USMLE Step 2 CK High-Yield Practice Test (Sample)

Study Guide

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Questions

1. What therapy may be used to alleviate symptoms during SVT if vagal maneuvers are unsuccessful?

A. Adenosine

B. Calcium channel blockers

C. Digoxin

D. Beta-blockers

2. What type of diarrhea is commonly associated with traveling to developing countries?

A. Watery diarrhea

B. Traveler's diarrhea

C. Chronic diarrhea

D. Hemorrhagic diarrhea

3. Which urinary finding is typically associated with allergic interstitial nephritis?

A. Red blood cell casts

B. White blood cell casts

C. Waxy casts

D. Maltese crosses

4. A patient with IV drug use presents with JVD and a holosystolic murmur at the left sternal border. What is the best treatment approach?

A. Antibiotics for infections

B. Cardiac catheterization

C. Treat existing heart failure and replace tricuspid valve

D. Initiate diuretics

5. What medications are classic causes of drug-induced hepatitis?

A. Antibiotics, NSAIDs, and opioids

B. TB medications, acetaminophen, and tetracycline

C. Antidepressants, antihistamines, and corticosteroids

D. Antiviral drugs, antipsychotics, and muscle relaxants

6. What vital sign changes would indicate the need for immediate intervention in neurogenic shock?

A. High blood pressure and normal pulse

B. Low blood pressure and low pulse

C. Low blood pressure and high pulse

D. High blood pressure and bradycardia

7. What type of molar pregnancy contains fetal tissue?

A. Complete mole

B. Partial mole

C. Molar pregnancy with triploidy

D. Choriocarcinoma

8. What is the recommended prophylaxis regimen for endocarditis during oral surgery?

A. Amoxicillin in all cases

B. Amoxicillin for certain situations

C. Ceftriaxone for all patients

D. No antibiotic prophylaxis recommended

9. What are common symptoms of chronic obstructive pulmonary disease (COPD)?

A. Intermittent fever and chills

B. Consistent shortness of breath and chronic cough

C. Rapid weight gain and polyuria

D. Joint pain and muscle weakness

10. What is indicated by the presence of eosinophils in urine sediment?

A. Acute glomerulonephritis

B. Chronic kidney disease

C. Allergic interstitial nephritis

D. Diabetes mellitus

Answers

1. A
2. B
3. B
4. C
5. B
6. B
7. B
8. B
9. B
10. C

Explanations

1. What therapy may be used to alleviate symptoms during SVT if vagal maneuvers are unsuccessful?

A. Adenosine

B. Calcium channel blockers

C. Digoxin

D. Beta-blockers

Adenosine is an effective first-line therapy for the acute management of supraventricular tachycardia (SVT) when vagal maneuvers have failed. It works by temporarily blocking atrioventricular (AV) node conduction, which can interrupt the reentrant circuit commonly responsible for SVT. This blockade can restore normal sinus rhythm almost immediately. Administered via rapid IV push, adenosine is particularly useful in cases of paroxysmal SVT, and is preferred due to its rapid onset and short duration of action, allowing for quick assessment of its efficacy without prolonged effects. This property is advantageous in emergency settings where immediate rhythm control is required. Other therapies, such as calcium channel blockers, digoxin, and beta-blockers, may also play a role in the management of SVT, particularly in chronic settings or for rate control. However, they are typically not used as the first-line treatment in acute situations where immediate rhythm stabilization is necessary.

2. What type of diarrhea is commonly associated with traveling to developing countries?

A. Watery diarrhea

B. Traveler's diarrhea

C. Chronic diarrhea

D. Hemorrhagic diarrhea

Traveler's diarrhea is characteristically associated with visiting developing countries due to a combination of factors such as inadequate sanitation, contaminated food and water supply, and exposure to different pathogens that travelers' digestive systems may not be accustomed to. Typically, this condition can present as watery diarrhea, often caused by bacterial pathogens such as Escherichia coli (especially enterotoxigenic E. coli), as well as viruses and parasites. The term "traveler's diarrhea" encompasses both the symptoms (diarrhea, abdominal cramps, and sometimes vomiting) and the circumstances under which it occurs, specifically relating to travel to regions with different hygiene standards. While watery diarrhea is a symptom of traveler's diarrhea, the association of the term with the context of being a traveler distinguishes it from other types of diarrhea that might have various causes unrelated to travel. Chronic diarrhea generally refers to diarrhea persisting for a longer duration, while hemorrhagic diarrhea indicates the presence of blood in the stool, which is not typical of traveler's diarrhea. Thus, the focus on the travel context and the acute onset of diarrhea symptoms during trips to developing countries aligns precisely with what is identified as traveler's diarrhea.

