

Fundamentals of Critical Care Nursing (FCCN) level 1 Practice Exam (Sample)

Study Guide



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SAMPLE

Questions

SAMPLE

- 1. Which of the following medications should be held prior to dialysis?**
 - A. Antihypertensives**
 - B. Anti-seizure medications**
 - C. Insulin**
 - D. Antipsychotics**
- 2. How does ANP affect blood pressure?**
 - A. It increases blood pressure**
 - B. It decreases blood pressure**
 - C. It stabilizes blood pressure**
 - D. It has no effect on blood pressure**
- 3. What should a nurse assess when caring for a patient with an AV fistula?**
 - A. Listen for a carotid bruit**
 - B. Listen for a bruit and feel for a thrill**
 - C. Check for pedal pulses**
 - D. Measure the limb's circumference**
- 4. Significant pitting edema is commonly associated with which condition?**
 - A. Cardiogenic shock**
 - B. Heart failure**
 - C. Hypotension**
 - D. Pulmonary embolism**
- 5. Which condition may cause an increase in INR due to liver dysfunction?**
 - A. Hyperthyroidism**
 - B. Left heart failure**
 - C. Right heart failure**
 - D. Acute kidney injury**

- 6. Which of the following is an assessment method for evaluating physical perfusion?**
- A. Respiratory rate**
 - B. Skin and pulse examination**
 - C. Electrocardiogram**
 - D. Complete blood count**
- 7. What clinical manifestation indicates poor tissue oxygenation?**
- A. Hypertension**
 - B. Confusion**
 - C. Excessive bleeding**
 - D. Bradycardia**
- 8. What is the primary action of colloids in the bloodstream?**
- A. Disperse evenly in the body's tissues**
 - B. Pull fluid into the bloodstream**
 - C. Provide oxygen transport**
 - D. Replace lost electrolytes**
- 9. What major symptom indicates severe hyponatremia?**
- A. Abdominal discomfort**
 - B. Dizziness**
 - C. Change in level of consciousness**
 - D. Muscle cramps**
- 10. What causes stable angina?**
- A. Plaque rupture**
 - B. An imbalance between O₂ delivery and O₂ demand**
 - C. Myocardial infarction**
 - D. Severe dehydration**

Answers

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

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Explanations

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1. Which of the following medications should be held prior to dialysis?

- A. Antihypertensives**
- B. Anti-seizure medications**
- C. Insulin**
- D. Antipsychotics**

Holding antihypertensives prior to dialysis is appropriate because dialysis can significantly alter blood pressure and fluid balance in patients. During dialysis, patients often experience shifts in fluid volume and electrolyte levels, which can lead to hypotension or other cardiovascular issues. Administering antihypertensive medications right before the procedure may compound these effects, leading to excessively low blood pressure during and after treatment. In contrast, other medication classes have different considerations. For instance, anti-seizure medications are often continued to prevent seizure activity in patients at risk for seizures due to electrolyte imbalances or uremic conditions. Insulin may also be administered or adjusted depending on the patient's blood glucose levels and the specific dialysis regimen, particularly since dialysis can remove glucose. Antipsychotic medications are typically not directly impacted by the dialysis process and may not require holding unless specifically indicated by the patient's clinical condition. Therefore, the rationale for withholding antihypertensives primarily hinges on the need to maintain hemodynamic stability during dialysis.

2. How does ANP affect blood pressure?

- A. It increases blood pressure**
- B. It decreases blood pressure**
- C. It stabilizes blood pressure**
- D. It has no effect on blood pressure**

Atrial natriuretic peptide (ANP) plays a significant role in regulating blood pressure through its effects on the cardiovascular system. ANP is a hormone secreted by atrial cells in response to increased atrial pressure, which typically occurs when there's an increase in blood volume. The primary function of ANP is to promote natriuresis, which is the excretion of sodium through the urine. By increasing the excretion of sodium, ANP effectively enhances fluid loss from the body, leading to a reduction in blood volume. Since blood pressure is closely related to blood volume, decreasing the volume can lead to a lowering of blood pressure. In addition to promoting the excretion of sodium, ANP causes vasodilation, which relaxes blood vessels and further contributes to decreased systemic vascular resistance. Together, these actions help to lower blood pressure, making the understanding of ANP vital in the context of fluid balance and cardiovascular health. This physiological response is particularly important in conditions where hypertension (high blood pressure) or fluid overload is present, demonstrating the regulatory function of ANP in maintaining blood pressure homeostasis.

