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B O O K

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THURSDAY, JANUARY 13, 2022

ADHD 101

12:00 p.m. - 5:00 p.m.

1. ADHD 101

Presenters:

Chair: Ann Childress, Center for Psychiatry and Behavioral Medicine, Inc.

Jeffrey Newcorn, Mount Sinai Medical Center

David Goodman, Johns Hopkins at Green Spring Station

Tanya Froehlich, Cincinnati Children's Hospital Medical Center

Joseph Biederman, Massachusetts General Hospital

Overall Abstract: Introduction: Although attention-deficit/hyperactivity disorder or ADHD is the most common neurobehavioral disorder in childhood and often persists as children become adolescents and adults, many patients may not be identified or optimally treated after diagnosis. The lack of proper diagnosis and treatment can have severe implications ranging from school failure to increased mortality.

Objectives: At the end of the presentations, participants should be able to diagnose and treat ADHD in patients in various stages of life.

Methods: This course will discuss the prevalence of ADHD in preschoolers, older children, adolescents, and adults; the differing symptoms at each of these stages; evidence-based treatment guidelines and how to apply these to clinical practice.

FRIDAY, JANUARY 14, 2022

Opening Plenary: Virtual and Electronic Assessment and Intervention Tools

10:00 a.m. - 11:45 a.m.

2. Virtual and Electronic Assessment and Intervention Tools

Chairs: Margaret Weiss, Cambridge Health Alliance Russell Schachar, The Hospital for Sick Children

2.1 Bringing Behavioral Treatment for Disruptive Behavior to Those Who Need it: What They Didn't Teach You in Medical/Graduate School

Patrick McGrath, Dalhousie University

2.2 Advances in Mental Health Measurement

Robert Gibbons, University of Chicago

Overall Abstract: The last year has seen implementation of telehealth platforms for communicating with patients, integrated digital assessment procedures, and virtual interventions. This symposium brings together a novel computerized adaptive testing technique and a virtual intervention.

Dr. Robert Gibbons has developed a computerized adaptive technology in which it is possible to assess a spectrum of psychiatric disorders (depression, anxiety, mania, PTSD, psychosis, substance abuse, suicidality, and social determinants of health). The program adaptively selects from a very large bank of questions those items relevant to the patient as the program learns from their responses. The result provides a diagnostic profile with high reliability with standardized diagnostic interviews within minutes. This is the precision, personalized medicine of psychiatric assessment. There is a paucity of well validated, broad based, short tools for assessment. The clinical impact of this has been that we screen for specific disorders prior to fully appreciating comorbid diagnoses and differential diagnosis. Computerized adaptive testing for children and adults has the potential to correct for this failing. Dr. McGrath pioneered Strongest Families over decades to assure access to Canadian and Nordic families who would not otherwise have been able to access behavioral intervention. Integration of the Strongest Families program into telehealth has the potential to provide best practice behavioral, family and psychoeducational intervention across communities in the US, even in areas without access to trained practitioners. At the completion of this symposium clinicians will understand and know how to access two innovative and powerful tools for assessment and psychosocial treatment.

Learning Objective 1: Identify the potential strengths of computerized adaptive testing to clinical and research practice.

Learning Objective 2: Know how to access and use the Strongest Families virtual intervention to support behavioral management and psychoeducation.

Learning Objective 3: Discuss how digital assessment and digital intervention can be integrated into telehealth and hybrid care to optimize patient outcomes.

Adult ADHD: What's New?

12:00 p.m. - 1:30 p.m.

3. Adult ADHD: What's New?

Chair: Gregory Mattingly, Midwest Research Group

3.1 Adult ADHD: Are We Missing It in Practice?

Margaret Sibley, NYU School of Medicine

3.2 Mechanism of Action of Treatments for Adult ADHD

Vladimir Maletic, University of South Carolina School of Medicine

3.3 Innovations in the Management of Adult ADHD

Gregory Mattingly, Midwest Research Group

Overall Abstract: Attention Deficit Hyperactivity Disorder (ADHD) is a childhood-onset neurodevelopmental disorder often persisting into adulthood causing significant functional impairment, reducing quality of life. It is more common in psychiatric populations than the ~2.5-4% seen in the general adult population. Almost 80% of adults with ADHD present with at least 1 psychiatric comorbid disorder, being more likely to receive treatment for that disorder than for their ADHD. ADHD severity, comorbid conduct disorder, major depressive disorder (MDD), and ADHD treatment are main predictors of ADHD persistence into adulthood.

To improve patient functioning, quality of life, and other outcomes for adults with ADHD, it is imperative that clinicians recognize how ADHD presentation varies across the lifespan, consider overlapping symptoms with comorbid psychiatric conditions, and consider new treatments that may be effective in their patients.

To address these needs, Clinical Care Options (CCO), in partnership with Global Medical Education (GME), propose a symposium summarizing needs and clinical targets within a neurobiological framework to which novel and emerging therapies are mapped. Faculty enlisted by CCO provide cutting-edge updates on the latest developments in treatment of ADHD informed by advances in understanding underlying dimensional components.

First, Margaret Sibley will summarize the nature and scale of unmet needs in screening for and recognition of adult ADHD, highlighting needs for highly tolerable agents that promote adherence, improve functioning, and do not worsen highly prevalent comorbid conditions. Second, Greg Mattingly will discuss novel and emerging pharmacologic treatments and explore digital therapies. Third, Vlad Maletic will present current and developing strategies for improving executive function in adults with ADHD.

This symposium reviews clinical and neurobiological treatment targets relating to unmet needs in the recognition and management of adult ADHD, further exposing learners to current, cutting-edge research on novel treatments including innovative formulations of stimulant medications, new non-stimulant treatments, and digital therapeutics.

Learning Objective 1: Participants shall be able to evaluate the need for ADHD treatment in adults with comorbid conditions.

Learning Objective 2: Participants shall be able to discuss novel and emerging therapies in the treatment of adult ADHD.

Learning Objective 3: Participants shall be able to develop strategies to help patients improve executive functioning in patients with adult ADHD.

Concurrent Symposia

2:30 p.m. - 4:00 p.m.

