

# Kaplan USMLE Step 1 prep: 8 stumpers involving senior patients

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Over the years, the AMA has run dozens of example questions from Kaplan Medical. If you're preparing for the United States Medical Licensing Examination<sup>®</sup> (USMLE<sup>®</sup>) Step 1 exam, you might want to know which questions are most often missed by test-prep takers. We've compiled eight cases from Kaplan Medical involving senior patients—those above 65 years old. Each question comes with an expert explanation of the answer. To see more stumpers for the Step 1 exam, you can check out all posts in this series.

The AMA selected Kaplan as a preferred provider to support you in reaching your goal of passing the USMLE<sup>®</sup> or COMLEX-USA<sup>®</sup>. AMA members can save 30% on access to additional study resources, such as Kaplan's Qbank and High-yield courses. Learn more.

Think you can answer these stumpers involving senior patients? Find out now.

## 1 Senior man involved in car accident

A 71-year-old man who is a working attorney is brought to the emergency department 20 minutes after a car crash. Physical examination shows several lacerations to the face and extremities and contusions to the thorax. X-rays of the spine and chest are normal. Noncontrast head CT shows some evidence of minor age-appropriate brain atrophy, but no evidence of bleeding is seen. After admission for overnight observation, he is discharged from the hospital. Three weeks later, he is brought to the emergency department by his wife because of confusion. He is not oriented to time or place and can recall only one out of six objects after three minutes. What is the most likely underlying condition?

2

**Shortness of breath and weight gain**

A 68-year-old woman is brought to the emergency department because of shortness of breath and a 4.5 kg (10 pounds) weight gain over the past two weeks. Her pulse is 105 per minute and blood pressure is 160/84 mm Hg. Physical examination of the neck reveals bilateral jugular venous distension. The abdomen is soft and nontender, but a positive fluid wave is present. The extremities show 2+ bilateral pitting edema. She is admitted to the medicine service for treatment. Intravenous furosemide is administered and diuresis of 5 L of fluid occurs in a relatively short time. What is the explanation for the acid-base abnormality in this patient?

3

**Diagnose a patient in shock**

An 82-year-old man is admitted after being involved in a motor vehicle collision. He has severe chest and abdominal injuries. His head and extremities are only minimally traumatized. He undergoes surgery for a splenic rupture. After eight hours, he becomes hypotensive and febrile, and is intubated because of respiratory failure. He rapidly develops disseminated intravascular coagulation. What is the most likely diagnosis?

4

**What drug worsens severe low back pain?**

A 66-year-old woman comes to the physician because of severe lower back pain. She is otherwise healthy with well-controlled hypertension and hyperlipidemia. She does not drink but has smoked one pack of cigarettes per day for the past 20 years. An X-ray of the lumbar spine shows an anterior wedge compression fracture of L1. Results of dual-energy X-ray absorptiometry scan shows substantially decreased bone density in the region of L3 to S1. Laboratory studies show serum calcium of 9.2 mg/dL, serum phosphorus of 3.7 mg/dL, and serum parathyroid hormone of 42 pg/mL (normal range: 10–60 pg/mL).

5

**Elevation of bone metabolites with osteoblastic lesions**

A 75-year-old man comes to the physician because of nocturia, urinary urgency and a feeling that he cannot completely empty his bladder. He voids six times per day and four times per night. He has a strong desire to void, and when he reaches the toilet can only void with a weakened stream with straining. Digital rectal examination shows a firm, enlarged prostate measuring approximately 30 grams. Post-void residual by ultrasound is 300 mL. Bone scan shows multiple osteoblastic lesions in the vertebral bodies. Elevation

of which of bone metabolites is most strongly associated with these lesions?

### **6 Older man has fatigue, night sweats**

A 68-year-old man comes to the physician because of fatigue and night sweats. His temperature is 37.6 °C (99.6 °F), pulse is 76 beats per minute, respirations are 14 per minute, and blood pressure is 138/88 mm Hg. Physical examination shows generalized lymphadenopathy and hepatosplenomegaly. A peripheral blood smear shows numerous small mature lymphocytes; some cells are fragile and ruptured. Which markers are most likely present on the abnormal cells?

### **7 Abnormality on contrast-enhanced chest CT**

A 66-year-old man is brought to the emergency department after recent discharge following a Whipple's procedure for pancreatic cancer performed seven days prior. He has a six-hour history of worsening shortness of breath and sudden onset chest pain. He is given oxygen supplementation, which moderately improves his saturation. A contrast-enhanced CT scan of the chest is shown. Which of the following is the most likely origin of the abnormality seen on CT?

### **8 Persistent left shoulder pain, diaphoresis**

A 75-year-old man comes to the emergency department because of persistent left shoulder pain and diaphoresis. He reports that he has had similar symptoms over the last few months, but that they typically resolved with rest. His medical history includes type 2 diabetes and hypertension. His pulse is 115 per minute, respirations are 20 per minute, blood pressure is 150/80 mmHg, and O<sub>2</sub> saturation is 92%. What describes the most likely changes in left ventricular end-diastolic volume and left ventricular end-systolic volume after administration of this drug?

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