as a chronic course consisting of frequent remissions and relapses. Currently, there are no FDA-approved

medications for TTM, and there is need to grapple with major challenges pertaining to the diagnostic classification, assessment of severity, and, importantly, formulating a pharmacological treatment approach to improve the efficacy and durability of clinical improvement. **Case:** A 23-year-old Hispanic female navy veteran presented with a two-year history of significant anxiety and stress while on active duty with difficulty in adjusting to the work environment, resulting in hair-pulling behavior from her eyebrows and eyelashes with a sense of gratification and stress-relieving effects. Previous treatments with sertraline and fluoxetine were self-discontinued due to lack of efficacy and negative side effects. Symptom severity worsened with exposure to stressful life events. Observing no improvement on adequate trials of selective serotonin reuptake inhibitors (SSRIs), the veteran was started on naltrexone initially; improvement was seen, but resulted in a plateaued response. N-acetylcysteine (NAC) was further added for better symptom improvement and prevention of relapse. Her symptom severity and progress in treatment was assessed through the Massachusetts General Hospital Hairpulling Scale (MGH-HPS) on regular follow-up visits. **Results:** The veteran demonstrated a good response on naltrexone 50mg daily, with reduction in MGH-HPS from 17 to 11. NAC 1,200mg daily was added, resulting in a further decrease in MGH-HPS to 8 and a three-week period without any hair-pulling behavior. To prevent the relapse, escitalopram 5mg daily was added and increased to 10mg with behavioral interventions, resulting in MGH-HPS of 3. The veteran was monitored to assess the durability of the response on this novel combination regimen. **Conclusion:** Despite being a recognized psychiatric disorder for decades, few psychotropic treatments exist for TTM. SSRIs are traditionally used with varied response, along with undesirable side effects, poor adherence and multiple relapses in patients. Our case report supports the use of NAC, naltrexone and an SSRI as a combination treatment option. This novel regimen may result in clinical improvement, a reduced side effect profile, better tolerability, and the possibility of sustained remission with enhanced QoL. It is important to evaluate any potential novel therapies or combination of therapies. Further research should be designed to test the efficacy of treatment

combinations as well as to assess the longitudinal maintenance of the benefits with durability to treatment.

No. 78

Delusional Parasitosis With Dermatillomania: A Case Report

Poster Presenter: Pooja Shah, M.D.

Co-Authors: Stacy J. Dumas, M.D., Ramon Solhkhah

SUMMARY:

Case: The patient is a 43-year-old veteran with a history of schizoaffective disorder and substance use evaluated for submandibular pain and infected skin eruptions over his body. He was initially admitted for opioid and cocaine use and escaped the facility only to return back with withdrawal symptoms. The patient reports using heroin (IV) three to four days per week and two to three bags with each use. In the course of evaluation, the patient endorsed suicidal ideations secondary to feeling distraught and having “rage attempts” while constantly slapping himself. The patient requested to inject some heroin in order to show proof of the bugs and asserted to performing self-surgery in an attempt to remove them. The patient claims that he had sent the samples of bugs for evaluation in a federal lab located in Virginia and is waiting to hear from them. Past history is significant for cooking methamphetamine, for which he served time in federal prison; homicidal ideations toward his biological family with charges of trespassing; and getting into a physical altercation with a police officer. Records indicate frequent hospitalization for similar complaints in different government hospitals across the U.S. The patient has been rejected from methadone treatment program due to skin lesions.

Discussion: Delusional parasitosis (DP), or acarophobia, is an obsessive phobic stage in which the patient believes that their skin is infested by parasites. In this case, the parasitosis is secondary to IVDA and is associated with superimposed dermatillomania. Dermatillomania is characterized by repeated urge to pick at one’s own skin. The diagnosis has been challenging in this particular case secondary to various biological, environment and social factors. The primary cause is IVDA, which caused the patient to develop DP followed by skin picking. The management involves treating the

underlying cause with a combination of psychotherapy and pharmacotherapy but has been a challenge due to noncompliance. A possibility of dissociative fugae and somatoform disorder should be considered, since the patient has travelled far and wide for treatment and is unable to share the specifics of each visit. The neurobiological basis of the disorder has been explained, which will better equip us to treat such patients effectively.