4. Assessing Driving Performance in Individuals with ADHD and ASD

Chair: Ronna Fried, Massachusetts General Hospital and Harvard Medical School

4.1 The Effects of Lisdexamfetamine Dimesylate on the Driving Performance of Young Adults with ADHD

Joseph Biederman

4.2 Can Buspirone Improve Driving Performance in Drivers with High Functioning Autism Spectrum Disorder?

Maura DiSalvo Massachusetts General Hospital

4.3 The Utility of Driving Simulation for Assessing Differences in Individual's Driving Behavior

Bruce Mehler, Massachusetts Institute of Technology

4.4 Examining Driving Behavior in Young Adults with High Functioning Autism Spectrum using a Driving Simulation

Ronna Fried, Massachusetts General Hospital and Harvard Medical School

Overall Abstract: Driving is an important aspect of adult life for both employment and social aspects. Yet, it has been shown to be a serious problem in different ways for individuals with Attention Deficit Hyperactivity Disorder (ADHD) and those suffering from High Functioning Autism Spectrum Disorder (HF-ASD). It has been documented in the literature that individuals with ADHD are more likely than drivers without ADHD to commit traffic violations and have adverse driving outcomes. In High Functioning Autism it has been documented that although many of those individuals are capable of driving, that many choose not to drive. Discovering the underlying reasons for both of these phenomena and testing ways to ameliorate it has important clinical and public health benefits. Dr. Mehler from MIT will present data on the validity of using driving simulators to assess driving performance and behaviors. He will show how a simulation can be designed for different populations. Dr. Fried will present data from a baseline study to assess the driving behavior of individuals with HF-ASD which found profound differences in heartbeat and glance behavior in the drivers. Ms. DiSalvo will discuss the results of a treatment study with individuals with HF-ASD when given a pharmacological agent to treat anxiety. Finally, Dr. Biederman will discuss results of a study of young adults with ADHD when prescribed a stimulant. The participants with ADHD showed significant potentially life-saving changes in driving performance when taking stimulants.

Learning Objective 1: To learn how the design of a driving simulation can help with the understanding of driving behavior in psychiatric populations.

Learning Objective 2: To further understand the driving behaviors of individuals with High Functioning ASD and ADHD and possible ways to ameliorate the of the difficulties.

Learning Objective 3: To understand the results of pharmacological interventions on the driving behavior of individuals with ADHD and HF-ASD.

5. How Should We Think about Genetics and Neuroimaging in ADHD?

Chair: Steven Pliszka, UT Health Science Center at San Antonio

5.1 Intrinsic Functional and Structural Brain Architecture Predicts Progression of Future Pathology

Susan Whitfield-Gabrieli, Northeastern University

5.2 Towards Genetic Neuroimaging in Attention Deficit Hyperactivity Disorder

Philip Shaw, National Human Genome Research Institute

5.3 When Will Genetics and Neuroimaging Be Useful in the Treatment and Diagnosis of ADHD?

Steven Pliszka, UT Health Science Center at San Antonio

Overall Abstract: Genetics and neuroimaging techniques are advancing tremendously. Clinicians want to know when such techniques might be useful in the clinic. Two studies will be presented that represent cutting edge work in these areas. Dr Whitfield-Gabrieli will look at fMRI resting state connectivity and white matter integrity in adolescents with ADHD with and without depression. Dr. Shaw considers two strategies for integrating genomics and neuroimaging in ADHD looking for features that can serve as targets for future gene discovery through large scale Genome Wide Association Studies (GWAS). Dr. Pliszka will discuss these studies from a clinical perspective and why clinicians should be increasingly knowledgeable of such findings. While not of immediate clinical use, genetics and neuroimaging may point the way to more meaningful subtyping of mental disorders as well as to genetic counseling, treatment selection and monitoring and drug development.

Learning Objective 1: Understand basic concepts of genomics and neuroimaging.

Learning Objective 2: Describe resting state functional connectivity in ADHD and comorbid mood/anxiety disorder.

Learning Objective 3: Define fMRI feedback and discuss how it might be clinically applicable in the near future.

Learning Objective 4: Discuss how genomics and neuroimaging might be used in a sophisticated way in treatment planning.

6. Introducing the APSARD Health Equity Task Force

Chairs: Martin Katzman, START Clinic for Mood and Anxiety Disorders; J. Faye Dixon, UC Davis Medical Center

Presenters:

Amy Glasofer, Virtua

Napoleon Higgins, Bay Pointe Health Service, Inc.

Roberta Waite, Drexel University

Martin Katzman, START Clinic for Mood and Anxiety Disorders

Brooke Molina, University of Pittsburgh

Overall Abstract: Our society has been increasingly more interested and aware of the needs to improve access to opportunity, through programs focusing on increasing diversity, equity, and inclusion (DEI); in part this has been the case, to both increase fairness, as well as to enhance society's growth by providing a wider range of ideas and solutions to society's challenges.

Diversity is the allowance for representation in the power structure of society, of any and all groups who may differ in terms of race, religion, gender, language, orientation, ethnicity, nationality, language, socioeconomic status as well as (dis)ability.

Equity on the other hand represents the process of ensuring that all processes, procedures, and distribution of resources and opportunities are impartial, fair and provide equal possible outcomes for every individual. In association, one may understand Inclusion as the practice of ensuring that people feel a sense of belonging or being included.

Within this symposium we will address the concerns associated with inequity within our society, with a focus on how inequity within diverse populations has resulted in poorer outcomes for a variety of minority populations suffering with ADHD, with a focus on the "School to Prison Pipeline." The program will highlight "APSARD's Diversity Equity Initiative Taskforce," its members, its goals, and highlight its planned partnership with the APSARD membership to contribute to improved outcomes in all communities of our society.

Plenary 2: Reinforcement/Reward Mechanisms, Response to Punishment by Country--Interventions for Executive Functioning

4:15 p.m. - 5:45 p.m.

