

CME PSYCHCAST™

DIFFERENTIAL DIAGNOSIS OF ADULT ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: TREATMENT OPTIONS AND COMORBIDITY CONSIDERATIONS

FACULTY

David Goodman, MD
Roger McIntyre, MD, FRCPC
Oscar Bukstein, MD, MPH

CME COURSE DIRECTOR

James C.-Y. Chou, MD

A related Expert Panel Supplement was published in ***CNS Spectrums*** [*CNS Spectr* 14:7 (Suppl 6)] and ***Primary Psychiatry*** [*Primary Psychiatry* 16:7 (Suppl 5)].

CME]

ABSTRACT

Attention-deficit/hyperactivity disorder (ADHD) in adults occurs at a prevalence rate that is higher than the prevalence of many major psychiatric disorders in adults. Thus, adult patients with ADHD often present with comorbid conditions, each of which alters the course of ADHD, overall treatment recommendations, and symptom response differently. Common ADHD comorbidities include major depressive disorder (MDD), bipolar disorder, and substance use disorders. Algorithms have been developed to aid clinicians in determining which presenting disorder to treat first, and additional studies have helped elucidate which pharmacologic and non-pharmacologic treatments best treat each comorbid disorder without worsening symptoms of another.

In this Expert Panel PsychCast™, David Goodman, MD, discusses the prevalence and diagnostic distinctions between ADHD in adults and depression, including both MDD and dysthymia; Roger McIntyre, MD, FRCPC, reviews the phenomenology, illness progression, and treatment options for patients with ADHD and comorbid bipolar disorder; and Oscar Bukstein, MD, MPH, reviews both background and practical considerations in understanding, evaluating, and treating adults with co-existing substance use disorders and ADHD.



This activity is jointly sponsored by the Mount Sinai School of Medicine and MBL Communications, Inc.

Copyright ©2009 MBL Communications, Inc. 333 Hudson Street, 7th floor, New York, NY 10013.

All rights reserved, including the right of reproduction, in whole or in part, in any form.



cmepsychcast.mblcommunications.com

DIFFERENTIAL DIAGNOSIS OF ADULT ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: TREATMENT OPTIONS AND COMORBIDITY CONSIDERATIONS

Release date: August 15, 2009

Termination date: August 15, 2011

Estimated time to complete this activity: 1 hour

Acknowledgment of Commercial Support

Funding for this activity has been provided by an educational grant from Shire Pharmaceuticals Inc.

Activity Review Information

The activity content has been peer-reviewed and approved by **James C.-Y. Chou, MD**.

Review Date: June 22, 2009.

Faculty Affiliations

David Goodman, MD, is director of the Adult Attention Deficit Disorder Center of Maryland and Suburban Psychiatric Associates in Lutherville, and assistant professor in the Department of Psychiatry and Behavioral Sciences at Johns Hopkins School of Medicine in Maryland.

Roger McIntyre, MD, FRCPC, is associate professor of psychiatry and pharmacology at the University of Toronto, and head of the Mood Disorders Psychopharmacology Unit at the University Health Network in Toronto, Canada.

Oscar Bukstein, MD, MPH, is professor of psychiatry at the Western Psychiatric Institute and Clinic at the University of Pittsburgh School of Medicine in Pennsylvania.

Faculty Disclosure Policy Statement

It is the policy of the Mount Sinai School of Medicine to ensure objectivity, balance, independence, transparency, and scientific rigor in all CME-sponsored educational activities. All faculty participating in the planning or implementation of a sponsored activity are expected to disclose to the audience any relevant financial relationships and to assist in resolving any conflict of interest that may arise from the relationship. Presenters must also make a meaningful disclosure to the audience of their discussions of unlabeled or unapproved drugs or devices. This information will be available as part of the course material.

Faculty Disclosures

Dr. Goodman is a consultant to Eli Lilly, Forest, McNeil, New River, and Shire; is on the speaker's bureaus of Forest, McNeil, Shire, and Wyeth; receives research support from Cephalon, Eli Lilly, Forest, McNeil, New River, and Shire; has received honoraria from Eli Lilly, Forest, McNeil, Shire, and Wyeth; and is an equity shareholder in Wyeth. Dr. Goodman discusses unapproved and or investigational uses of bupropion for the treatment of attention-deficit hyperactivity disorder.