No. 79

The Functional Connectivity of Cognitive Control Network in Patients With Obsessive-Compulsive Disorder Before and After Cognitive Behavior Therapy

Poster Presenter: Xiangyun Yang

SUMMARY:

Obsessive-compulsive disorder (OCD) is a chronic psychiatric disorder characterized by persistent intrusive thoughts (obsessions) and/or repetitive behaviors (compulsions), also associated with cognitive impairment. The cognitive control network plays an important role in performing control tasks, and neuroimaging studies have found abnormal functional connectivity of the control network in OCD patients. Cognitive behavior therapy (CBT) is an effective treatment for OCD. Task-related functional MRI (fMRI) studies have found CBT improves the functions of several brain regions in control systems of OCD patients, accompanied with the improvement of clinical symptoms, but whether CBT could improve the abnormal functional connectivity of the cognitive control network at resting state in OCD is unknown. To explore the neural mechanism of CBT for OCD, this study investigated changes in functional connectivity between the cognitive control network and other functional networks in OCD patients after CBT. Forty-five unmedicated OCD patients were recruited and received a 12-week individual manual-based CBT program. The patients and 45 matched normal controls received clinical evaluation, including Y-BOCS, HAM-D and HAM-A scales and resting-state fMRI scanning at baseline and follow-up. We constructed the whole-brain functional network based on a 264-node parcellation and identified 13 functional systems, then extracted the cognitive control network, which consisted of two subnetworks, including the frontal-parietal

network (FPN) and the cingulate-opercular network (CON), and other important networks, including the default mode network (DMN), the salience network (SAN) and the subcortical networks (SCN), which were reported to play important roles in the neural mechanism of OCD. We furtherly estimated the mean functional connectivity strength among these networks and adopted the repeated-measure analysis of variance to detect the effect of CBT for this network connectivity. Finally, we performed correlation analysis to explore the relationship between the changes in clinical symptoms and network connectivity. Forty-one OCD patients completed the program, whose symptoms scores all decreased significantly after CBT treatment. At baseline, OCD patients showed lower functional connectivity than normal controls between FPN and SCN, CON and DMN, CON and SAN, and CON and SCN, respectively (all $p < 0.05$, corrected). After CBT, the connectivity between CON and SAN and between CON and SCN became higher than pretreatment and had no significant difference with normal controls at the follow-up period. We also found the change of compulsion score was negatively correlated with the change of functional connectivity between CON and SCN. The results indicated that the abnormal functional connectivity between CON and SAN and between CON and SCN in OCD patients could be modulated by CBT. These findings provided evidence for understanding the mechanism underlying CBT for OCD.

No. 80

History of Childhood Trauma as a Risk Factor for Low Therapeutic Alliance Bond in Psychiatric Outpatients

Poster Presenter: Adina Chesir

Co-Authors: Mariah Hawes, Zimri S. Yaseen, M.D., Igor Galynker, M.D., Ph.D.

SUMMARY:

Childhood trauma history has been shown to negatively affect emotional relationships into adulthood. This study investigated whether a patient's history of childhood trauma may act as a risk factor for low levels of early bond with their therapist, which may have detrimental ramifications for treatment outcomes. Psychiatric outpatients with varying diagnoses (N=148) were administered

the Childhood Trauma Questionnaire (CTQ) and the Working Alliance Inventory (WAI). Pearson's correlations showed significant negative correlations between both the physical abuse ($r = -0.171$, $p = 0.041$) and emotional neglect ($r = -0.246$, $p = 0.003$) subscales of the CTQ with the bond subscale of the WAI. A multiple regression analysis indicated that only emotional neglect independently significantly predicted bond ($\beta = -0.213$, $p = 0.026$). These results support the notion that a patient with a history of emotional neglect is at higher risk for low early bond with their therapist than those without this trauma history. This finding has important clinical implications, as once clinicians are aware of this risk, they can focus on increasing bond level to attempt to improve treatment outcomes.