7. Reinforcement/Reward Mechanisms, Response to Punishment by Country: Interventions for Executive Functioning

Chairs: Brooke Molina, University of Pittsburgh; Margaret Weiss, Cambridge Health Alliance

7.1 From Research to Clinical Practice: Applying What We Know about Altered Reinforcement Sensitivity to the Management of ADHD

Gail Tripp, OIST Graduate University

7.2 Translating Neurobiological Insights into Clinical Implications and Guidance for Parents

Adele Diamond, University of British Columbia

Overall Abstract: Compared to children without ADHD, children with ADHD have been shown to have cognitive and behavioral differences stemming from executive dysfunction and altered response to reward and punishment. Although lab-based studies have investigated these characteristics to understand the causes of ADHD, research that emphasizes these differences for their treatment implications is also critical. This pair of presentations will address this topic. Dr. Tripp's presentation will review altered sensitivity to reward and punishment experienced by children with ADHD and the implications for clinical practice (specifically, how behavioral parent training might be altered for better effect). Dr. Diamond will discuss the impact of stress on executive dysfunction, interactions between stimulant treatment and cognitive function, and practical methods at home and school for maximizing executive function. Together these presentations recognize the neurobiological basis of cognitive and behavioral difficulties for children with ADHD and discuss opportunities for incorporating their consequences, executive dysfunction and differential response to reward and punishment, into clinical application.

Learning Objective 1: Understand differential response to reward and punishment for children with ADHD.

Learning Objective 2: Learn ways to adjust behavioral parent training to accommodate differential response to reward and punishment.

Learning Objective 3: Know at least one mechanism by which stress impacts executive functioning.

Learning Objective 4: Learn at least one way to maximize children's executive functioning at home or school.

Concurrent Symposia

6:00 p.m. - 7:30 p.m.

8. Autism Spectrum Disorder: Updates on Clinical Presentation and Treatments

Chair: Gagan Joshi, Harvard Medical School/Massachusetts General Hospital

8.1 Does Sex Moderate the Clinical Presentation in Psychiatrically Referred Populations with ASD?

Joseph Biederman, Massachusetts General Hospital

8.2 A Neuro-Imaging Informed Controlled Trial of Memantine in Youth with High-Functioning Autism Spectrum Disorder

Gagan Joshi, Harvard Medical School/Massachusetts General Hospital

8.3 Efficacy of Tpbm on ADHD Symptoms and Executive Function Deficits in Adults with (HF)-ASD

Tolga Ceranoglu, Massachusetts General Hospital

Overall Abstract: Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by difficulties with social interaction and restrictive/repetitive behaviors. Each successive epidemiological survey documents an increasingly higher prevalence of ASD, now estimated to affect >2% of the general population. Prevalence of ASD in psychiatrically referred populations is up to five-folds higher than expected, presenting with psychopathological burden that is similar if not greater than typically expected. Though the burden of autistic traits and psychopathologies is not equally shared between sexes in the general population, the sex effects on clinical profile of ASD and associated psychopathology in psychiatrically referred populations remains to be understood. In addition, as there is no established pharmacological treatment for the core features of ASD, there remains a need for treatment interventions for the core features of ASD. Novel pharmac-imaging and neuromodulation approaches are under investigation to develop treatments for core features of autism. Guided by neural glutamate dysregulation observed in ASD a pharmac-imaging treatment trial with glutamate modulating agent memantine was conducted to study the social and neural response in youth with ASD. Another novel approach for the treatment of ASD is Transcranial Photobiomodulation (tPBM) therapy. Results from recently concluded preliminary trial of tPBM for the management of autism features are promising.

This symposium aims to present the moderating effect of sex on the clinical presentation of autism and associated psychopathology, and offer novel neuro-imaging informed pharmacotherapy and neuromodulation therapy options for the management of ASD. The first presentation will discuss sex differences in the clinical presentation of ASD and associated psychopathology in the psychiatrically referred population. The second presentation will address the therapeutic potential of memantine for the treatment of autism in youth. The third presentation will present empirical evidence that suggests tPBM is a safe and feasible treatment approach that has the potential to treat ASD.

Learning Objective 1: To explore sex differences in the clinical presentation of ASD and associated psychopathology in the psychiatrically referred population.

Learning Objective 2: To learn about novel pharmac-imaging and neuro-modulation based treatments for ASD.

9. ADHD, Infections and the Immune System

Chair: Iris Manor, Geha MHC

9.1 Innate and Adaptive Immunity and ADHD: A Discussion and Literature Review

Beth Krone, Icahn School of Medicine at Mount Sinai

9.2 The Prevalence and Characteristics of Long COVID Patients with and without Symptoms of ADHD

Margaret Weiss, Cambridge Health Alliance

Overall Abstract: Objective: To evaluate the possible association between ADHD in children and adolescents (youngsters) and the rate of all childhood infectious diseases (ID).

Methods: A population-based case-control study using Electronic Medical Records (EMR) of an Israeli Health Maintenance Organization, Leumit Health Services (LHS). ICD 9/10 criteria were used for all diagnoses. The study population consisted of all individuals (5-18 years) members of LHS between 01-01-2006 to 06-30-2021. Cases met ICD9/10 criteria for ADHD. Controls included randomly selected non-ADHD subjects, matched individually in a 2:1 ratio, by age, gender, sector, SES, BMI; three exposure categories were retrieved from the EMR: pediatric ID, anti-infective medications; the number of physicians' visits. Subjects with underlying oncological disorders or an immune deficiency were excluded. The study was approved by the review board of Shamir Medical Center and the Research Committee of LHS.

Results: Cases: 18,756 subjects, age=8.3+2.6, M:F 63%:37%; controls: 37,512 matched 1:2, age=8.3+2.6, M:F 63%:37%. The demographic variables were similar. The rates of all ID were significantly higher in youngsters with ADHD than in controls, not restricted to one body system, for example: acute respiratory infection (OR=1.4,95%CI-1.3-1.4,p<.001); acute gastroenteritis (OR=1.3,95%CI-1.3-1.4,p<.001) Salmonellosis, (OR=2.8,95%CI-2.3-3.5,p<.001) and Urinary Tract Infection (UTI) (OR=1.3, CI 95% 1.2-1.4,p<.001). All anti-infective agents were prescribed significantly more in ADHD youngsters (p<.001). There was a significantly higher rate of primary care physicians and experts' visits.

Conclusions: Youngsters with ADHD demonstrated significantly higher rates of all types of ID, anti-infective agents, and frequency of physicians' visits compared to matched controls. Possible explanations are poor hygiene; close contact with others; immaturity of the autonomic nervous system that leads to susceptibility to ID, as reflected in UTI; and immunological vulnerability.

This increased rate of ID in youngsters with ADHD is a major public health issue. Physicians should be aware of this vulnerability.

Learning Objective 1: Children and adolescents with ADHD suffer significantly more from all kinds of infections.

