JBL Cardiology Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. Which of the following assessment findings is LEAST suggestive of a cardiac problem?

A. Rapid, irregular heart rate

B. Anxiety and pale, cool skin

C. Palpable pain to the chest

D. Nausea and epigastric pain

2. In which scenario is it contraindicated to administer nitroglycerin?

A. Recent use of aspirin

B. Systolic blood pressure of 100 mm Hg

C. Recent use of erectile dysfunction medication

D. History of myocardial infarction

3. What is the most critical initial information to obtain in a patient suspected of having a stroke?

A. Her initial blood pressure reading.

B. What she was doing when this began.

C. When she was last seen normal.

D. Whether or not her pupils are equal.

4. In assessing a patient with low blood pressure and chest pressure, what is the most crucial action?

A. Request an ALS unit to respond to the scene

B. Reassess her vital signs at least every 5 minutes

C. Assist her with her nitroglycerin if she has any

D. Prepare for immediate transport to the hospital

5. Why is aspirin beneficial during an acute coronary syndrome?

A. Prevents a clot from getting larger.

B. Effectively relieves their chest pain.

C. Decreases cardiac workload by lowering the BP.

D. Destroys the clot that is blocking a coronary artery.

6. What condition is indicated by dyspnea that awakens a patient from sleep, accompanied by crackles in the lungs?

A. Acute asthma attack

B. Congestive heart failure

C. Acute hypertensive crisis

D. Emphysema exacerbation

7. What is the physiological impact of tachycardia on an already compromised heart?

A. It results in increased blood flow to vital organs.

B. It reduces the heart's oxygen demand.

C. It increases the heart's oxygen demand.

D. It leads to improved cardiac output.

8. Which aspect of a patient's history is critical before administering aspirin during a cardiac event?

A. Recent eye surgery

B. History of liver disease

C. Allergy to salicylates

D. Past history of high cholesterol

9. What is one action that helps maximize cardiac output during CPR?

A. Compress the chest at a rate of no more than 100/min

B. Allow the chest to fully recoil between compressions

C. Perform rescue breaths until the chest expands widely

D. Lean on the patient’s chest between compressions

10. What is the best explanation for a patient's chest pressure resolving after resting post-exertion?

A. The patient's blood pressure increased after he ceased exertion, causing his chest pressure to resolve

B. The cessation of exertion decreased the workload of the heart and improved blood flow

C. The aspirin dissolved a small clot in a coronary artery and reestablished blood flow

D. Blood flow was restored due to constriction of a diseased coronary artery

Answers

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

Explanations

1. Which of the following assessment findings is LEAST suggestive of a cardiac problem?

A. Rapid, irregular heart rate

B. Anxiety and pale, cool skin

C. Palpable pain to the chest

D. Nausea and epigastric pain

The assessment finding that is least suggestive of a cardiac problem is palpable pain to the chest. While chest pain can indeed be associated with cardiac conditions, the descriptor "palpable pain" indicates that the pain may have a more superficial origin, such as musculoskeletal issues or other non-cardiac causes, rather than directly stemming from a cardiac event. Cardiac-related chest pain typically presents as a deep, tightening, or squeezing sensation rather than a palpable pain that can be pinpointed. Other options, such as a rapid and irregular heart rate, skin changes, and gastrointestinal symptoms like nausea and epigastric pain, are more closely linked to cardiac distress or conditions possibly leading to cardiac issues. These symptoms reflect more systemic responses or dysfunctions related to the heart's function or even myocardial ischemia.

