

CME POST-TEST

Selected Endocrine Topics in HIV: Osteoporosis and Adrenal Insufficiency

AUTHOR

Todd T. Brown, MD, PhD
Assistant Professor of Medicine
Division of Endocrinology and Metabolism
Johns Hopkins University School of Medicine
Baltimore, Maryland

COURSE DIRECTOR

James F Braun, DO
Editor-in-Chief, *The PRN Notebook*
Physicians' Research Network, Inc. | New York, New York

Accreditation: This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Medical Society of the State of New York through the joint sponsorship of the New York County Medical Society and the Physicians' Research Network, Inc. The New York County Medical Society is accredited by the Medical Society of the State of New York to provide continuing medical education for physicians.

The New York County Medical Society designates this educational activity for a maximum of 2 *AMA PRA Category 1 credits™* toward the Physician's Recognition Award of the American Medical Association. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Conflict of Interest Policy: The New York County Medical Society and the Physicians' Research Network rely upon invited faculty participants in CME programs to provide educational information that is objective and as free of bias as possible. In this spirit, and in accordance with the guidelines of the program sponsor, faculty participants are expected to indicate any commercial relationship that might be perceived as real or apparent conflict of interest. Although this pilot PRN CME activity has no commercial support, the content of *The PRN Notebook*, upon which

this activity is based, is supported by unrestricted educational grants from BMS Virology, Boehringer Ingelheim Pharmaceuticals, Gilead Sciences, GlaxoSmithKline and Merck & Co.

Financial Disclosure

Author: Dr. Brown discloses the following manufacturers, with whom he has had a personal financial relationship within the last 12 months: Abbott Laboratories (Research; Consultant; Honorarium), Merck (Research; Honorarium), Reliant (Research; Advisor), Theratechnologies (Research), Serono (Consultant).

Course Director: Dr James Braun discloses that he has had no personal financial relationship in the last 12 months with any commercial interest funding this course or any manufacturer of the products or services discussed in this course.

This is a CME pilot program sponsored by the Physicians' Research Network and the New York County Medical Society.

Release Date: December 2007

CME Instructions

To receive documentation of your participation in this CME activity for a total of 2 hours of CME credit, please complete the following steps:

1. Read the article carefully, and
2. Print this CME Posttest document and complete the following sections: (Please print clearly.)
 - I. CME Q&A,
 - II. Posttest Evaluation Survey,
 - III. Credits claimed (maximum of 2) with your signature,
 - IV. Full contact information.
3. Mail pages 2 and 3 of this document with the completed CME Q&A, Posttest Evaluation Survey, credits claimed with signature, and full contact information to:
Physicians' Research Network, Inc.
39 West 19th Street, Sixth Floor
New York, NY 10011
4. This posttest and the evaluation survey must be received by December 31, 2008 for you to be eligible to receive CME credit from the New York County Medical Society (NYCMS).

Osteoporosis Questions

1. A 55-year-old man with well-controlled HIV on combination antiretroviral therapy sustains a fracture to the femoral neck after tripping over a box on his living room floor. Subsequent dual x-ray absorptiometry reveals a total hip t-score of -2.1 and a z-score of -1.6 . Full evaluation for secondary causes is negative. Does this patient have osteoporosis?
 - a. Yes.
 - b. No.
2. A 60-year-old man was found to have a lumbar spine T-score of -2.7 , and a femoral neck t-score of -2.5 . Which one of the following would not be appropriate in the evaluation of secondary causes of osteoporosis?
 - a. Testosterone.
 - b. Magnesium.
 - c. 25 hydroxyvitamin D.
 - d. PTH.
 - e. Phosphate.
3. In the work-up of secondary causes of low bone mineral density, what is the most commonly found abnormality among patients with HIV disease?
 - a. Low testosterone.
 - b. High PTH.
 - c. Low phosphate.
 - d. Low 25 hydroxyvitamin D.
 - e. Low TSH.
4. A healthy 52-year-old man with HIV, which is well controlled since initiation of combination antiretroviral therapy 10 years ago, asks about osteoporosis screening at a recent office visit. He does not smoke, drinks 1 to 3 alcoholic beverages per week, and has no history of steroid exposure, height loss, or hypogonadism. His weight is 162 lb. Should he be offered screening with dual x-ray absorptiometry?
 - a. Yes.
 - b. No.
5. As part of a research study, a 45-year-old man has dual x-ray absorptiometry performed. His lumbar spine T-score is -2.2 and total hip t-score is -2.0 . His CD4 cell count is 450 cells per mm^3 and his viral load is undetectable. He does not have any other clinical risk factors for fracture. Which of the following is the best course of action?
 - a. Reassure patient that he does not require any further evaluation or treatment.
 - b. Initiate an evaluation for secondary causes of osteoporosis, recommend calcium and vitamin D supplementation, and start a bisphosphonate.
 - c. Initiate an evaluation for secondary causes of osteoporosis, recommend calcium and vitamin D supplementation.
 - d. Initiate an evaluation for secondary causes of osteoporosis, recommend calcium and vitamin D supplementation, and repeat DXA in 1 to 2 years.
 - e. Recommend calcium and vitamin D supplementation without other evaluation or treatment.