Dr. McIntyre is on the advisory boards of AstraZeneca, Biovail, Bristol-Myers Squibb, Eli Lilly, GlaxoSmithKline, Janssen Ortho, Lundbeck, Organon, Pfizer, Schering-Plough, Shire, and Solvay Wyeth; is on the speaker's bureaus of AstraZeneca, Biovail, Eli Lilly, Janssen Ortho, Lundbeck, and Wyeth; receives grant/research support from Eli Lilly, Janssen Ortho, the National Alliance for Research on Schizophrenia and Depression, Shire, and the Stanley Medical Research Institute; and receives honoraria from AstraZeneca, Bristol-Myers Squibb, and Solvay Wyeth. Dr. McIntyre discusses unapproved and or investigational uses of psychostimulants for the treatment of attention-deficit hyperactivity disorder.

Dr. Bukstein has received research support from Shire. Dr. Bukstein discusses unapproved and or investigational uses of bupropion and modafinil for the treatment of attention-deficit hyperactivity disorder.

CME Course Director James C.-Y. Chou, MD, is associate professor of psychiatry at Mount Sinai School of Medicine. Dr. Chou has received honoraria from AstraZeneca, Bristol-Myers Squibb, Eli Lilly, GlaxoSmithKline, Janssen, and Pfizer.

Learning Objectives

At the completion of this activity, participants should be better able to:

- Predict challenges to diagnosing and managing comorbidities in adults with ADHD
- Assess current evidence relating to treatment efficacy for adults with ADHD and comorbid depression, bipolar disorder, and substance use disorder
- Summarize the evidence related to ADHD and substance use disorder and how to minimize misuse and diversion when treating ADHD patients

Statement of Need and Purpose

Despite treatment, many adults with ADHD remain substantially impaired in their daily functioning and a significant public health need exists to develop better treatment interventions with a special focus on promoting competence and functional improvement. ADHD is a lifelong neurodevelopmental disorder and one of the most common psychiatric disorders both in children and adults, but is consistently underrecognized. Since conditions which are often comorbid with ADHD are also common in the general population, the ability to properly recognize ADHD and its comorbidities is required for psychiatrists and primary care physicians (PCPs) to effectively treat affected patients. As with children with ADHD, adults show functional impairments in multiple domains, often including poor educational performance, occupational problems, and relationship difficulties. The presence of comorbid conditions adds further debility across these different domains of functioning. Management of multiple medical, mental health, and psychosocial problems over time will often be ineffective if ADHD is not adequately managed.

The most effective management should be multi-modal, with patients benefiting from caring professionals with special expertise in ADHD as well as the PCP. For patients with comorbidities, the PCP and mental health professional should be in close communication about treatment decisions; the mental health professional may be in the best position to recommend pharmacotherapy. The PCP has an important role in assuring preventive care and recognizing and treating acute and chronic comorbidities or medical illnesses as they develop over time. Adults' differing patterns of comorbidity and symptom heterogeneity pose new conceptual, diagnostic, and treatment challenges. Education is needed to increase the detection and treatment of comorbid adult ADHD (and its reverse comorbidity) to determine whether effective treatment would reduce the onset, persistence, and severity of disorders that co-occur with adult ADHD.

Target Audience

This activity is designed to meet the educational needs of primary care physicians and psychiatrists.

Accreditation Statement

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the Mount Sinai School of Medicine and MBL Communications, Inc. The Mount Sinai School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.



Mount Sinai
SCHOOL OF
MEDICINE

Credit Designation

The Mount Sinai School of Medicine designates this educational activity for a maximum of 1 *AMA PRA Category 1 Credit™*. Physicians should only claim credit commensurate with the extent of their participation in the activity.

To Receive Credit for this Activity

Listen to this Expert Panel PsychCast™, reflect on the information presented, and complete the CME posttest and evaluation. To obtain credit, you should score 70% or better. Early submission of this posttest is encouraged. Please submit this posttest by August 1, 2011 to be eligible for credit.



ADULT ADHD AND COMORBID DEPRESSIVE DISORDERS: *DIAGNOSTIC CHALLENGES AND TREATMENT OPTIONS*

By David Goodman, MD

SLIDE LIBRARY

SLIDE 1
Comorbidity Rates of Major Depressive Disorder/Dysthymia and Adult ADHD¹

Primary Diagnostic Group

Primary Diagnostic Group	ADHD Rate
Major Depression	18.6%
Dysthymia	12.8%
ADHD in Adults (Major Depression)	9.4%
ADHD in Adults (Dysthymia)	22.6%

ADHD=attention-deficit/hyperactivity disorder.