Learning Objective 2: Children and adolescents with ADHD need significantly more times second line antibiotics.

Learning Objective 3: Physicians who treat Children and adolescents with ADHD should bear in mind their vulnerability to infections, as well as physicians should consider ADHD as a possible comorbidity in children and adolescents who tend to suffer from many infections.

SATURDAY, JANUARY 15, 2022

Plenary 3: Genes and Environment in ADHD, New Data and Overview of What We Know

10:30 a.m. - 12:00 p.m.

10. Genes and Environment in ADHD, New Data and Overview of What We Know

Chair: Joel Nigg, Oregon Health and Science University

10.1 Polygenic Risk and Geospatial Coding of Neighborhood Disadvantage and Pollutant Exposure: New Findings

Joel Nigg, Oregon Health and Science University

10.2 How Do Disadvantaged Neighborhood Contexts Shape the Genetic and Environmental Origins of ADHD and Other Common Forms of Psychopathology?

S. Alexandra Burt, Michigan State University

10.3 Update on Molecular Genetics: Polygenic Scores and Their Relevance to Clinicians

Anita Thapar, Cardiff University

Overall Abstract: Several decades of work have established that the etiology of ADHD involves both substantial genetic liability (heritability) and important environmental exposures that modulate risk and outcome. Recent work also indicates that genetic effects vary by environment or exposure level. Clarifying the interplay of genetic liability and environmental exposures on ADHD and its course are vital both to explaining etiology and variability in course, and to devising ways to prevent the condition so as to restore full functioning potential to at risk children. The present symposium will provide an update on recent progress in this area. Dr. Thapar will provide an update on what is known about genetic risk in ADHD and introduce the concept of molecular genetic risk scores called polygenic scores. Dr. Burt will present exciting recent twin data illustrating how the strength of genetic risk depends on environmental exposures, and introduce the novel measurement method of geospatial coding of addresses to measure exposure to neighborhood disadvantage. Dr. Nigg will expand this idea by combining polygenic risk scores and geospatial coding to illustrate effects of key exposures on genetic risk and vice versa.

Learning Objective 1: Participants will recognize and be able to define two new measurement tools for assessing risk, polygenic risk scores and geospatial address coding.

Learning Objective 2: Participants will understand the extent to which genetic involvement in ADHD may vary by environmental conditions.

Learning Objective 3: Participants will be able to explain current state of knowledge regarding genetic influences on ADHD.

Concurrent Symposia

12:15 p.m. - 1:45 p.m.

11. Shedding Light on Sleep, Mood and Visual Functioning in Adult ADHD

Chair: Mylène Böhmer, Parnassia Groep / PsyQ

11.1 Hormonal Changes in Mood and ADHD Severity in Women with ADHD

J.J. Sandra Kooij, PsyQ, Program Adult ADHD, The Hague

11.2 ADHD, Sleep, Chronotype and Health in a Large Cohort of Dutch Nurses

Maria Michielsen, PsyQ, Expertise Center Adult ADHD

11.3 Looking into the Eye of ADHD

Farangis Dorani, Parnassia Groep - PsyQ

11.4 Chronotherapy in Adult ADHD: Results from the Phase Study

Emma van Andel, PsyQ Expertise Center Adult ADHD, The Hague

Overall Abstract: Adults with ADHD report common comorbidities such as sleep, mood-, and anxiety disorders. Both sleep as well as mood follow a circadian rhythm, a rhythm of approximately 24 hours. The circadian rhythm is regulated by the biological clock in the hypothalamus. Everyday, this endogenous rhythm is entrained to the natural light-dark rhythm by light exposure. Insufficient or badly timed light exposure can disrupt the circadian rhythm, and result in sleep problems and mood complaints. The current symposium will focus on sleep- and mood problems and light as treatment option in adults with ADHD.

First, we present results of a study on ADHD, sleep chronotype and health outcomes in a large cohort study of Dutch nurses. Second, we will focus on the role of visual functioning in adults with ADHD. As 70% of patients with ADHD show increased photosensitivity, they tend to protect their eyes from light during daytime. This is hypothesized to result in insufficient light exposure necessary to regulate the sleep-wake rhythm. Effects of a single-dose and a 3-week intervention of either light therapy or methylphenidate in adults with ADHD on the visual functioning is determined.

Second, we present the PhASE study, which is based on the evidence that treatment of Delayed Sleep Phase Syndrome might improve both the sleep-wake rhythm as

ADHD symptoms. Women with ADHD have been even more understudied, while exactly their hormonal mood changes and increased severity of ADHD urgently need our research attention. Two studies will be presented that seem to point to increased severity of mood changes and ADHD symptoms during episodes of hormonal changes in women with ADHD. During this talk, the findings and their etiological background will be clarified, such as the interaction between the sex hormones estrogen and progesterone with dopamine and other neurotransmitters in the brain.

Learning Objective 1: The participant shall be able to analyze the relationship between light exposure, sleep, mood in adult ADHD.

Learning Objective 2: The participant shall be able to describe the relationship between hormonal changes in women with ADHD and mood during the menstrual cycle.

12. Can Genetic Underpinnings Inform Clinical Practice?

Chair: Joseph Biederman, Massachusetts General Hospital

12.1 Improved Machine Learning Prediction of ADHD Using Gene Set Polygenic Risk Scores & from Other Correlated Disorders

Stephen Faraone, SUNY Upstate Medical University

12.2 Can Polygenic Risk Scores Help Identify Pediatric Bipolar Spectrum & Related Disorders? A Literature Review

Joseph Biederman, Massachusetts General Hospital

12.3 Can Pediatric Mood Disorders Be Predicted from Transdiagnostic Polygenic Risk Scores in Children and Adolescents?

Maura DiSalvo, Massachusetts General Hospital

Overall Abstract: Hypothesis/Objective: To assess the role of genetic risk factors in common pediatric psychiatric disorders.

Methods: Polygenic risk scores analysis, review of the literature and machine learning approaches were used to examine the contributions of genes to the pathophysiology of common disorders.

Results: Findings reveal that genes contribute significantly to the risk of mood disorders, ADHD and ASD.

Conclusions: Research on genetic contributions to common pediatric psychiatric disorders should be expanded

Learning Objective 1: The audience will learn about genetic underpinnings of common disorders.

