

Certified Emergency Nurse (CEN) Practice Test (Sample)

Study Guide



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Questions

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- 1. What is a common clinical feature of posterior descending artery MI?**
 - A. Tall R waves in V1 and V2**
 - B. ST elevation in leads 2, 3, aVF**
 - C. Elevation in arterial blood pressure**
 - D. Bradycardia**
- 2. Which of these is NOT a symptom associated with hypertensive encephalopathy?**
 - A. Stroke**
 - B. Headache**
 - C. Hemoptysis**
 - D. Seizures**
- 3. What treatment is recommended for mild to moderate pain in sickle cell disease?**
 - A. Ibuprofen**
 - B. Hydroxyurea**
 - C. NSAIDs and acetaminophen**
 - D. Blood transfusion**
- 4. What is the main goal when caring for an avulsed tooth?**
 - A. To disinfect the tooth**
 - B. To re-implant it as soon as possible**
 - C. To preserve the tooth**
 - D. To extract the root**
- 5. Which of the following increases preload in a patient?**
 - A. Fluid volume**
 - B. Vasodilation**
 - C. Increased respiratory rate**
 - D. Decreased heart rate**

- 6. When should epinephrine be repeated in severe anaphylaxis?**
- A. Every 5-10 minutes**
 - B. Every 15-20 minutes**
 - C. Once after 30 minutes**
 - D. Only if symptoms worsen**
- 7. Which term describes elevated levels of BUN and creatinine in the blood?**
- A. Azotemia**
 - B. Uremia**
 - C. Nephrotoxicity**
 - D. Hyperkalemia**
- 8. What is the function of an agonist in the context of system response?**
- A. Diminishes system response**
 - B. Inhibits cellular activity**
 - C. Stimulates a system**
 - D. Reverses system effects**
- 9. Which intervention is necessary if an internal cardiac defibrillator misinterprets a rhythm?**
- A. Immediate surgery**
 - B. Manual cardioverting with pads**
 - C. Apply a magnet to the device**
 - D. Restart the device completely**
- 10. What constitutes hypertensive urgency?**
- A. B/P above 180/120 without end organ dysfunction**
 - B. B/P below 160/100 with symptoms**
 - C. B/P above 160/110 with acute chest pain**
 - D. Stable B/P below 140/90**

Answers

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

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Explanations

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1. What is a common clinical feature of posterior descending artery MI?

- A. Tall R waves in V1 and V2**
- B. ST elevation in leads 2, 3, aVF**
- C. Elevation in arterial blood pressure**
- D. Bradycardia**

In the context of myocardial infarction (MI) involving the posterior descending artery, a common clinical feature is the presence of tall R waves in V1 and V2. This observation is characteristic of a posterior wall infarction as the electrical activity is disrupted when the heart muscle is injured in that region. When the posterior descending artery is compromised, it impacts the heart's electrical conduction pathways, leading to variations in the EKG readings. The tall R waves in the right precordial leads (V1 and V2) can occur due to the transition of electrical forces from the back of the heart toward the anterior wall, demonstrating the effects of the posterior MI. Other features of a posterior MI might include reciprocal ST segment changes in the anterior leads, and this pattern helps clinicians identify the MI's location. Tall R waves are distinct in this situation and provide critical information in understanding the patient's cardiac status. In contrast, the other options do not accurately describe the usual indicators of a posterior descending artery MI. For example, ST elevation in leads 2, 3, and aVF typically points toward an inferior MI involving the right coronary artery rather than a posterior MI. Similarly, elevation in arterial blood pressure is not a consistent finding, as blood pressure may vary.

2. Which of these is NOT a symptom associated with hypertensive encephalopathy?

- A. Stroke**
- B. Headache**
- C. Hemoptysis**
- D. Seizures**

Hypertensive encephalopathy is a condition that results from severe hypertension causing changes in the brain, leading to a range of neurological symptoms. The symptoms commonly associated with this condition include headache, visual disturbances, seizures, and altered mental status, as the high blood pressure can lead to cerebral edema and increased intracranial pressure. The correct answer indicates that hemoptysis, or coughing up blood, is not associated with hypertensive encephalopathy. While patients with hypertensive crises may experience cardiovascular or renal issues, hemoptysis is typically related to conditions involving the lungs or airways, such as pulmonary embolism, tuberculosis, or other respiratory conditions, rather than neurological changes caused by hypertension. Therefore, recognizing that hemoptysis does not directly correlate with the mechanisms and symptoms of hypertensive encephalopathy underlines the understanding of the condition's typical clinical presentation.

