Sample Hospital Medicine Questions & Critiques

The sample NCCPA questions and critiques are provided to help PAs better understand how exam questions are developed and should be answered for NCCPA's Hospital Medicine CAQ exam.

Question #1

An 82-year-old man who was admitted to the hospital during the night because of shortness of breath and orthopnea is examined during morning rounds. The patient says he has not had chest pain or cough. Medical history includes morbid obesity and long-standing hypertension. Temperature is 36.7°C (98.1°F), pulse rate is 84/min, respirations are 28/min, and blood pressure is 145/68 mmHg. Laboratory findings include the following:

Serum	
Creatine kinase	26 U/L
Creatinine	0.8 mg/dL
Sodium	146 mEq/L
Potassium	3.4 mEq/L
Troponin I	0.01 µg/L
Hemoglobin	14.1 g/dL
White blood cell count	12,000/mm^3

Electrocardiography shows normal sinus rhythm with a rate of 72/min. Chest x-ray study shows minimal basilar Kerley B lines. Which of the following acute conditions is the most likely diagnosis?

(A) Bronchiectasis

(B) Diastolic heart failure

(C) Pneumonia

(D) Pneumothorax

(E) Pulmonary embolism

Content Area: Cardiology (20%)

Critique

This question assesses the examinee's ability to determine the primary diagnosis and differentiate between common causes of dyspnea in patients who are hospitalized. The correct answer is Option (B), diastolic heart failure. The patient's main presenting symptom is orthopnea, which is common in heart failure. He also has hypertension and obesity, which are risk factors for heart failure. In addition, the chest x-ray study finding of Kerley B lines is suggestive of cardiogenic pulmonary edema.

Option (A), bronchiectasis, is incorrect because the primary symptom of this chronic inflammatory lung disease is usually cough, which is not present in the patient described in the question. Also, the acute nature of the complaint and lack of chest x-ray findings in the patient described make the diagnosis of bronchiectasis unlikely. Option (C), pneumonia, is incorrect because although this condition often develops in patients who are hospitalized, the patient described in the question does not have the characteristic symptoms of cough and production of sputum. Additionally, the patient has no signs of systemic infection, such as leukocytosis or fever, and the chest x-ray study findings do not include evidence of infiltrate. Option (D), pneumothorax, is incorrect because this condition typically presents as sudden onset of pleuritic chest pain and can be safely ruled out by chest x-ray study. These characteristics are not presented in the question. Option (E), pulmonary embolism, is a condition that needs to be considered in all patients presenting with dyspnea. However, the patient described in the question has a low Wells Criteria score and the symptoms and findings are more suggestive of diastolic heart failure than pulmonary embolism.

Question #2

A 60-year-old man is admitted to the telemetry unit for management of new onset of paroxysmal atrial fibrillation. During the night, cardiac pauses of five to six seconds are recorded. The patient has no cardiac symptoms; heart rate is 58/min, and blood pressure is 105/60 mmHg. Results of electrocardiography are unchanged. Which of the following is the most appropriate next step?

(A) Administer atropine

(B) Initiate cardioversion using 50-J biphasic current

(C) Measure serum troponin levels

(D) Order transthoracic echocardiography

(E) Place transcutaneous pacing pads at the bedside

Content Area: Cardiology (20%)

Critique

This question assesses the examinee's ability to determine the most appropriate management of patients with bradycardia. The correct answer is Option (E), place transcutaneous pacing pads at the bedside, because intermittent pauses recorded on telemetry are often the precursor to a sustained symptomatic bradycardic event or heart block. Although no management of this rhythm is immediately needed, the rapid availability of transcutaneous pacing is crucial in the patient described if his condition were to worsen.

Option (A), administer atropine, is incorrect because, according to the Advanced Cardiac Life Support (ACLS) guidelines, medication therapy should be reserved for symptomatic bradycardia, including altered mental status, chest pain, and hypotension, which are not present in the patient described. Option (B), initiate cardioversion using 50-J biphasic current, is incorrect because, according to the ACLS guidelines, this intervention is only indicated in the setting of unstable tachycardia. Cardioversion has no indication in management of bradycardia. Option (C), measure serum troponin levels, is incorrect because these laboratory findings are markers of ischemic heart disease, which is not likely to be present in a patient with asymptomatic bradycardia. Also, this additional laboratory testing would increase the cost of care without providing additional patient benefit. Option (D), order transthoracic echocardiography, is incorrect because structural heart disease is a rare cause of the type of arrhythmia present in the patient described in the question. The patient's history provides no evidence that he is at risk for structural heart disease. Although imaging studies may be appropriate in the long-term care of this patient, the most appropriate next step in management of his condition is to avoid the complication of symptomatic bradycardia.