Learning Objective 2: The audience will learn about the role of machine learning approaches to improve prediction.

13. Opioid Pandemic

Chair: Frances Levin, Columbia University Irving Medical Center

13.1 The Opioid Crisis Enters the 4th Wave of Rising Psychostimulant-Involved Deaths

Arthur Robin Williams, Columbia University/New York State Psychiatry

13.2 Treatment of ADHD in the Context of the Drug Overdose Epidemic

Amy Yule, Boston University/Boston Medical Center

13.3 Stimulant Prescriptions, Buprenorphine, and Drug-Related Poisoning Risk among Persons with Opioid Use Disorder

Carrie Mintz, Washington University School of Medicine

Overall Abstract: ADHD is a neurodevelopmental disorder that responds well to pharmacologic interventions. However, it remains unclear if treating ADHD worsens or reduces the risk of drug overdoses and overdose deaths. Given that the national drug overdose death rate has worsened in the setting of COVID and continues to be a tragic public health crisis, it is critical that treating clinicians understand the nature of the crisis, the current interventions that are available to mitigate overdose deaths and how ADHD treatment may play a role in this. Dr. Williams will discuss the current epidemiologic data as it relates to opioid overdose and overdose death rates and strategies to reduce these rates. Focus will be placed on harm reduction strategies as well as evidence-based interventions. Dr. Carrie Mintz will present her team's findings using claims data collected over a 10-year period on associations between prescription stimulant use and drug poisonings and retention in treatment among those being treated with buprenorphine for their opioid use disorder. Dr. Yule will provide data regarding the impact of treating ADHD in the setting of opioid and other drug use and strategies for mitigating risk of misuse and abuse of the prescription stimulants as well as overdoses. Lastly, Dr. Levin will serve as a discussant and lead the question and answer component of the session.

Learning Objective 1: Learn how the Opioid Use Disorder (OUD) Cascade of Care framework may be utilized to structure local and national efforts to combat the opioid overdose epidemic.

Learning Objective 2: Gain awareness of the associations between prescription stimulant use, drug poisoning and retention for those receiving buprenorphine for OUD.

Learning Objective 3: Be aware of prevalence of opioid use disorder among those with ADHD and implications for treatment.

Learning Objective 4: Learn treatment strategies to treat individuals with opioid use disorder and ADHD.

Industry Sponsored Symposia - Corium

2:30 p.m. - 3:30 p.m.

14. Innovation in ADHD Symptom Coverage

Chair: Ann Childress, Center for Psychiatry and Behavioral Medicine, Inc.

Presenters:

Andrew Cutler, Neuroscience Education Institute

Theresa Cerulli, Beth Israel Deaconess Med Ctr

Overall Abstract: Join Dr. Andrew J Cutler and Dr. Theresa Cerulli for a discussion on a novel approach to pediatric ADHD symptom coverage. This symposium introduces Corium's novel, once-daily prodrug that helps provide ADHD symptom coverage throughout the day. Attendees will gain an understanding of the clinical trial data first-hand from experienced psychiatrists, with the ability to ask questions along the way. Join the discussion sponsored by Corium to learn more about this innovative treatment option!

Learning Objective 1: Assess and understand the impact of ADHD on patients and their families.

Learning Objective 2: Review prodrug technology, key product components, and pharmacokinetic profile.

Learning Objective 3: Evaluate pivotal and long-term trial data, including key endpoints and ADHD rating scales.

Learning Objective 4: Understand the unique dosing, administration and titration.

Plenary 4: ADHD in Girls and Women: Historical Perspectives, Current Realities

4:00 p.m. - 5:30 p.m.

15. ADHD in Girls and Women: Historical Perspectives, Current Realities

Chair: Jeffrey Newcorn, Mount Sinai Medical Center

15.1 ADHD in Girls and Women: Historical Perspectives, Current Realities

Stephen Hinshaw, University of California, Berkeley

Panelists:

Andrea Chronis-Tuscano, University of Maryland

Ellen Littman, Private practice

Overall Abstract: This session will review key issues related to the clinical presentation and longitudinal course of ADHD in females, highlighting important aspects of this condition as it presents in females that are often under-appreciated. Dr. Hinshaw is one of the most respected researchers in the ADHD field, who has led a highly influential longitudinal study on ADHD in females. The two panelists, Dr.

Littman and Dr. Chronis-Toscano, are widely known for their work on ADHD in females and within families; they are also the co-chairs of the APSARD Special Interest Group on ADHD in Women. The session will begin with Dr. Hinshaw's plenary address, after which the two panelists will provide expert commentary. Dr. Newcorn, as chair, will moderate the discussion among the presenters and with the audience.

Learning Objective 1: To understand the clinical presentation and longitudinal course of ADHD in females.

Learning Objective 2: To appreciate some of the reasons that the unique aspects of ADHD as it presents in girls and women has received little attention.

Concurrent Symposia

5:45 p.m. - 7:15 p.m.

16. Unrecognized ADHD as a Driver of Treatment Resistance: How to Manage Comorbid Cases in Your Practice

Chair: Geneva Mason, START Clinic for Mood and Anxiety Disorders

16.1 Under- Misdiagnosed ADHD in Adults with Treatment-Resistant Mood & Anxiety Disorders: Prevalence & Clinical Impact

Tia Sternat, START Clinic for Mood and Anxiety Disorders

16.2 Best Practices for Comorbid Presentations: A Case Study of Comorbid ADHD and Anxiety Disorders

Irvin Epstein, START Clinic for Mood and Anxiety Disorders

16.3 Best Practices for Comorbid Presentations: A Case Study of ADHD, MDD and PTSD

Martin Katzman, START Clinic for Mood and Anxiety Disorders

16.4 Treating Mood and Anxiety Disorders with Premorbid ADHD: A CBT Perspective

Kathryn Fotinos, START Clinic for Mood and Anxiety Disorders

Overall Abstract: Although standard treatments for mood and anxiety disorders are SSRIs and SNRIs, poor response and remission rates persist. One reason for the prevalence of treatment resistance in adults with mood and anxiety disorders may be due to altered neural activity stemming from a missed diagnosis of attention-deficit hyperactivity disorder (ADHD), which is highly comorbid with these disorders. As such, it is pivotal to recognize underlying ADHD in this population and how to manage comorbid presentations. Thus, this symposium will discuss the overlapping

neurobiology between ADHD and related disorders, presenting cases to illustrate the management of complex comorbidities.