3. What treatment is recommended for mild to moderate pain in sickle cell disease?

- A. Ibuprofen**
- B. Hydroxyurea**
- C. NSAIDs and acetaminophen**
- D. Blood transfusion**

The recommended treatment for mild to moderate pain in individuals with sickle cell disease involves the use of nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen. This approach is effective for managing pain episodes often experienced by patients due to vaso-occlusive crises associated with the disease. NSAIDs, such as ibuprofen, have analgesic and anti-inflammatory properties, making them suitable for treating pain by reducing inflammation and providing pain relief. Acetaminophen also serves as an effective analgesic, helping to alleviate pain. Combining these two types of medications can enhance pain control while minimizing the side effects that may arise from using only one class of drug. This strategy is essential as it helps maintain patient comfort and function while avoiding the potential complications or risks associated with stronger interventions. Other treatment options, such as hydroxyurea and blood transfusions, are not typically used to address mild to moderate pain directly. Hydroxyurea is more of a long-term management strategy that can reduce the frequency of pain crises by increasing fetal hemoglobin levels. Blood transfusions are usually reserved for severe pain management or when there are significant complications, rather than for standard pain relief in mild to moderate cases.

4. What is the main goal when caring for an avulsed tooth?

- A. To disinfect the tooth**
- B. To re-implant it as soon as possible**
- C. To preserve the tooth**
- D. To extract the root**

The main goal when caring for an avulsed tooth is to preserve the tooth. This is critical because if the tooth can be successfully re-implanted within a certain timeframe, it can restore both function and aesthetics for the patient. Preserving the tooth involves minimizing damage to the periodontal ligament and maintaining its vitality, which is essential for future re-implantation. Immediate actions taken, such as keeping the tooth moist and handling it carefully, contribute to this preservation goal. The appropriate storage method, like placing the tooth in a glass of milk or saline, is also aimed at maintaining its viability until it can be re-implanted by a dental professional. This emphasis on preservation informs the necessary steps to take before seeking dental care, focusing on protecting the tooth until it can be placed back in the socket.

5. Which of the following increases preload in a patient?

- A. Fluid volume**
- B. Vasodilation**
- C. Increased respiratory rate**
- D. Decreased heart rate**

Preload refers to the degree of stretch of the heart muscle fibers at the end of diastole, which is directly influenced by the volume of blood returning to the heart. When fluid volume increases, it leads to an increase in blood returning to the right atrium, thereby increasing the preload. This enhanced filling of the heart results in a greater volume of blood being pumped out during systole, as dictated by the Frank-Starling law of the heart. In contrast, vasodilation decreases preload by allowing blood to pool in the peripheral vasculature, reducing the volume of blood returning to the heart. An increased respiratory rate does not directly affect preload; however, it may be associated with various physiological changes but does not contribute to the volume of blood returning to the heart. A decreased heart rate might allow more time for ventricular filling, but if fluid volume does not increase, preload will not be significantly affected. Therefore, increasing fluid volume is the primary factor that enhances preload in a patient.

6. When should epinephrine be repeated in severe anaphylaxis?

- A. Every 5-10 minutes**
- B. Every 15-20 minutes**
- C. Once after 30 minutes**
- D. Only if symptoms worsen**

In cases of severe anaphylaxis, the administration of epinephrine is critical to counteract the life-threatening reactions associated with this condition. Repeated doses of epinephrine may be necessary to effectively manage the symptoms and prevent progression to more severe complications. Epinephrine can be repeated every 5-15 minutes depending on the clinical situation. Specifically, the recommendation is to administer a second dose if symptoms do not improve or begin to worsen. While some guidelines may highlight a safe interval that can reach up to 15-20 minutes, the key factor is to closely monitor the patient's response. The option of this time frame allows for adequate assessment of the effectiveness of the initial dose while ensuring timely intervention if further treatment is necessary. In environments such as emergency departments or during acute anaphylactic events, timely reassessment can dictate the need for additional doses. Therefore, this option reflects a cautious yet responsive approach to managing severe anaphylaxis, balancing safety with the urgency required in these critical situations. The importance of understanding the need for timely administration while monitoring the patient underscores why this particular answer is the most appropriate choice.