SLIDE 3
Diagnostic Prioritization for Pharmacotherapy²

Order of Treatment

- Alcohol and substance abuse
- Mood disorders
 - Bipolar disorder and major depressive disorder
- Anxiety disorders
 - Obsessive-compulsive disorder, general anxiety disorder, and panic
- Attention-deficit/hyperactivity disorder

Treatment order also considers severity of the concurrent disorders.

SLIDE 2
Diagnostic Distinctions: MDD vs. Adult ADHD

MDD	Adult ADHD
Primarily a disturbance in mood	Primarily a disturbance in cognition
Sad mood/reduced motivation/negative thoughts/apathy/hopelessness/change in sleep and appetite	Inattention/distractibility/impulsivity/hyperactivity/making careless mistakes/forgetfulness/poor follow through/easily frustrated/interrupting behavior
Episodic	Chronic, pervasive, and impairing
First occurrence typically presents in teens	First symptoms typically presents in childhood
Mood disorders family history	Family history for ADHD

Both disorders may occur concurrently

MDD=major depressive disorder; vs.=versus; ADHD=attention-deficit/hyperactivity disorder.

SLIDE 4
CYP Inhibitory Effects of ADHD Medications²

CYP Isoenzymes

Medication	1A2	2C9	2C19	2D6	3A4
Amphetamine	0	0	0	0	0
Amphetamine	0	0	0	0	0
Atomoxetine	0	0	0	0*	0
Bupropion	?	?	?	+++	?
Desipramine	0	0	0	0	0

* In vivo.
CYP=cytochrome P450; ADHD=attention-deficit/hyperactivity disorder.

References

- Kessler RC, Adler L, Barkley R, et al. The prevalence and correlates of adult ADHD in the United States: results from the National Comorbidity Survey Replication. *Am J Psychiatry*. 2006;163(4):716-723.
- Goodman D. Treatment and assessment of ADHD in adults. In: Biederman J, ed. *ADHD Across the Life Span: From Research to Clinical Practice—An Evidence-Based Understanding*. Hasbrouck Heights, NJ: Veritas Institute for Medical Education; 2006.
- Sauer JM, Long AJ, Ring B, et al. Atomoxetine hydrochloride: clinical drug-drug interaction prediction and outcome. *J Pharmacol Exp Ther*. 2004;308(2):410-418

SLIDE 5
Adherence Rates of ADHD Medications³

ADHD=attention-deficit/hyperactivity disorder; OROS MPH=OROS methylphenidate; MPH LA=methylphenidate hydrochloride extended release; MAS XR=mixed amphetamine salts extended release.



SUBSTANCE USE DISORDERS AND ADHD

By Oscar Bukstein, MD, MPH

SLIDE LIBRARY

SLIDE 1

SUD in ADHD: Clinical Considerations

Is s/he a current drug abuser or past substance user?

- Established period of abstinence
- Ongoing substance abuse treatment

Is there a history of stimulant or amphetamine abuse?

- Reasons for past use: to get work done or to “get high”

SUD=substance use disorder; ADHD=attention-deficit/hyperactivity disorder.

SLIDE 2

SUD in ADHD: Clinical Recommendations

Stimulant use in substance-abusing patients is complex.

- Is the patient reliable?
- Are there family members or close nonsubstance-abusing friends involved in the treatment plan?
- Has patient/family been adequately informed of potential risks involved in using stimulants?

Have other options been tried?

- Atomoxetine, bupropion, desipramine, or modafinil

SUD=substance use disorder; ADHD=attention-deficit/hyperactivity disorder.

SLIDE 3

Safety Concerns Regarding Misuse and Diversion of Stimulants

- Clinician oversight
- Overdose potential
- Use with other stimulants
- Interaction with other non-stimulant drugs
- Users unaware of contraindications and precautions
- Cardiovascular risk due to lack of screening

SLIDE 4

Red Flags for Diversion or Misuse

- Emergencies
- Continued substance abuse evidence
- Demands for immediate-release compounds
- Repeated discordant pill count
- Lost prescriptions
- Continuously escalating doses
- Symptoms of psychosis (bipolar)
- Infrequent user

SLIDE 5

Precautions When Using Medications With Abuse Potential in Substance Abusers With ADHD

- Limit and keep track of pills
- Obtain urine toxicology screens regularly
- Frequent patient visits
- Use of long-acting preparations
- Emphasis to patient to take medications regularly on an as needed basis
- Discussion with patient regarding safe storage and not advertising medications

ADHD=attention-deficit/hyperactivity disorder.