Question #3

A 67-year-old woman who is being treated in the hospital because of sepsis secondary to urinary tract infection had sudden onset of chest pain two hours ago. The pain is exacerbated by inspiration and movement. The patient has not had hemoptysis. She has no history of recent surgery, prolonged periods of immobility, venous thromboembolism, or cancer. Pulse rate is 102/min, respirations are 18/min, and blood pressure is 185/96 mmHg. Oxygen saturation is 94% on room air. The patient is anxious; she is alert and oriented to person, place, and time. Physical examination shows no abnormalities of the heart

and lungs. On laboratory studies, cardiac enzyme levels are within normal limits. Electrocardiography and chest x-ray study show no abnormalities. Based on the Wells Criteria, which of the following best represents the probability of pulmonary embolism in this patient?

(A) Low

(B) Intermediate

(C) High

(D) None

Content Area: Pulmonology (17%)

Critique

This question assesses the examinee's ability to determine risk of disease based on presenting signs and symptoms as well as patient history. The Wells Criteria are used to determine the pretest probability of pulmonary embolism in patients based on history and physical examination. Properly used, the Wells Criteria allow clinicians to determine in which patients further diagnostic and/or invasive testing is needed. The Wells Criteria assign points for presence of signs and symptoms, including tachycardia, hemoptysis, and deep venous thrombosis. Additionally, the Wells Criteria assign points for historical factors, including history of venous thromboembolism, active malignancy, and recent immobilization and surgery. Finally, the Wells Criteria assign points if no other alternative diagnosis is likely. The correct answer to this question is Option (A), low, because the patient described has no historical factors or clinical findings suggestive of pulmonary embolism; her Wells score is 1.5/12.5. Her symptoms could be related to musculoskeletal pain, pleurisy, or anxiety.

Option (B), intermediate, and Option (C), high, are incorrect based on the patient history and presentation and the calculated Wells Criteria score. Option (D), none, is incorrect because the patient's symptoms do correlate with some suspicion of pulmonary embolism.

Question #4

A 50-year-old man is admitted to the hospital because he has had fever, chills, dyspnea, and cough for the past three days. Medical history includes alcohol use disorder (alcohol dependence) and type 2 diabetes mellitus. Temperature is 39.3°C (102.7°F), pulse rate is 98/min, respirations are 24/min, and blood pressure is

136/74 mmHg. The patient appears ill. On physical examination, auscultation of the chest shows diminished breath sounds as well as crackles in the upper lobe of the right lung. Heart rate and rhythm are normal. Dullness to percussion is noted over the upper lobe of the right lung. During the examination, the patient has cough productive of sputum that is bloody and resembles currant jelly. Gram stain of sputum shows gram-negative rods. No other abnormalities are noted. Chest x-ray study shows consolidation in the upper lobe of the right lung and a bulging fissure sign. Which of the following pathogens is the most likely cause of this patient's symptoms?

(A) *Klebsiella pneumoniae*

(B) *Legionella pneumoniae*

(C) *Mycoplasma pneumoniae*

(D) *Staphylococcus aureus*

(E) *Streptococcus pneumoniae*

Content Area: Pulmonology (17%)

Critique

This question tests the examinee's knowledge of history and physical examination findings as well as the ability to interpret findings on chest x-ray studies, laboratory studies, and microbiology. The correct answer is Option (A), Klebsiella pneumoniae, because classic findings of pneumonia caused by this pathogen include the lobar consolidation and currant jelly–like sputum described in the question. Also, Klebsiella pneumoniae is a gram-negative rod, and infection with this pathogen can cause a bulging fissure sign. Because of the patient's history of alcohol use disorder (alcohol dependence), he is at increased risk for this type of pneumonia.