3. What should a nurse assess when caring for a patient with an AV fistula?

- A. Listen for a carotid bruit**
- B. Listen for a bruit and feel for a thrill**
- C. Check for pedal pulses**
- D. Measure the limb's circumference**

In assessing a patient with an arteriovenous (AV) fistula, it is crucial for the nurse to evaluate both the presence of a bruit and a thrill. The presence of a bruit indicates that there is adequate blood flow through the fistula, which is essential for its function, especially in patients who may be utilizing the fistula for hemodialysis. Hearing a bruit is a sign of turbulent blood flow, which reflects the successful anastomosis of the artery and vein. In addition to the bruit, palpating for a thrill—a vibration felt over the fistula—further confirms that the AV fistula is functioning properly. A thrill indicates good arterial flow and that the anastomosis is patent and functioning. Both assessments are integral components of monitoring the AV fistula, as they help ensure that the vessel is being used effectively for dialysis purposes and that there are no complications such as thrombosis or stenosis. Other options, while they may be useful in different clinical contexts, do not specifically pertain to the evaluation of an AV fistula. For example, assessing for a carotid bruit pertains to the carotid arteries and not the AV fistula. Checking for pedal pulses relates more to peripheral circulation rather than the functionality

4. Significant pitting edema is commonly associated with which condition?

- A. Cardiogenic shock**
- B. Heart failure**
- C. Hypotension**
- D. Pulmonary embolism**

Significant pitting edema is primarily associated with heart failure due to the body's fluid retention mechanisms in response to impaired cardiac function. In heart failure, the heart's ability to pump blood effectively is compromised, leading to congestion in the venous system and increased hydrostatic pressure within capillaries. This increased pressure causes fluid to leak into surrounding tissues, resulting in edema, particularly in the lower extremities. Pitting edema is characterized by the temporary indentation left in the skin when pressure is applied, which is a distinct feature of fluid accumulation due to increased pressure in the vascular system. While other conditions, such as cardiogenic shock and hypotension, can lead to fluid imbalance, they are usually associated with more generalized or different forms of edema rather than the significant pitting edema typically seen in heart failure. In the context of pulmonary embolism, while there may be some edema present, the mechanism and presentation differ significantly from that of heart failure. Hence, heart failure stands out as the condition most commonly linked to significant pitting edema.

5. Which condition may cause an increase in INR due to liver dysfunction?

- A. Hyperthyroidism**
- B. Left heart failure**
- C. Right heart failure**
- D. Acute kidney injury**

The increase in INR (International Normalized Ratio) due to liver dysfunction is primarily associated with the liver's key role in synthesizing clotting factors. The liver produces several coagulation proteins, including Factors II (prothrombin), VII, IX, and X, which are vital for normal blood clotting. When liver function is compromised, such as in cases of liver disease, the synthesis of these coagulation factors can be reduced, leading to a prolonged prothrombin time and an elevated INR. Among the listed conditions, right heart failure can lead to hepatic congestion due to impaired venous return from the systemic circulation. This congestion can cause liver dysfunction, which in turn affects the liver's ability to produce clotting factors. As a result, INR may increase in patients with right heart failure due to the liver compromise, highlighting the connection between cardiovascular health and liver function. The other conditions listed do not directly imply liver dysfunction in the same way. Hyperthyroidism, left heart failure, and acute kidney injury, while they can have various systemic effects, do not typically result in elevated INR as a direct consequence of liver dysfunction.

6. Which of the following is an assessment method for evaluating physical perfusion?

- A. Respiratory rate**
- B. Skin and pulse examination**
- C. Electrocardiogram**
- D. Complete blood count**

Evaluating physical perfusion is crucial in critical care nursing as it reflects the adequacy of blood flow to tissues. The assessment method that effectively evaluates this aspect is the examination of skin and pulse. Skin examination allows healthcare providers to observe color, temperature, moisture, and capillary refill time, which are vital indicators of peripheral perfusion. For instance, pale, cool skin may suggest inadequate blood flow, while warm, flushed skin could indicate hyperdynamic circulation. Likewise, checking the pulse in various locations helps assess the strength and rate of blood flow throughout the body. Combining these assessments provides a comprehensive view of tissue perfusion, enabling early detection of potential issues that may require intervention, such as shock or other circulatory problems. Other options, while important in different assessments, do not specifically measure physical perfusion directly. For example, respiratory rate primarily indicates respiratory function rather than perfusion status. The electrocardiogram monitors heart rhythm and electrical activity but does not provide direct data on peripheral circulation. A complete blood count gives insights into hematologic status but does not assess circulation directly.