Several features of ADHD may contribute to the development of mood and anxiety disorders. Executive dysfunction including poor attention and suboptimal planning can compromise performance in school or work. Deficits in reward processing can lead to further stimulation seeking, resulting in disruptive or risky behaviors. These outcomes, accompanied with poor coping strategies, may predispose individuals towards developing mood and anxiety disorders, including trauma.

Beyond predisposing individuals with ADHD to psychiatric comorbidities, altered neural activity may further contribute to treatment-resistance. Dopaminergic deficits diminish the prefrontal cortex's ability to regulate the amygdala, leading to an increased likelihood for hyperactive HPA activity following stressors. This may suggest an altered etiology to mood and anxiety disorders that responds poorly to SSRI and SNRI treatment. This is of particular concern if ADHD is undetected when treating mood and anxiety disorders and represents a subset of the treatment resistant population.

This presentation will highlight the prevalence of undiagnosed ADHD in individuals suffering from "treatment-resistant" mood and anxiety disorders. The neurobiology of comorbid disorders will be reviewed, accompanied by case presentations of comorbid psychiatric illnesses that highlights informed and best practices on complex psychiatric care.

Learning Objective 1: To highlight the prevalence of undetected ADHD as a risk factor of treatment resistance.

Learning Objective 2: To integrate neurobiological literature with everyday patient care.

Learning Objective 3: To review the current understanding of comorbid psychiatric presentations.

17. Healthcare Disparities in the Diagnosis and Management of Youth with ADHD

Chair: Alison Pritchard, Kennedy Krieger Institute

17.1 What's Race Got to Do with It?: Informant Rating Discrepancies in Evaluations for Children with ADHD

Danielle Wexler, Kennedy Krieger Institute/Johns Hopkins University School of Medicine

17.2 Examining Equity in Access to Telehealth Evaluations for Youth with ADHD

Alison Pritchard, Kennedy Krieger Institute

17.3 Contextual Factors that Promote Health Equity in Family Management for Ethnically Diverse Children with ADHD

Cynthia Paidipati, Loyola University Chicago

Overall Abstract: Recent events have highlighted the prevalence and impact of healthcare disparities across race/ethnicities and the spectrum of socioeconomic status. This symposium addresses such disparities in terms of their impact on the diagnosis and management of ADHD in youth. Danielle Wexler will discuss race-based discrepancies in informant symptom ratings and in ADHD diagnosis. Alison Pritchard will examine the differential impact of telehealth on access to diagnostic services for youth with ADHD according to race/ethnicity and socioeconomic status. Cynthia Paidipati will explore contextual factors that serve as barriers to, and facilitators of, families' management of ADHD. This symposium, with a focus on both diagnosis and management of ADHD, will be of interest to professionals across disciplines and will offer data to support culturally-informed practice.

Learning Objective 1: The participant will be able to articulate impacts of race and socioeconomic status on diagnosis and management of ADHD.

Learning Objective 2: The participant will be able to identify culturally responsive approaches to diagnosis and management of ADHD.

18. EEG Biomarkers: The Latest Conclusions

Chair: Sandra Loo, University of California, Los Angeles, UCLA School of Medicine

18.1 Clinical Utility of EEG Biomarkers for ADHD Diagnosis and Treatment

Sandra Loo, University of California, Los Angeles, School of Medicine

18.2 EEG Biomarkers of Co-Occurring Depression in ADHD

Giorgia Michelini, Queen Mary, University of London

18.3 Understanding Alpha Oscillations as a Biomarker in ADHD

Agatha Lenartowicz, University of California Los Angeles

Overall Abstract: Electroencephalography (EEG) has been used to study underlying neural mechanisms and treatment response among individuals with ADHD for over four decades. Arising out of this extensive literature are several EEG markers that have shown consistent association with ADHD diagnosis, cognitive functions, and treatment variables. As a result, some EEG-based devices have received FDA marketing clearance, while others remain more experimental. Thus, the goal of this presentation is to critically examine the scientific literature regarding the clinical utility of EEG biomarkers in ADHD diagnosis and treatments.

Methods: First, we review of the scientific literature coupled with results from EEG studies conducted in my lab to address whether EEG can be used clinically for ADHD diagnosis. Published studies on the Theta to Beta ratio (TBR) will be summarized for clinical recommendations. Second, the TBR has been the basis for the many of EEG biofeedback protocols in the treatment of ADHD. The latest findings from the largest

and most methodologically sound randomized clinical trial (RCT) of EEG biofeedback will be presented and discussed. Finally, data on EEG correlates and predictors of response to medication and novel non-pharmacological treatments will be presented. Information regarding how EEG biomarkers are associated with treatment-related behavioral and cognitive improvements will be discussed.

Results: The empirical findings regarding the TBR in ADHD are equivocal. A higher TBR is characteristic of approximately 1/3 of individuals with ADHD, but there is no one EEG profile that is specific to children with ADHD. The latest research on EEG biofeedback suggests that this treatment results in approximately the same amount of clinical improvement in ADHD symptoms as a sham (or placebo) control, acutely and after 1-year follow-up. Finally, EEG correlates and predictors to TNS will be presented and discussed. EEG biomarkers in the mid-frontal region were significantly predictive of treatment response to medications and to TNS.

Conclusions: The empirical support for the clinical utility of EEG is complex and should be fully understood before clinical use. Aggregating information from clinical evaluations and brain biomarkers may aid personalized treatment decisions in child psychiatry, however, replication is needed before clinical use is recommended.

Learning Objective 1: The participant shall be able to analyze the practice implications of using EEG biomarkers for ADHD diagnosis.

Learning Objective 2: The participant shall be able to analyze the practice implications of using EEG biofeedback and EEG biomarkers of ADHD treatment response.

SUNDAY, JANUARY 16, 2022

Industry Sponsored Symposia - Ironshore

10:30 a.m. - 11:30 a.m.

19. All-Day ADHD Management Without the Need for an Immediate-Release Component or Augmentation

Chair: Bev Incedon, Ironshore Pharmaceuticals and Development Inc.