Option (B), Legionella pneumoniae, is incorrect because this pathogen presents on Gram stain as gram-negative bacilli or as no bacterium with a large number of polymorphonuclear leukocytes. Infection with Legionella pneumoniae is more readily diagnosed on the basis of testing of urinary antigens. Option (C), Mycoplasma pneumoniae, is incorrect because this pathogen typically causes an interstitial pneumonia, not a lobar pneumonia, as noted in the patient described. Patients presenting with symptoms consistent with mycoplasmal pneumonia typically have a more mild illness with duration of one to three weeks. Infection with Mycoplasma pneumoniae is more readily diagnosed on the basis of testing of urinary

antigens. Option (D), Staphylococcus aureus, and Option (E), Streptococcus pneumoniae, are incorrect because these pathogens are gram-positive bacteria and the findings in the patient described indicate gram-negative rods.

Question #5

A 48-year-old woman is admitted to the hospital from the emergency department because she has had persistent pain in the right upper quadrant of her abdomen for the past five hours. The pain, which the patient describes as crampy with occasional sharp spasms, began after she ate breakfast. Since the pain began, she also has had nausea and a few episodes of bilious vomiting. The patient is otherwise healthy and takes no medications. Surgical history includes two cesarean deliveries. Temperature is 38.8°C (101.8°F), pulse rate is 110/min, respirations are 24/min, and blood pressure is 95/63 mmHg. Oxygen saturation is 100% on room air. The patient appears ill. On physical examination, auscultation of the chest shows a soft systolic flow murmur. The lungs are clear bilaterally. Examination of the abdomen shows hypoactive bowel sounds and tenderness to percussion and palpation of the right upper quadrant and epigastrium. Rectal examination shows no abnormalities. Laboratory findings include the following:

Serum	
Alanine aminotransferase	405 U/L
Alkaline phosphatase	450 U/L
Aspartate aminotransferase	322 U/L
Total bilirubin	3.2 mg/dL
Creatinine	1.3 mg/dL
Blood urea nitrogen	24 mg/dL
Hematocrit	39%
Hemoglobin	13.0 g/dL
White blood cell count	14,500/mm^3
Platelet count	237,000/mm^3

Review of ultrasonography of the abdomen performed in the emergency department shows thickening of the gallbladder wall and presence of pericolic fluid. The common bile duct is dilated to 14 mm. Which of the following is the most likely diagnosis?

(A) Acute cholecystitis

(B) Ascending cholangitis

(C) Biliary colic

(D) Choledocholithiasis

(E) Small-bowel obstruction due to adhesions

Content Area: Gastroenterology (17%)

Critique

This question assesses the examinee's knowledge and application of physical examination findings, laboratory studies, and ultrasonography of the abdomen to formulate a diagnosis. Option (B), ascending cholangitis, is the correct answer because the physical examination findings and laboratory results described are consistent with this condition, including pain in the right upper quadrant of the abdomen, fever, and hypotension. The laboratory results described in the question demonstrate obstructive biliary disease and systemic infection, which are suggestive of ascending cholangitis.

Option (A), acute cholecystitis, is incorrect because the findings on ultrasonography of the abdomen and laboratory studies suggest location of the stone in the common bile duct, which is not consistent with this condition. Option (C), biliary colic, is incorrect because the patient described does not have the progressive, recurrent, and waxing/waning symptoms that are characteristic of this condition. The patient described is more acutely ill than typically seen in patients with biliary colic. Option (D), choledocholithiasis, is incorrect because although the patient does have evidence of a stone in the common bile duct, addition of the systemic inflammatory response is characteristic of ascending cholangitis. Option (E), small-bowel obstruction due to adhesions, is incorrect because the pain associated with this condition is typically more diffuse than that described in the question. In addition, in patients with small-bowel obstruction, bowel sounds are initially hyperactive instead of hypoactive, and laboratory results indicate a likely hepatobiliary source.

Question #6

A 48-year-old woman who completed a seven-day course of levofloxacin one week ago is admitted to the hospital because she has had watery diarrhea up to 10 times per day as well as malaise and light-headedness during the past 36 hours. Physical examination shows generalized tenderness of the abdomen. CT scan of the abdomen shows pronounced thickening of the colon wall. Which of the following antibiotics is the most appropriate therapy for this patient?

(A) Ciprofloxacin

(B) Clarithromycin

(C) Rifampin

(D) Trimethoprim-sulfamethoxazole

(E) Vancomycin

Content Area: Gastroenterology (17%)

Critique

This question tests the examinee's ability to recognize signs and symptoms on physical examination of the abdomen, interpret CT scan findings, determine the differential diagnosis of diarrhea, and recognize potential complications of antibiotic therapy. The correct answer is Option (E), vancomycin, because oral vancomycin has antimicrobial activity against Clostridium difficile infection and is a recommended first-line antibiotic therapy for this condition.