3. Which urinary finding is typically associated with allergic interstitial nephritis?

A. Red blood cell casts

B. White blood cell casts

C. Waxy casts

D. Maltese crosses

Allergic interstitial nephritis is characterized by an inflammatory response in the interstitium of the kidney, often triggered by medications, infections, or autoimmune diseases. One of the hallmark urinary findings in this condition is the presence of white blood cell casts. White blood cell casts are formed when white blood cells accumulate within the renal tubules and are excreted in the urine. Their presence indicates an inflammatory process occurring within the kidney, typically associated with conditions like interstitial nephritis. In this case, allergic interstitial nephritis stimulates an immune response that leads to infiltration of white blood cells, primarily eosinophils, into the renal interstitium, which is why their casts can be found in the urine. Other findings in allergic interstitial nephritis might include elevated levels of eosinophils in the blood and urine, but the presence of white blood cell casts is specifically indicative of this type of renal inflammation. While red blood cell casts are typically associated with glomerular disease, waxy casts may indicate chronic kidney disease, and Maltese crosses relate to conditions causing lipiduria, none of these findings reflect the pathophysiological changes seen in allergic interstitial nephritis. Thus, white blood cell casts are the correct and most relevant

4. A patient with IV drug use presents with JVD and a holosystolic murmur at the left sternal border. What is the best treatment approach?

A. Antibiotics for infections

B. Cardiac catheterization

C. Treat existing heart failure and replace tricuspid valve

D. Initiate diuretics

In this scenario, the patient with a history of intravenous drug use presents with jugular venous distension (JVD) and a holosystolic murmur at the left sternal border, which is suggestive of tricuspid regurgitation. This condition is commonly seen in patients with infective endocarditis associated with IV drug use, where vegetations can form on the tricuspid valve, leading to regurgitation and subsequent heart failure symptoms. The best treatment approach involves addressing both the underlying valve pathology and the immediate clinical symptoms of heart failure. Surgical intervention, such as tricuspid valve replacement, may be indicated in cases of significant regurgitation due to infective endocarditis, particularly when there is failure to respond to medical treatment or when there are signs of heart failure. This treatment helps alleviate symptoms by correcting the valve's function and preventing further complications. While initiating antibiotics is crucial in treating the infection that might be causing endocarditis, it alone does not address the mechanical issue of the faulty tricuspid valve. Management of heart failure with diuretics and supportive care can be important, but these are not definitive treatments for the underlying valvular pathology. Cardiac catheterization might be useful in certain situations

5. What medications are classic causes of drug-induced hepatitis?

A. Antibiotics, NSAIDs, and opioids

B. TB medications, acetaminophen, and tetracycline

C. Antidepressants, antihistamines, and corticosteroids

D. Antiviral drugs, antipsychotics, and muscle relaxants

Drug-induced hepatitis can occur when certain medications cause liver inflammation due to toxic effects or an immune-mediated response. Among the listed categories, tuberculosis (TB) medications, particularly isoniazid and rifampin, are well-known culprits that can lead to drug-induced liver injury. Acetaminophen is notorious for its hepatotoxic potential, especially in overdose situations, and can cause severe liver damage. Tetracycline is another antibiotic that has been associated with liver injury, though it is less common. These medications are recognized for their potential to induce liver inflammation and affect liver function, leading to symptoms such as jaundice, elevated liver enzymes, and in severe cases, hepatic failure. Understanding the specific drugs that can cause this condition is crucial for clinicians, as it aids in the appropriate monitoring of liver function, early identification of adverse effects, and management of patients taking these medications.

6. What vital sign changes would indicate the need for immediate intervention in neurogenic shock?

A. High blood pressure and normal pulse

B. Low blood pressure and low pulse

C. Low blood pressure and high pulse

D. High blood pressure and bradycardia

In neurogenic shock, one hallmark is the loss of sympathetic tone resulting in vasodilation, leading to hypotension (low blood pressure). Due to the interruption of sympathetic nervous system functions, patients may also experience a decreased heart rate (bradycardia) rather than a compensatory tachycardia. The need for immediate intervention is prompted by low blood pressure, which compromises organ perfusion and can lead to ischemic events if not corrected promptly. In this scenario, a low pulse can occur due to bradycardia associated with neurogenic shock. The combination of low blood pressure and low pulse signifies significant cardiovascular instability that necessitates urgent treatment, such as intravenous fluid resuscitation or medication to support blood pressure. Contrastingly, other options do not present the same urgent clinical picture associated with neurogenic shock. High blood pressure, regardless of pulse status, does not characterize neurogenic shock and would not require the same immediate intervention. Thus, the combination of low blood pressure and low pulse is the clinical indicator of critical need for intervention in neurogenic shock.