7. What clinical manifestation indicates poor tissue oxygenation?

- A. Hypertension**
- B. Confusion**
- C. Excessive bleeding**
- D. Bradycardia**

Confusion is a clinical manifestation that can indicate poor tissue oxygenation. When the body's tissues are not receiving adequate oxygen, it can lead to a state of hypoxia affecting the brain, which is highly sensitive to oxygen levels. This hypoxia may result in altered mental status, including confusion, disorientation, or even loss of consciousness. The brain requires a continuous supply of oxygen to function properly, and when there is insufficient oxygenation, neural functions become impaired, manifesting as confusion or altered cognitive function. Recognizing confusion as a potential indicator of inadequate oxygen delivery is vital in critical care nursing for assessing patient status and determining the need for interventions to improve oxygenation. In contrast, other choices may not directly reflect poor tissue oxygenation. For example, hypertension primarily relates to increased blood pressure, and while it can have implications for perfusion and oxygen delivery, it does not directly indicate tissue oxygenation issues. Excessive bleeding generally suggests a loss of blood volume rather than an oxygenation problem, while bradycardia signifies a slower heart rate that may or may not be associated with oxygen delivery issues, depending on the context.

8. What is the primary action of colloids in the bloodstream?

- A. Disperse evenly in the body's tissues**
- B. Pull fluid into the bloodstream**
- C. Provide oxygen transport**
- D. Replace lost electrolytes**

Colloids play a critical role in maintaining fluid balance within the bloodstream, primarily through their ability to pull fluid into the vascular compartment. This mechanism is largely due to their high oncotic pressure, which attracts water molecules towards them, thus facilitating the retention of fluid within blood vessels. This is particularly useful in situations where patients may be experiencing hypovolemia or fluid loss, as colloids can help to restore intravascular volume effectively. The key characteristic of colloids is that they are larger molecules, such as albumin or dextran, which do not easily pass through the capillary membranes. Their presence in the bloodstream creates a concentration gradient that draws fluid from the interstitial spaces into the vascular system, thereby increasing blood volume and enhancing circulation. This property is vital in critical care settings, where fluid resuscitation is often necessary. In contrast, other options do not encapsulate the primary function of colloids. While dispersing evenly in the body's tissues relates more to the action of other types of fluids, the provision of oxygen transport is primarily the function of red blood cells, not colloids. Additionally, replacing lost electrolytes pertains to the function of crystalloids or specific electrolyte solutions, rather than colloids, which are more focused

9. What major symptom indicates severe hyponatremia?

- A. Abdominal discomfort
- B. Dizziness
- C. Change in level of consciousness**
- D. Muscle cramps

Severe hyponatremia, characterized by a significantly low sodium concentration in the blood, can lead to various neurological complications, primarily due to the effect of low sodium levels on brain function. One of the most serious manifestations of severe hyponatremia is a change in level of consciousness. This occurs because low sodium levels can cause cerebral edema, resulting in increased intracranial pressure and disturbances in neurological status. Patients may experience confusion, lethargy, seizures, or even coma as sodium levels drop dangerously low. Changes in level of consciousness serve as critical indicators that help healthcare providers recognize the severity of the condition and the need for immediate intervention. While symptoms like dizziness, abdominal discomfort, and muscle cramps can occur with electrolyte imbalances, they do not directly correlate with the significant central nervous system changes seen in severe hyponatremia. Therefore, monitoring for alterations in consciousness is vital, as it reflects the potential for life-threatening complications.

10. What causes stable angina?

- A. Plaque rupture
- B. An imbalance between O₂ delivery and O₂ demand**
- C. Myocardial infarction
- D. Severe dehydration

Stable angina is primarily caused by an imbalance between oxygen delivery to the heart tissue and the oxygen demand of the heart. This condition typically occurs during physical activity or stress, when the heart's demand for oxygen increases. However, if the coronary arteries are narrowed due to atherosclerosis, they may not be able to supply enough oxygen-rich blood to meet this elevated demand, resulting in the characteristic chest pain or discomfort known as angina. In stable angina, this situation is predictable and often resolves with rest or the use of nitroglycerin. The episodes of pain are typically similar in intensity and duration, which differentiates stable angina from unstable angina, where symptoms can vary and occur unpredictably. Understanding the mechanisms behind stable angina helps in recognizing triggers and managing symptoms effectively, often involving lifestyle modifications and medications aimed at improving coronary blood flow or reducing the heart's oxygen demand.