Option (A), ciprofloxacin, is incorrect because this drug is in the same class as the causative agent in the question (levofloxacin) and because Clostridium difficile infection is an antibiotic-associated illness. Option (B), clarithromycin, and Option (D), trimethoprim-sulfamethoxazole, are incorrect because these medications are potential causes of Clostridium difficile infection and do not have antimicrobial activity against Clostridium difficile. Option (C), rifampin, is a plausible option because this medication is an acceptable treatment option for refractory antibiotic-associated colitis. However, rifampin is not the most appropriate therapy in the patient described.

Question #7

A 32-year-old woman with type 1 diabetes mellitus is recovering in the hospital after undergoing elective cholecystectomy, which was performed without complications. During the first postoperative day, the patient has onset of persistent nausea and vomiting as well as poor oral intake. Because of concern about hypoglycemia, the surgical team withholds her insulin therapy. In the morning of the second postoperative day, the patient has worsening confusion, polyuria, and dehydration. Pulse rate is 115/min, respirations are 28/min and labored, and blood pressure is 95/60 mmHg. Oxygen saturation is 100% on room air. The patient is alert but confused and disoriented. Physical examination shows dry oral mucous membranes. Blood glucose level measured by finger stick at the bedside is greater than 500 mg/dL. Results of laboratory studies, arterial blood gas analysis, electrocardiography, and chest x-ray study are pending. Which of the following is the most appropriate next step in evaluation and management of this patient's condition?

(A) Administer normal saline intravenously with an initial bolus of 20 mL/kg

(B) Contact the patient's primary care provider to obtain a more complete medical history

(C) Order CT scan of the head

(D) Prepare for rapid sequence intubation and mechanical ventilation

(E) Resume insulin therapy with an intravenous bolus of 10 U of regular insulin

Content Area: Endocrinology (8%)

Critique

This question tests the examinee's ability to provide perioperative medical consultation, recognize the signs and symptoms of diabetic ketoacidosis, and provide appropriate initial management of the condition. Option (A), administer normal saline intravenously with an initial bolus of 20 mL/kg, is correct because aggressive rehydration is appropriate to treat the patient described, who has signs of diabetic ketoacidosis, including hyperglycemia, hypotension, dehydration, and altered mental status.

Option (B), contact the patient's primary care provider to obtain a more complete medical history, is incorrect because although this might provide important information, it is not the best option because more immediate intervention is needed. Option (C), order CT scan of the head, is incorrect because the patient's confusion is likely secondary to her hyperglycemia, diabetic ketoacidosis, and cerebral hypoperfusion. Confusion without focal neurologic deficits rarely indicates an underlying brain injury. Option (D), prepare for rapid sequence intubation and mechanical ventilation, is incorrect because the patient described does not have any signs of acute respiratory failure and is able to adequately maintain her airway. Although she has tachypnea and labored breathing, oxygen saturation on room air is normal. Option (E), resume insulin therapy with an intravenous bolus of 10 U of regular insulin, is incorrect because it is not the most appropriate next step. In the patient described, the need for fluid resuscitation based on hypotension and metabolic acidosis supersedes the need to administer an initial dose of insulin.

Question #8

A 58-year-old woman is admitted to the intensive care unit from the emergency department for management of shock. The patient is cachectic. The patient is profoundly confused but responds to pain on abdominal examination. Areas of hyperpigmentation are noted in the skin folds. Laboratory studies show serum glucose level of 55 mg/dL. Which of the following underlying chronic diseases is the most likely cause of crisis in this patient?

(A) Adrenal insufficiency
(B) Chronic kidney disease
(C) Hyponatremia
(D) Hypothyroidism
(E) Pituitary apoplexy

Content Area: Endocrinology (8%)

Critique

This question assesses the examinee's ability to assess physical examination findings, interpret laboratory results, and formulate a diagnosis. The correct answer is Option (A), adrenal insufficiency, because the clinical presentation of confusion, abdominal pain, and hyperpigmentation is most consistent with this condition. Adrenal crisis is common in the intensive care unit setting because of sepsis or stress.