2. In which scenario is it contraindicated to administer nitroglycerin?

A. Recent use of aspirin

B. Systolic blood pressure of 100 mm Hg

C. Recent use of erectile dysfunction medication

D. History of myocardial infarction

Administering nitroglycerin is contraindicated after the recent use of erectile dysfunction medications, such as sildenafil (Viagra), tadalafil (Cialis), or vardenafil (Levitra). The reason for this is that both nitroglycerin and these medications can cause potent vasodilation, which can lead to significant hypotension (low blood pressure) when used together. The interaction can result in dangerously low blood pressure levels, potentially leading to fainting, shock, or other serious cardiovascular issues. Therefore, it is critical to inquire about the patient's recent medication history regarding erectile dysfunction drugs before administering nitroglycerin to ensure patient safety. In other scenarios provided, such as a recent use of aspirin or a systolic blood pressure of 100 mm Hg, nitroglycerin may still be considered with caution, and a history of myocardial infarction does not inherently contraindicate its use. Thus, the unique interaction between nitroglycerin and erectile dysfunction medications highlights the importance of thorough patient assessment in preventing adverse effects.

3. What is the most critical initial information to obtain in a patient suspected of having a stroke?

A. Her initial blood pressure reading.

B. What she was doing when this began.

C. When she was last seen normal.

D. Whether or not her pupils are equal.

Obtaining information on when the patient was last seen normal is crucial in a suspected stroke case because this time frame significantly influences treatment decisions and interventions. Stroke treatments, such as thrombolysis and thrombectomy, are time-sensitive and effective only within a specific window. For instance, intravenous tissue plasminogen activator (tPA) is ideally administered within 3 to 4.5 hours of symptom onset. Knowing when the patient was last seen normal helps healthcare providers assess eligibility for these time-sensitive interventions, making it a critical piece of information in the acute management of stroke. In contrast, while the initial blood pressure reading, the patient's activities at symptom onset, and the equality of pupils provide valuable information regarding the patient's overall condition and potential complications, they do not directly impact the immediate treatment timeline as the last known well time does. Thus, the timing of the onset of symptoms is the priority in acute stroke assessment.

4. In assessing a patient with low blood pressure and chest pressure, what is the most crucial action?

A. Request an ALS unit to respond to the scene

B. Reassess her vital signs at least every 5 minutes

C. Assist her with her nitroglycerin if she has any

D. Prepare for immediate transport to the hospital

In the context of a patient presenting with low blood pressure and chest pressure, the foremost priority is to ensure the patient receives prompt medical attention, which is why preparing for immediate transport to the hospital is the most crucial action. Low blood pressure combined with chest pressure can indicate a potentially life-threatening condition, such as an acute myocardial infarction or other cardiovascular emergencies that require urgent evaluation and treatment by medical professionals. Immediate transport to the hospital ensures that the patient can receive necessary interventions, such as cardiac monitoring, administration of medications, or even surgical procedures if indicated, which could stabilize their condition. Time is often critical in managing cardiac events, and a delay in transport could worsen the patient's condition. While requesting an ALS unit, reassessing vital signs, and assisting with nitroglycerin may be relevant actions depending on the circumstances, they do not take precedence over the need for immediate transport. If the patient is in a critical state, ongoing monitoring and medication administration can be performed during transport, and advanced life support can be activated in transit if an ALS unit is alerted beforehand.

5. Why is aspirin beneficial during an acute coronary syndrome?

A. Prevents a clot from getting larger.

B. Effectively relieves their chest pain.

C. Decreases cardiac workload by lowering the BP.

D. Destroys the clot that is blocking a coronary artery.

Aspirin is beneficial during an acute coronary syndrome primarily because it prevents a clot from getting larger. In the context of acute coronary syndrome, a blood clot often forms within a coronary artery, which can block blood flow to the heart muscle. Aspirin acts as an antiplatelet agent, inhibiting the aggregation of platelets. This action not only helps to prevent new clots from forming but also reduces the size of existing clots, thereby improving blood flow to the heart muscle. This is critical in minimizing heart damage and improving patient outcomes during an acute event. Other choices do not align with aspirin's primary mechanism of action. While aspirin may indirectly relieve chest pain by improving blood flow, it is not primarily used for pain relief. Additionally, it does not have a direct effect on lowering blood pressure or destroying clots, which are mechanisms associated with different medications or interventions used in interventional cardiology.

