Certified Registered Nurse Infusion (CRNI) Practice Exam (Sample)

Study Guide

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Questions

1. Which antineoplastic agent has a lifetime cumulative dose limit of 550 mg/m²?

A. Daunorubicin HCI

B. Bleomycin

C. Cyclophosphamide

D. Etoposide

2. Veins greater than how many mm have valves?

A. 1 mm

B. 2 mm

C. 3 mm

D. 4 mm

3. Which medication is recommended when penicillin cannot be used?

A. Daptomycin

B. Tygacil

C. Vibramycin

D. Chloramphenicol

4. What might a nurse monitor in a patient receiving PCA?

A. Heart rate variability

B. Pain levels and sedation

C. Temperature changes

D. Electrolyte balance

5. What is the most frequent complication of peripheral IV catheters?

A. Phlebitis

B. Tissue necrosis

C. Infiltration

D. Air embolism

6. Which symptoms may indicate a pneumothorax?

A. Sudden chest pain and shortness of breath

B. Severe back pain and fever

C. Persistent cough and wheezing

D. Abdominal pain and nausea

7. What is the term for malnutrition that presents with edema?

A. Marasmus

B. Kwashiorkor

C. Starvation

D. Dehydration

8. Which of the following is a common side effect of opioids?

A. Increased appetite

B. Constipation

C. Weight loss

D. Dry skin

9. In a quality process, which of the following components is NOT included?

A. Structure

B. Outcomes

C. Diagnosis

D. Process

10. When should a nurse assess a patient's response to PCA therapy?

A. Only during medication administration

B. Every hour for the first 24 hours

C. With any reported pain or sedation

D. At the end of each shift

Answers

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

Explanations

1. Which antineoplastic agent has a lifetime cumulative dose limit of 550 mg/m²?

A. Daunorubicin HCI

B. Bleomycin

C. Cyclophosphamide

D. Etoposide

The antineoplastic agent with a lifetime cumulative dose limit of 550 mg/m² is Daunorubicin HCI. This drug belongs to the class of anthracyclines, which are known for their effectiveness in treating various cancers, particularly hematological malignancies. However, one of the significant concerns with Daunorubicin is its potential to cause cumulative cardiotoxicity, particularly dose-dependent cardiomyopathy. To mitigate this risk, a lifetime cumulative dose limit has been established. In contrast, other options such as Bleomycin, Cyclophosphamide, and Etoposide have different considerations for cumulative dosing or side effects, but they do not share the specific lifetime cumulative dose limit as Daunorubicin does. For instance, Bleomycin is known for pulmonary toxicity, and while there is a maximum cumulative dose suggested, it is not the same as the stringent 550 mg/m² limit associated with Daunorubicin. Understanding the specific dose limits associated with different antineoplastic agents is crucial for ensuring patient safety and optimizing cancer treatment strategies.

2. Veins greater than how many mm have valves?

A. 1 mm

B. 2 mm

C. 3 mm

D. 4 mm

Veins that are greater than 2 mm in diameter typically have valves. Venous valves are important structures that help prevent the backflow of blood as it is returned to the heart, especially from the extremities where blood must work against gravity. The presence of valves becomes more common once veins reach this size because larger veins require support to facilitate effective venous return under varying body positions and physical exertion. Valves in these larger veins assist in maintaining unidirectional blood flow, which is crucial for proper circulatory function. In smaller veins, which are usually less than 2 mm in diameter, valves are sparse or absent. The lack of sufficient hemodynamic forces and the role of surrounding tissue and muscle contractions help manage blood flow effectively without the need for valves in those smaller vessels. As the diameter of the veins increases and the potential for blood pooling becomes more significant, valves become increasingly necessary to ensure efficient circulation.