Option (B), chronic kidney disease, is incorrect because acute on chronic kidney disease does not typically present with abdominal pain and hyperpigmentation. Option (C), hyponatremia, is incorrect because although this condition may cause confusion, the other signs and symptoms described in the question are not consistent with this electrolyte disturbance. Adrenal insufficiency can result in hyponatremia, but hyponatremia is not the underlying reason for this crisis. Option (D), hypothyroidism, is plausible because it could cause confusion and abdominal pain but is incorrect because it is not characterized by hyperpigmentation. Option (E), pituitary apoplexy, is incorrect because this condition typically presents with headache and visual changes and does not match the clinical presentation of the patient described.

Question #9

A 32-year-old woman is admitted to the hospital from the emergency department because she has had shortness of breath, dyspnea on exertion, headache, and fatigue for the past five days. The patient is otherwise healthy and takes no medications. Physical examination shows no cardiac, pulmonary, or abdominal abnormalities. Laboratory findings include the following:

Serum	
Alanine aminotransferase	124 U/L
Aspartate aminotransferase	112 U/L
Direct bilirubin	1.9 mg/dL
Creatinine	1.7 mg/dL
Sodium	137 mEq/L
Potassium	3.7 mEq/L
Glucose	102 mg/dL
Lactate dehydrogenase	209 U/L
Hematocrit	32%
Hemoglobin	7.9 g/dL
White blood cell count	13,500/mm^3
Platelet count	65,000/mm^3

Which of the following is the most appropriate next step?

(A) Intravenous antibiotic and fluid therapy

(B) Intravenous corticosteroid therapy

(C) Plasmapheresis

(D) Transfusion of packed red blood cells

(E) Ultrasonography of the abdomen

Content Area: Hematology/Oncology (9%)

Critique

This question assesses the examinee's ability to recognize history, physical examination, and laboratory findings that are consistent with thrombotic thrombocytopenic purpura and determine the appropriate initial management. The correct answer is Option (C), plasmapheresis, because this is the therapy of choice for thrombotic thrombocytopenic purpura.

Option (A), intravenous antibiotic and fluid therapy, is not correct because replacement of fluid alone is not adequate and because there is no clear source of systemic infection to warrant antibiotic therapy. Option (B), intravenous corticosteroid therapy, is incorrect because although this therapy may be used as adjunctive treatment in patients whose condition does not respond to plasma exchange, it is not considered first-line therapy for the patient described. Option (D), transfusion of packed red blood cells, is incorrect because even though the patient's hemoglobin level is low, there is no acute indication for this intervention and it is not a definitive treatment for thrombocytopenia. Option (E), ultrasonography

of the abdomen, is incorrect because the patient's condition warrants immediate initiation of therapy. Although ultrasonography of the abdomen can be helpful in determining underlying disease conditions, it is not the most appropriate next step in the patient described.

Question #10

A 70-year-old man is admitted to the hospital after multiple myeloma was diagnosed. On laboratory studies in this patient, which of the following abnormal findings is most likely?

(A) Decreased platelet count

(B) Decreased serum albumin level

(C) Decreased serum sodium level

(D) Elevated serum calcium level

(E) Elevated serum creatine kinase level

Content Area: Hematology/Oncology (9%)

Critique

This question assesses the examinee's ability to recognize common laboratory findings associated with multiple myeloma. The correct answer is Option (D), elevated serum calcium level, because hypercalcemia is present in as many as 30% of patients with multiple myeloma. Because bones contain large amounts of calcium, the breakdown of bone seen in multiple myeloma can lead to hypercalcemia.

Option (A), decreased platelet count, is incorrect because platelet count is typically not affected by multiple myeloma and would be expected to be within normal limits. Option (B), decreased serum albumin level, is incorrect because the ratio of serum albumin and protein levels can be prognostic for multiple myeloma but is not useful in diagnosing the condition. Option (C), decreased serum sodium level, and Option (E), elevated serum creatine kinase level, are incorrect because although renal failure can be seen in patients with multiple myeloma, resulting in electrolyte abnormalities, it is not the most likely finding.

Question #11

A 58-year-old man with hypertension and hypothyroidism is admitted to the hospital for management of pneumonia. Overnight, urine output increased from 20 to 150 mL/hr. He is not eating or drinking, and

intravenous fluids are being administered at 100 mL/hr. Blood pressure is stable. Which of the following is the most appropriate next step?