No. 81

Neurofeedback Treatment on Depressive Symptoms and Functional Recovery in Treatment-Resistant Patients With Major Depressive Disorder

Poster Presenter: Ga-Won Lee

Lead Author: Hye-Geum Kim

Co-Authors: Bon-Hoon Koo, Eun-Jin Cheon, Young-Ji Lee

SUMMARY:

Background: Neurofeedback is proposed for the complimentary treatment of treatment-resistant depression (TRD). Some studies have reported improvement in both depressive symptoms and executive function by neurofeedback. We evaluated the effects of neurofeedback as an augmentation treatment on depressive symptoms and functional recovery in treatment-resistant patients with major depressive disorder. **Methods:** We included 24 adult patients with TRD in the current study. TRD refers to a patient who had persistent depressive symptoms (total scores of 14 on the 17-item Hamilton Rating Scale for Depression [HAM-D-17]) and functional impairment despite adequate antidepressant trials. Twenty-four patients with TRD were assigned to the neurofeedback group (N=12) or control group (medication only group) (N=12). The neurofeedback group was asked to participate in 12 weeks of combined therapy of medication and approximately 12 to 24 sessions of neurofeedback training. The neurofeedback protocol was once or twice a week training of both beta/sensorimotor rhythm and

alpha/theta for 12 weeks. With every visit, patients received beta/sensorimotor rhythm training for 30 minutes and then alpha/theta training for 30 minutes. Patients were evaluated using the Hamilton Depression Rating Scale (HAM-D), Beck Depression Inventory (BDI-II), Clinical Global Impression-Severity (CGI-S), Euro Quality of Life Questionnaire Five-Dimensional Classification (EQ-5D), and Sheehan Disability Scale (SDS) at baseline and one, four and 12 weeks. **Results:** In the neurofeedback group, cumulative response and remission rates by HAM-D score were 66.7% and 42.7% at week 12, respectively. Based on change from baseline to week 12, the neurofeedback training decreased mean score on HAM-D, BDI-II, CGI-S, EQ-5D, and SDS ($p < 0.01$). The changes of HAM-D score, EQ-5D and SDS were significantly higher in the neurofeedback group than the control group ($p < 0.05$). In contrast to the neurofeedback group, the control group did not show significant improvement from baseline after 12 weeks. **Conclusion:** This is the first prospective controlled study of neurofeedback treatment on functional recovery in patients with TRD. In this study, neurofeedback could improve both depressive symptoms and functional impairment significantly. Despite a small sample size, these results suggested that neurofeedback can be effective augmenting treatment not only for depressive symptoms but for functional recovery in patients with TRD.

No. 82

Therapeutic Merits of Social Media: Blogging to Reduce Depressive Symptoms and Increase Psychological Well-Being

Poster Presenter: Nathan L. Baumann, M.A.

SUMMARY:

Background: Writing has been shown to be beneficial for physical and psychological health, leading to improvements in general well-being, lowering depressive symptomology and even reducing physician visits. Furthermore, social support has been shown to be a critical factor explaining why some people are better at coping with loss and traumatic events than others. This study included individuals with depressive symptoms who participated in a week-long writing exercise comparing non-personal writing to deeply personal

writing paradigms. Participants completed writing paradigms either in an electronic diary condition or an online blogging platform. The study sought to examine 1) the utility of using expressive writing techniques in an online context versus an offline condition in increasing psychological well-being and 2) the effects of writing with additional social support on well-being. Individuals in the online writing context received social support through receipt of comments on their blog (either few or several comments daily). **Methods:** Participants included 37 undergraduate students (mean age=24.18, SD=8.05, 84.8% female, 54.5% White) currently taking a psychology class at UCCS. Participants were recruited online using the SONA Research Management System at UCCS, as well as in-person recruiting efforts at five large, core requirement psychology classes. Ten dependent variables were used: hope, happiness, autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, self-acceptance, quality of life, and depressive symptoms. **Results:** A one-way mixed between-within subjects multivariate analysis of variance was performed. Results indicated a significant main effect on autonomy ($F[1,32]=8.4$, $p=0.007$, $\eta^2=0.21$) and depression using the Patient Health Questionnaire (PHQ-9) ($F[1,32]=11.1$, $p=0.002$, $\eta^2=0.26$), where autonomy increased and depression symptoms decreased. There was a statistically significant interaction between expressive and filter writing groups on positive relations with others ($F[1,32]=5.451$, $p=0.026$, $\eta^2=0.15$), as well as self-acceptance ($F[1,32]=7.082$, $p=0.012$, $\eta^2=0.18$), where expressive writing groups saw decreases in both variables. Dependent t-tests were performed to explore within-group effects. The filter writing group saw statistically significant improvements in the SHS ($p=0.004$), autonomy ($p=0.005$), self-acceptance ($p=0.019$), and PHQ-9 ($p=0.015$). Expressive writing groups saw a significant improvement in PHQ-9 scores ($p=0.041$). **Conclusion:** The results of this study converge with previous studies regarding depressive symptoms, though diverge regarding writing paradigm effectiveness. The increased overall psychological benefits of filter writing may be related to a number of factors. The study provides evidence of other potentially useful writing techniques outside of the