3. Which medication is recommended when penicillin cannot be used?

A. Daptomycin

B. Tygacil

C. Vibramycin

D. Chloramphenicol

When a patient cannot use penicillin due to an allergy or other contraindications, the recommended alternative is Vibramycin, also known as doxycycline. This medication belongs to the tetracycline class of antibiotics and is effective against a broad range of bacterial infections, making it a suitable option when penicillin is not appropriate. Vibramycin works by inhibiting bacterial protein synthesis, thus disrupting the growth of susceptible bacteria. It's specifically useful for treating infections caused by organisms that are resistant to penicillin, such as some strains of staphylococci, as well as other infections like those from atypical pathogens. The other choices provided are not typically recommended as direct substitutes for penicillin. Daptomycin, for instance, is used primarily for complicated skin infections and certain Gram-positive infections, while Tygacil (tigecycline) is often reserved for more complex infections and is not a first-line therapy. Chloramphenicol, although effective, is limited in its use due to potential severe side effects and its broad-spectrum nature, making it less preferable in situations where penicillin cannot be used. Thus, considering the efficacy, safety, and current guidelines surrounding antibiotic usage, Vibramycin is the most appropriate alternative when penicillin cannot

4. What might a nurse monitor in a patient receiving PCA?

A. Heart rate variability

B. Pain levels and sedation

C. Temperature changes

D. Electrolyte balance

Monitoring pain levels and sedation in a patient receiving patient-controlled analgesia (PCA) is critical to ensure effective pain management while also preventing potential sedation-related complications. PCA allows patients to self-administer pain medication, typically opioids, thereby empowering them to manage their pain according to their personal comfort levels. By focusing on pain levels, the nurse can assess how effectively the PCA method is controlling the patient's discomfort. Simultaneously, sedation levels need to be evaluated to avoid oversedation, which can lead to respiratory depression and other serious adverse effects. This dual monitoring helps in achieving a balance between adequate pain relief and patient safety, making it a fundamental aspect of care for patients on PCA. In contrast to this correct choice, monitoring heart rate variability might not be directly relevant unless there are specific cardiovascular concerns. Temperature changes would typically be monitored for infections or other systemic issues rather than as a direct consequence of PCA use. Electrolyte balance is also significant, particularly in patients receiving long-term opioid therapy or with chronic conditions, but it is not the primary focus in the context of PCA administration. Thus, the emphasis on pain and sedation assessment in the context of PCA highlights its importance in optimizing patient outcomes.

5. What is the most frequent complication of peripheral IV catheters?

A. Phlebitis

B. Tissue necrosis

C. Infiltration

D. Air embolism

The correct answer highlights infiltration as the most frequent complication associated with peripheral IV catheters. Infiltration occurs when the IV catheter dislodges from the vein or punctures through the vein wall, allowing the infusion fluid to enter the surrounding tissue instead of the bloodstream. This situation can lead to swelling, discomfort, and potential skin damage in the area around the catheter. Understanding that infiltration is a common issue is crucial for healthcare practitioners because it emphasizes the importance of proper catheter placement and continuous monitoring of the IV site. By being vigilant about signs of infiltration, practitioners can intervene promptly to avoid complications. While phlebitis, tissue necrosis, and air embolism are recognized complications associated with peripheral IV catheters, they occur less frequently compared to infiltration. Phlebitis is characterized by inflammation of the vein, often due to infection or irritation from the IV solution; tissue necrosis may result from complications related to administering caustic substances; and air embolism involves air entering the bloodstream, a rare but serious condition. Understanding these distinctions helps in managing and preventing complications related to IV therapy effectively.

6. Which symptoms may indicate a pneumothorax?

A. Sudden chest pain and shortness of breath

B. Severe back pain and fever

C. Persistent cough and wheezing

D. Abdominal pain and nausea

Sudden chest pain and shortness of breath are hallmark symptoms of a pneumothorax, which occurs when air enters the pleural space, leading to a collapse of the lung on the affected side. The sudden onset of chest pain may be sharp and can be associated with the mechanical disruption of the lung tissue or the pleura. Shortness of breath often accompanies this pain because the compromised lung function reduces the body's ability to oxygenate blood effectively. Patients with a pneumothorax might also have decreased breath sounds on the affected side when a healthcare provider performs a physical examination. In contrast, the other symptoms listed do not specifically indicate a pneumothorax. Severe back pain and fever may suggest an infection or other musculoskeletal issue, while a persistent cough and wheezing are more aligned with respiratory conditions such as asthma or bronchitis. Abdominal pain and nausea can relate to gastrointestinal issues rather than a pulmonary problem like pneumothorax. Thus, the symptoms of sudden chest pain and shortness of breath distinctly signal the need for further evaluation of a potential pneumothorax.