(A) Complete metabolic panel in the morning

(B) Matching of the output with hourly intravenous boluses of fluids

(C) Measurement of urine electrolyte level and osmolality

(D) Noncontrast CT scan of the head

(E) Observation and continued monitoring of intake and output

Content Area: Nephrology/Urology (9%)

Critique

This question assesses the examinee's ability to recognize signs and symptoms of syndrome of inappropriate antidiuretic hormone secretion (SIADH) and determine the most appropriate study to confirm the diagnosis. Option (C), measurement of urine electrolyte level and osmolality, is the correct answer because the clinical scenario suggests SIADH, which classically presents with decreased sodium concentration and decreased osmolality of the urine.

Option (A), complete metabolic panel in the morning, is incorrect because although this study is needed, it should be performed immediately and not delayed. Option (B), matching of the output with hourly intravenous boluses of fluids, is incorrect because this is more appropriate for management of hypovolemia than SIADH. Because the patient described is currently being treated with intravenous fluid therapy and his blood pressure is stable, it is unlikely that he has hypovolemia. Option (D), noncontrast CT scan of the head, is incorrect because the patient described does not have neurologic symptoms to suggest an intracranial source of his symptoms. Option (E), observation and continued monitoring of intake and output, is plausible but incorrect because although it is appropriate for monitoring chronically low sodium levels, establishing the diagnosis is most important in the acute setting described in the question.

Question #12

A 69-year-old woman is admitted to the hospital for intravenous analgesic therapy. The patient has had recurrent episodes of severe pain in the left side of her face for the past three weeks that have not

been relieved by outpatient therapy. The pain extends laterally from her left eye to the corner of her mouth, including her upper lip and palate but not crossing the midline. The patient describes the pain as intermittent, shooting, burning, and shocklike; it is triggered and worsened by movement and palpation of the face, swallowing, and talking. The episodes are worse in the morning, typically last from one to seven minutes, and occur more than 30 times per day, both with and without stimulus. The patient has been unable to eat solid foods or drink liquids for the past four days because of the pain and fear of triggering an episode. She has not had fever, rash, vertigo, nausea and vomiting, or problems with weakness or ambulation. On physical examination, pain is elicited with any movement of the face. No other abnormalities are noted. Which of the following is the most likely diagnosis?

(A) Bell palsy

(B) Giant cell arteritis

(C) Meniere disease

(D) Ramsay Hunt syndrome

(E) Trigeminal neuralgia

Content Area: Neurology (9%)

Critique

This question tests the examinee's ability to associate neurologic symptoms of the face and neck with a correct diagnosis. The correct answer is Option (E), trigeminal neuralgia, because the clinical scenario describes the characteristic presentation of this condition, including shooting, burning, and shocklike pain that is triggered by movement. The events are generally episodic and not associated with hearing loss, fever, rash, or other systemic symptoms.

Option (A), Bell palsy, is incorrect because this condition is usually painless and results in more facial paralysis that does not wax and wane. Option (B), giant cell arteritis, is incorrect because this condition is associated with pain in the temporal region rather than pain in the jaw/face in addition to changes in vision. Option (C), Meniere disease, is incorrect because this condition is characterized by intermittent unilateral hearing loss, vertigo, and tinnitus and does not typically present with pain in the face. Option (D), Ramsay Hunt syndrome, is incorrect because patients with this condition typically present with pain in the ear and rash in the ear canal rather than pain in the face.

Question #13

A 77-year-old man was admitted to the hospital 24 hours ago for evaluation of palpitations and dizziness. During morning rounds, the patient has sudden onset of unilateral weakness and slurred speech. Pulse rate is 115/min, and blood pressure is 162/98 mmHg. The patient is alert and oriented but has difficulty speaking. On physical examination, muscle strength on the left side of the body is 2/5. Laboratory studies are ordered in anticipation of administration of recombinant tissue plasminogen activator. This treatment is contraindicated if results of laboratory studies include which of the following findings?

(A) Hematocrit less than or equal to 30%

(B) International normalized ratio less than or equal to 1.5

(C) Platelet count less than 100,000/mm^3

(D) Serum glucose level less than 80 mg/dL

(E) White blood cell count greater than 12,000/mm^3

Content Area: Neurology (9%)

Critique

This question tests the examinee's knowledge and application of exclusion criteria for use of tissue plasminogen activator in patients with acute ischemic stroke. The correct answer is Option (C), platelet count less than 100,000/mm^3, because this result is listed in the exclusion criteria for administration of tissue plasminogen activator for patients with acute ischemic stroke.