7. Which term describes elevated levels of BUN and creatinine in the blood?

- A. Azotemia**
- B. Uremia**
- C. Nephrotoxicity**
- D. Hyperkalemia**

Azotemia refers specifically to the accumulation of nitrogenous waste products, such as blood urea nitrogen (BUN) and creatinine, in the blood. This condition typically arises from renal dysfunction, where the kidneys are unable to effectively filter and excrete these waste products. Elevated levels of BUN and creatinine serve as important markers for assessing kidney health and function. Uremia, on the other hand, denotes a more severe stage of kidney impairment, where not only are there elevated levels of BUN and creatinine, but there are also clinical signs and symptoms associated with kidney failure, such as fatigue, nausea, and changes in mental status. Nephrotoxicity describes damage to the kidneys from toxic substances or drugs, which can lead to elevated BUN and creatinine but is not a term that specifically denotes the levels of these substances in the blood. Hyperkalemia is defined as elevated potassium levels in the blood, which can occur in renal failure but is not directly related to the levels of BUN and creatinine. Overall, the term azotemia accurately identifies elevated concentrations of BUN and creatinine without associating it with the broader clinical implications or other factors that may influence kidney function.

8. What is the function of an agonist in the context of system response?

- A. Diminishes system response**
- B. Inhibits cellular activity**
- C. Stimulates a system**
- D. Reverses system effects**

In the context of system response, an agonist is a substance that binds to a receptor and activates it, thereby stimulating a response. Agonists mimic the action of endogenous substances or neurotransmitters that normally interact with the receptor, leading to a biological response that supports or enhances a particular function or process in the body. This stimulation can increase cellular activity, promote physiological responses, or enhance the effects of a particular system. The focus of the question is on how an agonist affects a system's response, which is why stimulation represents the primary action of an agonist. In contrasting terms, substances that diminish or inhibit system responses or reverse effects do not align with the role of an agonist, as these functions are characteristic of antagonists or inhibitors that block or reduce activity rather than promote it. Thus, the correct understanding of an agonist is that it plays a critical role in activating specific pathways and eliciting an increase in function within the biological system.

9. Which intervention is necessary if an internal cardiac defibrillator misinterprets a rhythm?

- A. Immediate surgery**
- B. Manual cardioverting with pads**
- C. Apply a magnet to the device**
- D. Restart the device completely**

Applying a magnet to an internal cardiac defibrillator is the correct intervention when the device misinterprets a rhythm. This action effectively reprograms the device temporarily, allowing the healthcare provider to manage the situation without the need for more invasive procedures or immediate changes to the patient's condition. The magnet will usually disable the shock feature, preventing unnecessary defibrillation if the device wrongly detects a shockable rhythm. This maneuver is essential for ensuring patient safety and providing the opportunity for further assessment and management of the patient's rhythm. The other options involve more drastic measures. Immediate surgery is typically not warranted in cases of misinterpretation. Manual cardioverting may be necessary in some contexts, but it is more appropriate for rhythm disturbances that are reliably known to be dangerous and not for scenarios where the defibrillator has misunderstood the rhythm. Restarting the device completely could be impractical and could lead to further misinterpretations while waiting for the device to reboot. Therefore, using a magnet is a safe, quick, and effective approach to managing the misinterpretation of rhythms by an internal cardiac defibrillator.

10. What constitutes hypertensive urgency?

- A. B/P above 180/120 without end organ dysfunction**
- B. B/P below 160/100 with symptoms**
- C. B/P above 160/110 with acute chest pain**
- D. Stable B/P below 140/90**

Hypertensive urgency is specifically defined as a situation where blood pressure is elevated, typically above 180/120 mmHg, yet there is no evidence of acute end-organ dysfunction. This means that while the blood pressure is dangerously high, the individual is not experiencing any direct damage to organs such as the heart, kidneys, or brain, which can occur in hypertensive emergencies. In hypertensive urgency, the elevated blood pressure can lead to symptoms like headache, anxiety, or epistaxis, but the key factor is that end-organ damage is absent. Monitoring and careful management are essential, and treatment typically involves the gradual reduction of blood pressure, often through oral medications, instead of immediate invasive interventions. This understanding highlights the importance of differentiating between hypertensive urgency and hypertensive emergencies, where immediate medical intervention is necessary due to complications that could threaten the patient's life.