

Continuing Medical Education

You now have an opportunity to earn CME credits by reading articles in *The American Journal of Psychiatry*. Three articles in this issue each comprise a short course for up to 1 hour category 1 CME credit each. The course comprises reading the article and answering three multiple-choice questions with a single correct answer. CME credit is issued only online. Readers who want credit must subscribe to the AJP Continuing Medical Education Course Program (cme.psychiatryonline.org), select *The American Journal of Psychiatry* at that site, take the course(s) of their choosing, complete the evaluation form, and submit their answers for CME credit. In the online course, correct answers will be highlighted for the reader's reference; there is no minimum threshold score necessary for the credit. A link from the question to the correct answer in context will be highlighted in the associated article. A certificate for each course will be generated upon successful completion.

Information for Participants

Objectives: After evaluating a specific journal article, participants should be able to demonstrate an increase in their knowledge of clinical medicine. Participants should be able to understand the contents of a selected research or review article and to apply the new findings to their clinical practice.

Participants: This program is designed for all psychiatrists in clinical practice, residents in Graduate Medical Education programs, medical students interested in psychiatry, and other physicians who wish to advance their current knowledge of clinical medicine.

Explanation of How Physicians Can Participate and Earn Credit: In order to earn CME credit, subscribers should read through the material presented in the article. After reading the article, complete the CME quiz online at cme.psychiatryonline.org and submit your evaluation and study hours (up to 1 AMA PRA Category 1 Credit™).

Credits: The American Psychiatric Association 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. The American Psychiatric Association is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education (CME) for physicians.

Information on Courses

Title: Schizophrenia in a Patient With Spinocerebellar Ataxia 2: Coincidence of Two Disorders or a Neurodegenerative Disease Presenting With Psychosis?

Faculty: Matthew Rottnek, M.D., Silvana Riggio, M.D., William Byne, M.D., Ph.D., Mary Sano, Ph.D., Russell L. Margolis, M.D., Ruth H. Walker, M.B.Ch.B., Ph.D.

Affiliations: Department of Neurology and the Department of Psychiatry, Mount Sinai School of Medicine, New York (M.R., S.R., W.B., M.S., R.H.W.); the Department of Psychiatry and Program in Cellular and Molecular Medicine, Johns Hopkins University School of Medicine, Baltimore (R.L.M.).

Disclosures: Dr. Margolis is a consultant for AstraZeneca and receives research support from Amaron and Forest. Dr. Sano is a consultant/advisor for Aventis, Bayer, Forest, GlaxoSmithKline, Janssen, Martek, Medivation, Novartis, Pfizer, Bristol-Myers Squibb, Ortho McNeil, Takeda, Voyager, Esai, and Elan. The remaining authors report no competing interests.

Discussion of unapproved or investigational use of products*: None

Title: Association of Dorsolateral Prefrontal Cortex Dysfunction With Disrupted Coordinated Brain Activity in Schizophrenia: Relationship With Impaired Cognition, Behavioral Disorganization, and Global Function

Faculty: Jong H. Yoon, M.D., Michael J. Minzenberg, M.D., Stefan Ursu, M.D., Ph.D., Ryan Walters, B.A., Carter Wendelken, Ph.D., J. Daniel Ragland, Ph.D., Cameron S. Carter, M.D.

Affiliation: Department of Psychiatry and Imaging Research Center, UC Davis School of Medicine.

Disclosures: Dr. Minzenberg is a shareholder with Elan Pharmaceuticals. Dr. Carter has served as a consultant to Pfizer, Hoffman La Roche, and Eli Lilly. Drs. Yoon, Ursu, Wendelken, and Ragland and Mr. Walters report no competing interests.

Discussion of unapproved or investigational use of products*: None

Title: Selective Muscarinic Receptor Agonist Xanomeline as a Novel Treatment Approach for Schizophrenia

Faculty: Anantha Shekhar, M.D., Ph.D., William Z. Potter, M.D., Ph.D., Jeffrey Lightfoot, Ph.D., John Lienemann, Sanjay Dubé, M.D., Craig Mallinckrodt, Ph.D., Frank P. Bymaster, M.Sc., David L. McKinzie, Ph.D., Christian C. Felder, Ph.D.

Affiliations: Department of Psychiatry, Indiana University School of Medicine (A.S., J. Lightfoot); Merck Research Laboratories, New Wales, Pa. (W.Z.P.); and the Neuroscience Division, Eli Lilly Research Laboratories, Indianapolis (J. Lienemann, S.D., C.M., F.P.B., D.L.M., C.C.F.).

