Kaplan USMLE Step 3 prep: Shortness of breath in woman with diabetes

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If you’re preparing for the United States Medical Licensing Examination® (USMLE®) Step 3 exam, you might want to know which questions are most often missed by test-prep takers. Check out this example from Kaplan Medical, and read an expert explanation of the answer. Also check out all posts in this series.

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This month’s stumper

A 69-year-old woman with a 15-year history of type 2 diabetes mellitus presents to the emergency department with shortness of breath for two hours. There is no chest pain, diaphoresis, dizziness, or nausea. Past medical history is significant for diabetic foot ulcers. She has been postmenopausal for the past 18 years. Her blood pressure is 125/80 mm Hg, pulse is 70 beats per minute, and respirations are 15 breaths a minute.

On physical examination, there is a third heart sound present, but the rate and rhythm are normal. There are rales at the bilateral lung bases, but there is no wheezing or rhonchi. A chest radiograph reveals a normal mediastinum and a fine interstitial infiltrate with pleural effusions. The next step in evaluating this patient is to:

A. Order a complete blood count.
B. Order an echocardiogram.
C. Order an electrocardiogram.

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D. Perform a stress treadmill test.

E. Send her for pulmonary function tests.

The correct answer is C.

Kaplan Medical explains why

Patients with diabetes are prone to silent ischemia—that is myocardial infarction without chest pain due to neuropathy. Furthermore, some postmenopausal women who are not on hormone replacement therapy are at a higher risk of cardiac disease in comparison to women who take
hormones.

A 2007 study showed women receiving estrogen alone hormone-replacement therapy resulted in fewer events related to coronary heart disease (CHD) if initiated between the ages of 50 and 59 years or within 10 years after menopause. An electrocardiogram is the most important initial test for myocardial infarction. Cardiac enzymes (creatine kinase, troponin) must also be obtained serially to rule out myocardial infarction.

Why the other answers are wrong

Choice A: This patient has no evidence of pneumonia on the chest radiograph. The patient's presentation is not consistent with pneumonia. Acute onset of shortness of breath is not consistent with pneumonia. A complete blood count would be routinely ordered in the work up of ischemia, however.

Choice B: An echocardiogram is necessary for the work up of congestive heart failure, but it is of limited use in evaluating cardiac ischemia. This test may be necessary if an acute myocardial infarction is ruled out.

Choice D: A stress or exercise treadmill test may be necessary to work up cardiac ischemia once an acute myocardial infarction is ruled out.

Choice E: A pulmonary function test will probably be necessary in the future if no cardiac ischemia is detected, and interstitial lung disease is suspected. This test may be necessary to work up cardiac ischemia once an acute myocardial infarction is ruled out.

For more prep questions on USMLE Steps 1, 2 and 3, view other posts in this series.