Presenter:

Andrew Cutler, Neuroscience Education Institute

Overall Abstract: Many people with ADHD struggle with symptoms throughout the day and evening. Most long-acting stimulants are formulated with varying ratios of immediate-release (IR) and extended-release (ER) components, yet some patients still augment these medications with "IR boosters" to achieve a longer duration of effect. A long-acting formulation of methylphenidate has been designed without an IR

component to gradually absorb in the colon. The resulting smooth pharmacokinetic profile and dose-dependent duration of effect can provide all-day symptom coverage without the need for IR augmentation.

Learn more about how to achieve all-day ADHD management without the need for an IR component or augmentation.

Concurrent Symposia

12:00 p.m. - 1:30 p.m.

20. Can Subtypes of Mood Disturbances Be Identified?

Chair: Joseph Biederman, Massachusetts General Hospital

20.1 Operationalizing Deficient Emotional Self-Regulation in Newly Referred Adults with ADHD: An Roc Curve Analysis

Joseph Biederman, Massachusetts General Hospital

20.2 The Morbidity of Subsyndromal Depression and It's Predictive Utility of Full Depression

Mai Uchida, Massachusetts General Hospital

20. 3 Disentangling the Heterogeneity of Emotional Dysregulation in Referred Youth Using the Child Behavior Checklist

Maura DiSalvo, Massachusetts General Hospital

Overall Abstract: To evaluate the utility of simple to use assessment methods to aid in the identification of mood dysregulation.

Methods: Dr. Uchida will present her work examining whether subsyndromal scores on the CBCL-Anxiety/Depression (Anx/Dep) scale at baseline assessment in childhood predict the subsequent development of MDD 10 years later. Ms. DiSalvo will present a recent study assessing the utility of the CBCL to help identify meaningful subtypes of emotional dysregulation driving referrals of youth to an outpatient pediatric psychiatry clinic. Dr. Biederman will present findings from a recent study assessing whether the severity of Deficient Emotional Self-Regulation (DESR) levels in ADHD patients can be operationalized and whether they are clinically useful.

Results: In Dr. Uchida's study, children with both subsyndromal scores on the CBCL-Anx/Dep plus a familial risk for MDD were at the highest risk for developing MDD (and not bipolar disorder) at the 10-year follow-up. In Ms. DiSalvo's analysis, 67% of youth had emotional dysregulation and of these 39% had a positive CBCL-Bipolar (BP) profile, 24% had depression without the BP profile, and 37% had DESR/emotional impulsivity. In Dr. Biederman's study, ADHD patients with high-level

DESR had significantly more severe symptoms of ADHD, executive dysfunction, autistic traits, levels of psychopathology, and worse quality of life compared with those with low-level DESR symptoms.

Conclusions: Subsyndromal scores of the CBCL-Anx/Dep scale assessed in childhood can help identify those at high risk for the developing of MDD 10 years later, particularly in children at high risk for depression. Considering the easy-to-use nature of the CBCL, it can aid in the identification of meaningful subtypes of emotional dysregulation affecting youth seeking mental health services. High levels of symptoms of DESR are common in ADHD and when present represent a burdensome source of added morbidity and disability worthy of further clinical and scientific attention.

Learning Objective 1: The audience will learn about ways to identify subtypes of mood disorders in children.

Learning Objective 2: The audience will learn about approaches to identify deficient emotional self-regulation.

21. Consulting Effectively with Pediatricians and Other Primary Care Providers

Chair: Douglas Russell, University of Washington / Seattle Children's

21.1 The Pediatric Perspective on Effective Collaboration with Psychiatrists

Tanya Froehlich, Cincinnati Children's Hospital Medical Center

21.2 Collaborative Care Models for Management of ADHD

Sheryl Morelli, Seattle Children's Care Network

Overall Abstract: ADHD affects an estimated 7.2% of children. Due to the shortage of child and adolescent psychiatrists and other mental health professionals in the U.S., the burden of diagnosis and treatment is increasingly falling on pediatricians and other primary care providers. The demand for effective collaboration with the mental health professions is strong. Several collaborative and integrated care models have demonstrated effectiveness, but there is opportunity for innovation. We will review existing evidence-based collaborative and integrated care models, outline elements of effective psychiatry – pediatrics collaboration and discuss specific implications for the treatment of ADHD.

Methods: Sheryl Morelli, MD, will review collaborative and integrated care models which have demonstrated effectiveness and share information about her own efforts to expand collaborative mental health initiatives in Seattle. Tanya Froehlich, MD, will present elements of an effective ADHD treatment collaboration from the perspective of a pediatrician. Douglas Russell, MD, will review key elements of effective collaboration from the psychiatrist's perspective informed by his experience at Seattle Children's Partnership Access Line and UW's Behavioral Health Integration Program.

Results: Collaborative and integrated care strategies can enhance evidence-based treatment of ADHD and other mental health conditions in the pediatric medical home. Accessibility, timeliness, precision and attention to co-morbid conditions are all important elements of successful psychiatry-pediatrics collaborations. Successful models also tend to incorporate population-based, measurement-based and evidence-based treatment approaches.

Conclusions: Limited access to psychiatric care for children with ADHD has highlighted the need for effective collaborative care partnerships with the pediatric primary care. There is evidence to support a variety of models but bringing these to scale remains challenging. Identifying common elements of successful pediatrics-psychiatry collaborative efforts could enhance diagnosis and treatment of ADHD in the medical home and serve as a foundation for broader efforts at prevention and health promotion for ADHD multiplex families.

Learning Objective 1: Review established collaborative and integrated care models.

Learning Objective 2: Identify common elements of successful pediatric-psychiatry collaboration in ADHD.

Learning Objective 3: Explore ways to enhance ADHD diagnosis and treatment in the pediatric medical home.

Closing Plenary: Recent Developments on Long Term Outcomes in ADHD

1:40 p.m. - 2:40 p.m.

22. Recent Developments on Long Term Outcomes in ADHD

Chair: Stephen Faraone, SUNY Upstate Medical University

22.1 Ongoing Developments in Long Term Outcomes in ADHD

Margaret Sibley, University of Washington

Panelists:

Stephen Faraone, SUNY Upstate Medical University

Brooke Molina, University of Pittsburgh

Joseph Biederman, Massachusetts General Hospital

Overall Abstract: In this plenary session, Dr. Margaret Sibley will present results from the follow-up study of the Multimodal Treatment Study of ADHD with a focus on implications for estimates of the persistence of ADHD into adulthood. Her presentation will be followed by a panel discussion among Drs. Stephen Faraone, Brooke Molina and Joseph Biederman. The panel will discuss how to view those results in the context of prior work and will give their views on the implications for clinical practice.