Disclosures: Dr. Shekhar has received grant support from NIH, Eli Lilly, Lundbeck, Organon, Pfizer, GlaxoSmithKline, Johnson & Johnson, Bristol-Myers Squibb, and Wyeth. Dr. Potter is an employee of Merck. Drs. Dubé, Felder, and McKinzie and Mr. Lienneman are employees of Eli Lilly. Dr. Mallinckrodt is an Eli Lilly employee and shareholder. Mr. Bymaster is a consultant, shareholder, and retired employee of Eli Lilly and is an employee of Orexigen Therapeutics. Dr. Lightfoot reports no competing interests.

Discussion of unapproved or investigational use of products*: Yes

* American Psychiatric Association policy requires disclosure by CME authors of unapproved or investigational use of products discussed in CME programs. Off-label use of medications by individual physicians is permitted and common. Decisions about off-label use can be guided by scientific literature and clinical experience.

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Estimated Time to Complete: 1 Hour

Begin date August 1, 2008 – End date July 31, 2010

EXAMINATION QUESTIONS

Select the single best answer for each question below.

Schizophrenia in a Patient With Spinocerebellar Ataxia 2: Coincidence of Two Disorders or a Neurodegenerative Disease Presenting With Psychosis?

Matthew Rottnek et al.

Am J Psychiatry 2008; 165:964-967

QUESTION 1. Spinocerebellar ataxia 2 may manifest with which of the following symptoms?

- A. myoclonus
- B. decreased tendon reflexes
- C. parkinsonism
- D. All of the above.

QUESTION 2. Which of the following neurodegenerative disorders are associated with prominent psychiatric disease?

- A. Huntington's disease
- B. ALS
- C. Chorea-acanthocytosis.
- D. Both a and c.

QUESTION 3. Which of the following suggests a subcortical contribution to dementia?

- A. Psychomotor slowing.
- B. Impaired accuracy in naming objects.
- C. Impaired working memory.
- D. Accuracy during tests of verbal fluency.

EVALUATION QUESTIONS

This evaluation form is adapted from the MedBiquitous Journal-Based Continuing Education Guidelines 28 November 2005. This evaluation will appear online at the end of each CME course. Participants must complete this evaluation in order to receive credit. Select the response which best indicates your reaction to the following statements about this activity.

STATEMENT 1. The activity achieved its stated objectives.

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly disagree

STATEMENT 2. The activity was relevant to my practice.

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Association of Dorsolateral Prefrontal Cortex Dysfunction With Disrupted Coordinated Brain Activity in Schizophrenia: Relationship With Impaired Cognition, Behavioral Disorganization, and Global Function

Jong H. Yoon et al.

Am J Psychiatry 2008; 165:1006-1014

QUESTION 1. In cognitive neuroscience, cognitive control refers to which of the following?

- A. Processes which flexibly regulate thought and action in accordance with current goals
- B. The recognition of previously learned materials during memory testing
- C. Acquisition of associations between rewards and behavioral responses
- D. The recognition of emotional significance of stimuli in environment

QUESTION 2. During normal human cognition the prefrontal cortex is thought to contribute to cognitive control functions through which of the following actions?

- A. Repetition of previously rewarded behaviors
- B. Influencing processing across the brain to optimally support task appropriate behavior treatment compared to placebo
- C. Automatically activating memories related to stimuli in the environment
- D. Creating an ongoing verbal commentary of behavior

QUESTION 3. Pathology in the prefrontal cortex in schizophrenia may be associated with which of the following characteristics?

- A. An absence of detection in adolescent individuals
- B. Alteration in local circuits required for the synchronization of neurons in the gamma range
- C. Ready reversibility through treatment with atypical antipsychotics
- D. A robust correlation with reality distortion symptoms such as hallucinations

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Selective Muscarinic Receptor Agonist Xanomeline as a Novel Treatment Approach for Schizophrenia

Anantha Shekhar et al.

Am J Psychiatry 2008; 165:1033-1039

QUESTION 1. Xanomeline has in vitro selectivity for which of the following receptors?

- A. muscarinic M₁ and M₄
- B. dopamine D₂
- C. muscarinic M₂ and M₄
- D. alpha-1 adrenergic

QUESTION 2. Which of the following side effects were typically reported more frequently in the xanomeline treated subjects compared to those receiving placebo?

- A. headache
- B. fatigue and dizziness
- C. insomnia
- D. gastrointestinal symptoms

QUESTION 3. Xanomeline treatment was associated with statistically significant improvement on which of the following measures?

- A. PANNS Positive Symptom Score
- B. Abnormal Involuntary Movement Scale total score
- C. Clinical Global Impression total score
- D. Brief Psychiatric Rating Scale total score

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