expressive writing paradigm, including potential effects of social support.

No. 83

**PHQ-9 Item 9—Are We Actually Screening Suicide?
A Validation Study of the PHQ-9 Item 9 With the
Columbia Suicide Severity Rating Scale (C-SSRS)**

Poster Presenter: Peter J. Na, M.D., M.P.H.

*Co-Authors: Fernando S. Goes, M.D., Peter P. Zandi,
Ph.D., William V. Bobo, M.D., M.P.H.*

SUMMARY:

The PHQ-9 is one of the most widely used screening tools for depression in general and mental health specialty practices. PHQ-9 item 9 evaluates the presence of passive thoughts of death or suicidal ideation within the last two weeks and is often used to screen depressed patients for suicidal ideation and intent. However, the PHQ-9 item 9 was not developed for this purpose, and its use as a predictor of suicidality is controversial. Among the inventories that measure suicidality, the C-SSRS is regarded as the most reliable and validated scale. Nevertheless, studies that have investigated the validity between PHQ-9 item 9 and C-SSRS are scarce. We analyzed data from 841 patients enrolled in the National Network of Depression Centers Clinical Care Registry. Demographic and clinical variables, including PHQ-9 and C-SSRS scores, were collected using standardized questionnaires. For PHQ-9 item 9, suicidality was defined as having passive thoughts of death or suicidal ideation for at least several days within the past two weeks. Suicidality positive cases for the C-SSRS were defined as either endorsing active suicidal ideation and having any intent to act on such thoughts within the past month; having an actual, interrupted or aborted suicide attempt; or preparing for a suicidal act within the past three months. We measured 95% Wilson's CI of the positive predictive value (PPV), negative predictive value (NPV), sensitivity, and specificity of a positive screen on PHQ-9 item 9 for the entire cohort and in subgroups stratified by demographic and clinical variables, using the C-SSRS definition of suicidal risk positive as a gold standard. Among 841 patients, 346 patients (41.1%) endorsed passive death wishes or suicidal ideations from the PHQ-9 item 9. For the overall cohort, sensitivity was 87.6% (95% CI [80.2, 92.5]), specificity was 66.1% (95% CI [62.6, 69.4]),

PPV was 28.6% (95% CI [24.1, 33.6]), and NPV was 97.2% (95% CI [95.3, 98.3]). For stratified subgroups, sensitivity, specificity, PPV, and NPV ranged between 55.0–100.0%, 26.4–87.3%, 15.2–58.1%, and 92.2–100.0%, respectively. Notably, 187 patients with advanced or professional degrees had the highest PPV (58.1%) and high specificity (80.2%). Patients with a PHQ-8 total score under 10 demonstrated the lowest sensitivity (55.0%) and the highest specificity (87.3%), whereas patients with PHQ-8 total score 20 or higher had the lowest specificity (26.4%). Elderly (age 65 or over) and female patients with irregular menstrual period had low sensitivities of 72.7% and 63.6%, respectively. Pregnant patients had 100% sensitivity and high specificity of 81.8%. However, the subgroup's sample size was small (N=46). Overall, the specificity and PPV of PHQ-9 item 9 were low, owing to a high proportion of false positive results. The results of our study suggest that the PHQ-9 item 9 is a sensitive but insufficiently predictive instrument to detect for suicidality in the overall cohort.