Learning Objective 1: Understand what the scientific literature tells us about the persistence of ADHD into adulthood.

Learning Objective 2: Understand if and how the MTA results should change the prevailing view of ADHD's persistence.

Concurrent Symposia

3:00 p.m. - 4:30 p.m.

23. Novel Behavioral Intervention Approaches for Adolescents with ADHD

Chair: Rosanna Breaux, Virginia Polytechnic Institute and State University

23.1 Borderline Personality Features Moderate the Effects of Behavioral Treatment for Girls with ADHD

Dara Babinski, Penn State College of Medicine

23.2 Pilot Study of a Behavioral Intervention Targeting Emotion Dysregulation & Family Conflict in Adolescents with ADHD

Rosanna Breaux, Virginia Polytechnic Institute and State University

23.3 Impact of a Behavioral Sleep Intervention in Adolescents with ADHD: Initial Effectiveness from a Pilot Open Trial

Stephen Becker, Cincinnati Children's Hospital Medical Center

Overall Abstract: A systematic review conducted by Evans, Owens, Wymbs, and Ray in 2018 found that the only well-established behavioral intervention for adolescents with attention-deficit/hyperactivity disorder (ADHD) was organizational training (i.e., interventions that target the academic and homework difficulties among adolescents with ADHD), with behavioral parent training being possibly efficacious in this developmental period. However, such behavioral interventions do not address the high levels of social impairments, emotion dysregulation, and sleep difficulty present among adolescents with ADHD (e.g., Bunford, 2019; McQuade, 2019; Mulraney et al., 2019). As such, novel behavioral intervention approaches are needed to address these difficulties in this at-risk population.

This symposium will highlight three such efforts. First, Dr. Dara Babinski will present her research on a social skills and behavioral parent training intervention for families of girls with ADHD, and the moderating role of borderline personality disorder features in predicting treatment completion and treatment outcomes. Second, Dr. Rosanna Breaux will present her research on the feasibility and efficacy of an in person and telehealth format of a behavioral intervention targeting adolescent emotion dysregulation, parent emotion socialization, and family conflict among families of adolescents with ADHD. Finally, Dr. Stephen Becker will present his research on a recently completed pilot open trial to evaluate the feasibility, acceptability, and preliminary efficacy of a behavioral sleep intervention in adolescents with ADHD and co-occurring sleep problems. Together these three talks provide promising preliminary evidence for novel intervention approaches to address

the common social-emotional and sleep difficulties present in adolescents with ADHD.

Learning Objective 1: The participant should be able to identify common social-emotional and sleep difficulties present in adolescents with ADHD.

Learning Objective 2: The participant shall be able to identify intervention approaches to address social difficulties among girls with ADHD, and understand the role borderline personality disorder features may have for treatment outcomes.

Learning Objective 3: The participant will be able to identify and access a brief, behavioral intervention targeting adolescent emotion dysregulation and family conflict among families of adolescents with ADHD that can be implemented in person or via telehealth, and understand the benefits of each approach.

Learning Objective 4: The participants should be able to communicate the impact a behavioral sleep intervention for adolescents with ADHD has for mental health and executive functioning outcomes.

24. Adapting Evaluation and Treatment of ADHD for High IQ Kids and Adults on the Autism Spectrum

Chair: Thomas Brown, Brown Clinic for Attention and Related Disorders

24.1 ADHD, High IQ and ASD: Phenomenology and Diagnostic Considerations

Kevin Antshel, Syracuse University

24.2 Evaluation and Treatment Adaptations for High IQ Children and Adults with both ADHD and Autism Spectrum

Thomas Brown, Brown Clinic for Attention and Related Disorders

24.3 Selection and "Fine-Tuning" of Medications for Patients on the Autism Spectrum with ADHD

Ryan Kennedy, Brown Clinic for Attention and Related Disorders

24.4 Supporting Families of High IQ Children and Adolescents on the Autism Spectrum with ADHD

Elaine Taylor-Klaus, ImpactParents.com

Overall Abstract: CDC estimates indicate that 1 in 54 children in the U.S. is diagnosed as being on the Autism Spectrum. While most on that spectrum suffer from intellectual disability or borderline cognitive abilities, 44% on this spectrum have average or above average IQ. Those with relatively high IQ face many unique challenges in their schooling, social interactions, and employment. Moreover, about 3/4 of clinically referred persons with Autism Spectrum Disorder (ASD) also suffer from significant ADHD-related impairments.

Objective of this symposium is to provide clinicians with information and strategies to improve clinical understanding, treatment, and support for patients with ADHD/ASD and their families.

Methods will include lectures including relevant research data, a variety of case examples and outcomes from various treatments utilized with high IQ patients with ADHD/ASD and their families. Conclusions will report numerous successes and some failures in such treatments.

Proposed symposium will include:

1. Review of similarities and differences between ADHD and ASD: review of recent research on genetic heritability as well as quantitative and qualitative similarities and differences.
2. Adaptations of evaluation and treatment for higher IQ children, adolescents, and adults with both ADHD and ASD. Case examples will be used to highlight strengths and difficulties of those with high IQ as well as adaptations to help assessment and to sustain effective treatment for executive functions related to ADHD.
3. Selection and "fine-tuning" of medications for those with relatively high IQ and ASD. Emphasis will be on "sensitive body chemistry" found in many with combined ADHD/ASD and with examples of dosing strategies and adaptations for medication treatment of ADHD and related comorbidities.
4. Strategies to Support Families of High IQ Children and adolescents with ADHD/ASD. Case vignettes of strategies for addressing family dynamics and transitions related to school and parent-child and sibling conflicts in daily life.

Learning Objective 1: Participants should be able to describe unique challenges of those with combined ADHD/ASD and their families.

Learning Objective 2: Participants should be able to select and "fine-tune" medications for those with ADHD/ASD while adapting for especially sensitive body chemistry.

Learning Objective 3: Participants should be able to suggest effective psychosocial interventions to support parents of those with ADHD/ASD, their parents and other family members.

Learning Objective 4: Participants should be able to describe important similarities and differences between ADDH and Autism Spectrum Disorder.