Adrenal Insufficiency Questions

6. All of the following would be reasons to consider the diagnosis of adrenal insufficiency, except:
 - a. Dizziness when standing.
 - b. Weight loss.
 - c. Unexplained fatigue.
 - d. Diarrhea.
 - e. Hypoglycemia.
7. A patient presents with unexplained fatigue. The diagnosis of adrenal insufficiency is considered. Which of the following is the most appropriate screening measure in an ambulatory patient?
 - a. 8 am serum cortisol.
 - b. 250- μg Cortrosyn stimulation test.
 - c. 1- μg Cortrosyn stimulation test.
 - d. 24-hour urinary free cortisol.
8. Which of the following antiretrovirals is responsible for the increased risk of adrenal suppression with glucocorticoid exposure?
 - a. Tenofovir.
 - b. Efavirenz.
 - c. Ritonavir.
 - d. Abacavir.
 - e. Nevirapine.
9. An HIV-infected patient with unexplained fatigue is found to have an am cortisol of 0.5 μg per dL, with a simultaneous ACTH of 1 pg per mL. He has noticed an increase in weight with facial fullness over the last 6 months. The most likely diagnosis is:
 - a. Primary adrenal insufficiency from infectious causes.
 - b. Primary adrenal insufficiency from autoimmune adrenalitis.
 - c. Secondary adrenal insufficiency from a pituitary adenoma.
 - d. Secondary adrenal insufficiency from glucocorticoid exposure.
10. A patient is found to have a peak stimulation of 7 μg per dL to a 250- μg Cortrosyn stimulation test (normal >18 $\mu\text{g}/\text{dL}$). His ACTH prior to testing is 250 pg per mL (normal = 5–27 pg/mL). His potassium is 5.7 mg per dL and he reports dizziness when standing. In addition to investigating the underlying cause, which of the following would be the most appropriate treatment?
 - a. Prednisone 5 mg qd, fludrocortisone 0.1 mg qd.
 - b. Prednisone 5 mg qd.
 - c. Prednisone 20 mg qd.
 - d. Hydrocortisone 60 mg qd in 2 divided doses, fludrocortisone 0.1 mg qd

Section II: Posttest Evaluation Survey for Selected Endocrine Topics in HIV: Osteoporosis and Adrenal Insufficiency

Please answer the following questions by circling the appropriate rating:

5 = Outstanding 4 = Good 3 = Satisfactory 2 = Fair 1 = Poor

Extent to Which Program Activities Met the Identified Objectives

Upon completion of this activity, participants should be able to:

- | | | | | | |
|---|---|---|---|---|---|
| 1. Understand the pathogenesis and risk factors of reduced bone mineral density in HIV disease. | 5 | 4 | 3 | 2 | 1 |
| 2. Utilize current screening guidelines and treatment recommendations for reduced bone mineral density in HIV. | 5 | 4 | 3 | 2 | 1 |
| 3. Better understand the pathogenesis, diagnosis, and treatment of adrenal insufficiency in HIV infected patients and special considerations in HAART treated patients. | 5 | 4 | 3 | 2 | 1 |

Overall Effectiveness of the Activity

- | | | | | | |
|--|---|---|---|---|---|
| Objectives were related to overall purpose/goal(s) of activity | 5 | 4 | 3 | 2 | 1 |
| Related to my practice needs | 5 | 4 | 3 | 2 | 1 |
| Will influence how I practice | 5 | 4 | 3 | 2 | 1 |
| Will help me improve patient care | 5 | 4 | 3 | 2 | 1 |
| Stimulated my intellectual curiosity | 5 | 4 | 3 | 2 | 1 |
| Overall, the activity met my expectations | 5 | 4 | 3 | 2 | 1 |

Will the information presented cause you to make any changes in your practice? No. Yes.

If yes, please describe any change(s) you plan to make in your practice as a result of this activity.

How committed are you to making these changes?

5 (Very committed) 4 3 2 1 (Not at all committed)

Additional comments about this activity?

Do you feel future activities on this subject matter are necessary and/or important to your practice? No. Yes.

Please list any other topics that would be of interest to you for future educational activities:

Did you find any commercial bias in this CME course?

No. Yes. (If yes, please be specific):

Section III: I certify my actual time spent to complete this educational activity to be _____ hour(s) [not to exceed 2.0 hours].

Signature

Section IV: Required Contact Information

E-mail _____

Last Name _____

First Name _____

Degree

MD DO NP PA PharmD Other _____

Specialty _____

Street Address _____

City _____

State _____

Zip _____

Phone Number _____

Fax Number _____

If you wish to receive credit for this activity, please complete Sections I–IV on pages 2 and 3 and mail to:

Physicians' Research Network, Inc.

39 West 19th Street, Sixth Floor New York, New York 10011

THANK YOU FOR YOUR PARTICIPATION.