7. What is the term for malnutrition that presents with edema?

A. Marasmus

B. Kwashiorkor

C. Starvation

D. Dehydration

The term that describes malnutrition characterized by edema is Kwashiorkor. This condition typically arises from a lack of protein in the diet, despite the consumption of adequate calories. The presence of edema is a key symptom and is largely due to the body's inability to maintain proper fluid balance without sufficient protein levels. In Kwashiorkor, the low levels of albumin, a protein that helps keep fluid in the blood vessels, lead to fluid accumulation in tissues, resulting in swelling. This condition is especially common in children who are weaned from breastfeeding to a diet that is rich in carbohydrates but low in proteins. Marasmus, on the other hand, refers to a form of severe malnutrition due to insufficient caloric intake and is characterized by extreme thinness without the presence of edema. Starvation generally denotes a prolonged lack of food intake, which can include various nutrient deficiencies, and dehydration relates specifically to the loss of water and does not inherently include nutritional deficiencies. Therefore, the identification of Kwashiorkor as the correct term for malnutrition with edema is crucial in understanding the specific nutritional deficiencies and symptoms associated with this condition.

8. Which of the following is a common side effect of opioids?

A. Increased appetite

B. Constipation

C. Weight loss

D. Dry skin

Opioids are widely known to produce a variety of side effects, and one of the most commonly reported is constipation. This side effect occurs due to the way opioids interact with the nervous system and gastrointestinal tract. Opioids bind to specific receptors in the body, which decreases gastrointestinal motility, leading to slower movement of food through the intestines. This slowdown causes increased water absorption in the intestines, resulting in harder and drier stools, thus making bowel movements more difficult and infrequent. In contrast, increased appetite is not typically associated with opioids; in fact, some people may experience a decrease in appetite. Weight loss can occur due to decreased food intake or nausea, which is also a potential side effect of opioid use. Dry skin is not specifically linked to opioids either and can arise from a variety of other causes unrelated to their use. Overall, constipation stands out as a significant and well-documented consequence of opioid therapy, highlighting the importance of monitoring gastrointestinal health in patients who are prescribed these medications.

9. In a quality process, which of the following components is NOT included?

A. Structure

B. Outcomes

C. Diagnosis

D. Process

In the context of quality processes, particularly in healthcare, the components typically consist of structure, process, and outcomes. Structure refers to the attributes of the settings where care occurs, including facilities and equipment, as well as the qualifications of healthcare professionals. This aspect focuses on the organizational aspects that contribute to the quality of care. Process encompasses the methods and activities through which healthcare is delivered. This includes the interactions between healthcare providers and patients, the procedures used for treatment, and the protocols followed during care delivery. Outcomes measure the results of healthcare services, reflecting the effectiveness of the care provided. This could involve patient recovery rates, the quality of life after treatment, and other indicators that reflect the results achieved through healthcare interventions. While diagnosis is certainly important within the healthcare framework, it is not considered a standalone component of the quality process in this specific context. Instead, diagnosis falls under the broader category of clinical activities and serves as a foundation for determining appropriate interventions and expected outcomes, but it does not directly categorize the quality of care itself as structure, process, or outcome does. Therefore, diagnosing is not recognized as a component of the quality process framework.

10. When should a nurse assess a patient's response to PCA therapy?

A. Only during medication administration

B. Every hour for the first 24 hours

C. With any reported pain or sedation

D. At the end of each shift

The nurse should assess a patient's response to patient-controlled analgesia (PCA) therapy with any reported pain or sedation. This approach is essential because PCA allows patients to self-administer pain relief, and their response can vary significantly over time based on multiple factors including their pain levels, sedation, and overall clinical condition. Regular assessment is critical for ensuring that the patient is receiving adequate pain management without experiencing excessive sedation or adverse effects. By responding to reports of pain or sedation, the nurse can make timely interventions such as adjusting the PCA settings, providing additional medications if necessary, and ensuring the patient's safety and comfort. This method of assessment aligns with patient-centered care practices, which emphasize the importance of individual patient feedback in managing treatment and addressing complications. Understanding the patient's experience is essential for ensuring optimal outcomes in pain management.