DIFFERENTIAL DIAGNOSIS OF ADULT ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: TREATMENT OPTIONS AND COMORBIDITY CONSIDERATIONS

CME QUESTIONS

- 1. What is the approximate prevalence rate of adult attention-deficit/hyperactivity disorder (ADHD) in patients with acute major depressive disorder (MDD)?**
 - A. 1 in 3
 - B. 1 in 5
 - C. 1 in 10
 - D. 1 in 20
- 2. What factor will not aid in distinguishing MDD and ADHD?**
 - A. Clinical interview for presenting mood and cognitive symptoms
 - B. Family history for depressive disorders or academic struggles
 - C. Age symptoms first occurred
 - D. Previous diagnosis of the disorder
 - E. Cognitive improvement in response to stimulant treatment
- 3. In the treatment with medications for ADHD in patients with comorbid substance use disorder (SUD), which of the following is true:**
 - A. ADHD symptoms are improved
 - B. SUD behaviors are improved
 - C. Both ADHD and SUD are improved
 - D. Side effects were too great to justify treatment
- 4. The Texas Treatment Algorithm has been established for the treatment of ADHD and comorbid psychiatric disorder in children, adolescents and adults.**
 - A. True
 - B. False
- 5. Psychostimulants increase risk of medication switch based on randomized controlled trials with placebo.**
 - A. True
 - B. False
- 6. Regarding the prevalence of ADHD in populations of persons with SUD, which of the following is true:**
 - A. Comorbidity is present in <10% of patients
 - B. Comorbidity is present in >70% of patients
 - C. Comorbidity is present in ~33% of adult patients
 - D. Comorbidity is more common in community populations than in clinical populations
- 7. Which of the following options are not recommended precautions when using medications with abuse potential in substance abusers with ADHD:**
 - A. Limit and keep track of pills
 - B. Obtain urine toxicology screens regularly
 - C. Frequent patient visits
 - D. Use of short-acting preparations
- 8. ADHD is common in bipolar disorder but does not affect course of bipolar disorder illness.**
 - A. True
 - B. False

REGISTRATION

AUGUST 2009 CME POSTTEST



Fax

212-328-0600

Mail

CME Director, MBL Communications
333 Hudson Street, 7th Floor, New York, NY 10013

Web

mbl.cmeoutreach.com

ANSWER FORM

Expert Panel PsychCast™ – Differential Diagnosis of Adult Attention-Deficit/Hyperactivity Disorder:
Treatment Options and Comorbidity Considerations

TERMINATION DATE: August 15, 2011

To receive credit, you should score 70% or better (participants will receive certification for their records in approximately 4–6 weeks). Early submission of this posttest is encouraged. Please submit this test by August 1, 2011, to be eligible for credit. If you have any questions about this, or any of our other CME materials, please e-mail CME@mblcommunications.com

Please circle your answers

1. A B C D 2. A B C D E 3. A B C D 4. A B 5. A B 6. A B C D 7. A B C D 8. A B

EVALUATION SECTION (please provide the information below and print clearly)

1=Minimally, 5=Completely

- Please rate how well this CME activity met the stated learning objectives: 1 2 3 4 5
- Please indicate how well this CME activity met your expectations regarding the following:
 - Translating clinical information/trial data to patients I see in my practice 1 2 3 4 5
 - Providing new information 1 2 3 4 5
 - Increased my knowledge and/or skills in delivering patient care 1 2 3 4 5
 - Communicated information in an effective, accessible manner 1 2 3 4 5
- Compared to other CME activities in which I have participated this year, I would rate this activity as: 1=Needs Improvement, 5=Outstanding
1 2 3 4 5
- As a result of participating in this educational activity, I will (please check one)

Change my practice Seek additional information Confirm my current practice

4a. If "change my practice," please describe: _____
- Did this CME activity provide a balanced, scientifically rigorous presentation of therapeutic options related to the topic without commercial bias and influence? Yes No
5a. If "no," please explain: _____
- Do you feel these topics should be repeated/updated in future CME activities? Yes No
6a. If "yes," what suggestions would you make to improve this activity? _____
- Please indicate your three preferred formats for CME activities:

Print media Internet Multimedia/video Live meeting PDA Podcast
- Please indicate three professional education gaps you would like to be addressed in future CME activities:

Topic 1: _____

Topic 2: _____

Topic 3: _____

Name _____ Degree _____ Affiliation _____

Street _____

City _____ State _____ Zip Code _____

Tel: _____ Fax: _____ Specialty _____

Email _____ Please send certificate via email.

I certify that I completed this CME activity (signature) _____ Date _____

I have completed this activity in _____ hours.