7. What type of molar pregnancy contains fetal tissue?

A. Complete mole

B. Partial mole

C. Molar pregnancy with triploidy

D. Choriocarcinoma

A partial mole is characterized by the presence of both abnormal placental tissue and some degree of fetal tissue. In this condition, there is typically a mixture of normal and abnormal chorionic villi, and the embryonic tissue may show signs of development, although it is often malformed or non-viable. The fetal tissue in partial moles can arise from fertilization of an egg by two sperm or an egg that has not undergone proper reduction in genetic content, leading to a triploid karyotype in many cases. In contrast, a complete mole occurs when the egg is fertilized by one or two sperm, resulting in only abnormal placental tissue without any fetal tissue. Molar pregnancies with triploidy and choriocarcinoma do not involve viable fetal tissue; triploidy typically leads to severe fetal anomalies or demise, while choriocarcinoma is a malignant, gestational trophoblastic disease arising from trophoblastic cells, devoid of any normal fetal tissues. Thus, the presence of fetal tissue distinctly identifies partial moles in the spectrum of molar pregnancies.

8. What is the recommended prophylaxis regimen for endocarditis during oral surgery?

A. Amoxicillin in all cases

B. Amoxicillin for certain situations

C. Ceftriaxone for all patients

D. No antibiotic prophylaxis recommended

The recommended prophylaxis regimen for endocarditis during oral surgery includes the use of amoxicillin in specific situations rather than in all cases. This aligns with guidelines that recognize certain high-risk patients, such as those with a history of infective endocarditis, prosthetic heart valves, or specific congenital heart conditions, as requiring antibiotic prophylaxis to prevent bacteremia that can lead to endocarditis. For patients who do not fall into these high-risk categories, antibiotic prophylaxis is not routinely recommended. This stratification ensures that prophylactic antibiotics are used judiciously and helps reduce the emergence of antibiotic resistance. Therefore, the correct answer reflects the guidelines' emphasis on the use of amoxicillin for patients who are at elevated risk for developing endocarditis, while other patients may not require any prophylaxis at all.

9. What are common symptoms of chronic obstructive pulmonary disease (COPD)?

A. Intermittent fever and chills

B. Consistent shortness of breath and chronic cough

C. Rapid weight gain and polyuria

D. Joint pain and muscle weakness

Chronic obstructive pulmonary disease (COPD) is characterized by persistent respiratory symptoms and airflow limitation due to airway and/or alveolar abnormalities. The hallmark symptoms include consistent shortness of breath and a chronic cough. Shortness of breath, especially during physical activity, manifests due to the obstruction of airflow in the lungs, which impairs gas exchange and causes the sensation of breathlessness. A chronic cough is often productive, with sputum production being a common symptom in individuals with chronic bronchitis, a subtype of COPD. In the context of this condition, symptoms such as intermittent fever and chills are not typical, as these are usually associated with infections or acute inflammatory processes rather than the stable, chronic symptoms seen in COPD. Similarly, rapid weight gain and polyuria are more indicative of fluid retention and metabolic disturbances, often found in conditions like heart failure or diabetes, rather than pulmonary issues. Joint pain and muscle weakness do not directly relate to respiratory conditions like COPD; rather, they might suggest rheumatological or systemic diseases. By recognizing the characteristic symptoms of COPD, clinicians can better diagnose and manage this chronic condition, improving quality of life for affected individuals.

10. What is indicated by the presence of eosinophils in urine sediment?

A. Acute glomerulonephritis

B. Chronic kidney disease

C. Allergic interstitial nephritis

D. Diabetes mellitus

The presence of eosinophils in urine sediment is a significant finding that typically indicates allergic interstitial nephritis. Eosinophils are a type of white blood cell that are often involved in allergic reactions and parasitic infections. In the context of kidney pathology, their presence in the urine can point to interstitial nephritis often triggered by medications, infections, or autoimmune diseases. Allergic interstitial nephritis is characterized by an immune-mediated response leading to inflammation in the renal interstitium. This condition usually leads to acute kidney injury and is often associated with a recent history of medication use, particularly nonsteroidal anti-inflammatory drugs (NSAIDs), certain antibiotics, or diuretics. In these cases, the immune response can result in the recruitment of eosinophils to the site of inflammation, which then spill over into the urine. While other conditions, such as acute glomerulonephritis, can lead to urinary abnormalities, they typically do not feature eosinophils in urine sediment as a primary finding. Similarly, chronic kidney disease and diabetes mellitus can cause changes in urine, but eosinophils are not a characteristic feature associated with these conditions. Thus, when eosinophils are identified in urinary sediment, it