Option (A), hematocrit less than or equal to 30%, is incorrect because this value is not listed in the exclusion criteria for use of tissue plasminogen activator. Option (B), international normalized ratio less than or equal to 1.5, is incorrect because the international normalized ratio listed in the exclusion criteria for use of tissue plasminogen activator is specified as greater than 1.7. Option (D), serum glucose level less than 80 mg/dL, is incorrect because the serum glucose level listed in the exclusion criteria for use of tissue plasminogen activator is less than 50 mg/dL. Option (E), white blood cell count greater than 12,000/mm^3, is incorrect because white blood cell count is not included as part of the exclusion criteria for use of tissue plasminogen activator.

Question #14

A 65-year-old man is admitted to the hospital for management of an exacerbation of heart failure caused by noncompliance with his diuretic drug therapy. The patient says he smokes one pack of cigarettes daily and drinks alcohol socially. Three days later, the patient has sudden onset of hallucinations, agitation, and diaphoresis. Pulse rate is 130/min. Initiation of therapy with which of the following medications is the most appropriate next step to prevent worsening of the patient's symptoms?

(A) Carbamazepine

(B) Folate

(C) Haloperidol

(D) Lorazepam

(E) Thiamine

Content Area: Psychiatry (4%)

Critique

This question tests the examinee's knowledge regarding recognition and management of acute alcohol withdrawal. The correct answer is Option (D), lorazepam, because it is the only benzodiazepine listed and benzodiazepines have been shown to be effective for management of acute alcohol withdrawal. Benzodiazepines are GABA receptor agonists, which mimic the effects of alcohol and, therefore, reduce the severity and duration of withdrawal symptoms. Benzodiazepines have also been shown to reduce the mortality rate in patients with acute alcohol withdrawal.

Option (A), carbamazepine, is incorrect because this medication is an anticonvulsive that can be used as an adjunct therapy for alcohol withdrawal but is not considered first-line therapy. Option (B), folate, is incorrect because administration of this agent addresses the nutritional deficiencies of patients with alcohol use disorder (alcohol dependence) but does not affect the GABA receptors themselves. Option (C), haloperidol, is incorrect because it is an antipsychotic that does not have GABA receptor agonist effects. Haloperidol may be used for behavior control in patients with acute alcohol withdrawal but can lower the seizure threshold and must be used with caution. Option (E), thiamine, is incorrect because although it addresses the nutritional deficiencies in patients with alcohol use disorder (alcohol dependence), it does not affect the GABA receptors.

Question #15

A 45-year-old man is admitted to the hospital for management of pneumonia, and therapy with ceftriaxone and azithromycin is initiated. On the third day after admission, the usual dose of ceftriaxone is administered and the patient has sudden onset of severe shortness of breath, urticaria, and pruritus. Which of the following is the most likely diagnosis?

(A) Anaphylaxis

(B) Anticholinergic reaction

(C) Asthma attack

(D) Red man syndrome

(E) Vasovagal reaction

Content Area: Allergy/Immunology/Rheumatology (3%)

Critique

This question addresses the examinee's ability to recognize the signs and symptoms associated with acute anaphylaxis as well as common adverse effects of pharmacotherapeutics. The correct answer is Option (A), anaphylaxis, because the symptoms described in the clinical scenario (sudden onset of shortness of breath, urticaria, and pruritus) are common symptoms of acute anaphylaxis. Additionally, the patient has been given an antibiotic, ceftriaxone, which is commonly linked to allergic reactions.

Option (B), anticholinergic reaction, is incorrect because no anticholinergic medications have been administered to the patient described. Also, patients with an anticholinergic reaction would typically present with tachycardia, fever, and mydriasis. Option (C), asthma attack, is incorrect because this condition does not typically present with urticaria or pruritus even though shortness of breath is a common symptom of exacerbations of asthma. Option (D), red man syndrome, is incorrect because this condition typically presents as an erythematous rash not associated with shortness of breath and is typically associated with vancomycin administration. Option (E), vasovagal reaction, is incorrect because this condition typically presents with hypotension, syncope or presyncope, and no rash.