USMLE Step 1 prep: Test yourself against these all-time stumpers

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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® (USMLE®) Step 1 exam, you might want to know which questions are most often missed by test-prep takers.

As students reach the final phases of their Step 1 prep, we’ve compiled a list of the top five most-read Step 1 stumpers. You can also check out all posts in this series.

1 What nutrient is elevating blood pressure?
A 38-year-old woman comes to the physician for a routine health maintenance examination. She has two children and no significant medical history. She has had no major changes in her health over the past year, but she has started a new role in her career as a lawyer and has been much busier than in the past. She describes frustration with the lack of time to exercise and prepare healthy meals, and she has been eating fast food more often than she would like.

She has additionally started drinking multiple sodas during the day to keep up with her workload. Her blood pressure, as measured in the physician office, is 133/97 mm Hg, elevated from her previous readings. Her weight has remained stable at 62 kg (137 pounds) and her body mass index is 27 kg/m².

2 Patient has sudden jerking movements in arms
A 34-year-old man comes to the physician’s office because of a one-month history of sudden, involuntary, intermittent jerking movements of both arms. The patient has no prior medical history. He is adopted and does not know his family history. His temperature is 36.9 °C (98.4 °F), pulse is 80 beats a minute, respirations are 20 breaths per minute, and blood pressure is 127/82 mm Hg.

Physical examination shows sudden involuntary twitch-like, purposeless movements in his limbs that seem to travel from one group of muscles to the next, interspersed with intermittent, slow, writhing movements. His neurologist diagnoses him with a condition that leads to loss of GABAergic neurons in the basal ganglia. What condition most likely has a similar pathogenesis to this patient’s diagnosis?

3 Woman with lesion on her neck
A 35-year-old woman comes to the physician because of a lesion on her neck. The lesion has expanded significantly over the last few months. She reports no other symptoms. Her past medical history is unremarkable. Excisional biopsy of the lesion demonstrates locally invasive neoplastic cells with large nuclei, atypical mitoses and abundant lymphocytes.

The lesion stains positive for HMB45 and S-100 on immunohistochemistry. What factor associated with the lesion is most predictive of the patient’s long-term survival?

4 Flank pain in patient with sickle cell disease
A 25-year-old man with sickle cell disease comes to the emergency department because of a one-day history of sharp left flank pain associated with nausea and vomiting. Three days ago, he began seeing blood in the urine without symptoms of pain or fever. He does not have a history of significant kidney disease. His temperature is 37.2 °C (99.0 °F), pulse is 110 beats per minute, respirations are 20 breaths per minute, and blood pressure is 140/95 mm Hg.

Physical examination shows a young man in distress from pain and left costovertebral angle tenderness. The remainder of the physical examination shows no abnormalities. Laboratory studies show hemoglobin 8.5 g/dL, hematocrit 23.5%, leukocyte count 9,000/mm³, platelet count 300,000 mm³, serum urea nitrogen 36 mg/dL and serum creatinine 1.8 mg/dL. Urinalysis shows 4+ blood, trace protein, and negative leukocyte esterase and nitrite. A CT scan of the abdomen and pelvis is ordered. What is the most
likely cause of this patient's symptoms?

5 What’s the half-life of this investigational drug?
During an investigational study, the pharmacokinetics of a newly synthesized drug are studied in healthy volunteers. The volume of distribution and clearance determined in the first volunteer are 40 L and 2.0 L/hour, respectively. What is the most likely half-life of the drug in this volunteer?

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