6. What condition is indicated by dyspnea that awakens a patient from sleep, accompanied by crackles in the lungs?

A. Acute asthma attack

B. Congestive heart failure

C. Acute hypertensive crisis

D. Emphysema exacerbation

The presence of dyspnea that awakens a patient from sleep, particularly when accompanied by crackles in the lungs, is most indicative of congestive heart failure (CHF). In CHF, the heart's ability to pump effectively is compromised, leading to fluid buildup in the lungs (pulmonary congestion). This condition can cause nocturnal dyspnea, also known as paroxysmal nocturnal dyspnea, where the patient experiences difficulty breathing while lying flat, often leading to awakening from sleep as a result of air hunger. The crackles heard in the lungs during auscultation are a result of fluid in the alveoli, which can occur during episodes of pulmonary congestion. This symptomatology aligns well with CHF, making it the most fitting diagnosis in this scenario. The interaction between heart function and respiratory distress, particularly at night, further supports this conclusion. The other conditions presented are less consistent with the specific symptoms described. Acute asthma attacks are usually characterized by wheezing and not typically associated with awakening from sleep due to sudden shortness of breath in this way. An acute hypertensive crisis might lead to dyspnea due to accompanying left ventricular failure, but it does not typically present at night with awakening. Emphysema exacerbations usually

7. What is the physiological impact of tachycardia on an already compromised heart?

A. It results in increased blood flow to vital organs.

B. It reduces the heart's oxygen demand.

C. It increases the heart's oxygen demand.

D. It leads to improved cardiac output.

Tachycardia, which is defined as an abnormally fast heart rate, can have significant physiological consequences, especially on a heart that is already compromised. When the heart beats faster, it tends to increase the overall demand for oxygen. This occurs because the heart muscle requires more oxygen to sustain its heightened activity; a faster heart rate means that the myocardium (the heart muscle) is working more vigorously. In instances where the heart is already struggling—due to conditions such as heart failure, ischemic heart disease, or any other form of cardiac dysfunction—this increased demand can exacerbate the problem. The compromised heart may not be able to meet the greater oxygen demands, leading to symptoms such as chest pain, fatigue, and worsening heart function. Other options, such as the idea that tachycardia might result in increased blood flow to vital organs or improve cardiac output, do not hold true in the context of a heart that is already compromised. While faster heart rates might initially seem to suggest enhanced blood flow, it often leads to inadequate perfusion, as the heart may not be able to fill properly during the shortened diastolic phase when the heart rate is increased. Thus, the physiological reality of tachycardia in a

8. Which aspect of a patient's history is critical before administering aspirin during a cardiac event?

A. Recent eye surgery

B. History of liver disease

C. Allergy to salicylates

D. Past history of high cholesterol

In the context of administering aspirin during a cardiac event, knowledge of a patient's allergy to salicylates is crucial. Aspirin is a type of salicylate and is commonly used for its antiplatelet properties to help prevent blood clots that can lead to more severe cardiac issues. If a patient has a known allergy to salicylates, administering aspirin can result in adverse reactions that could be severe, such as anaphylaxis, urticaria, or other allergic responses. Therefore, understanding the patient's allergy history helps ensure their safety during acute treatment. The other aspects mentioned do not directly impact the immediate safety and efficacy of aspirin administration in a cardiac emergency. Recent eye surgery, while it may be relevant in various clinical contexts, does not constitute a contraindication for aspirin. A history of liver disease could affect the metabolism of many drugs but would not specifically contraindicate aspirin use in an acute setting. Lastly, a past history of high cholesterol is generally not a factor that would interfere with aspirin administration; it may even highlight the need for aspirin in a patient at risk for cardiovascular events.

9. What is one action that helps maximize cardiac output during CPR?

A. Compress the chest at a rate of no more than 100/min

B. Allow the chest to fully recoil between compressions

C. Perform rescue breaths until the chest expands widely

D. Lean on the patient's chest between compressions

Maximizing cardiac output during CPR is crucial for ensuring that adequate blood flow reaches vital organs. Allowing the chest to fully recoil between compressions is essential because it facilitates the return of blood to the heart. When the chest is compressed, blood is pushed out of the heart and into the circulation; however, if adequate recoil does not occur, the heart cannot refill properly. This results in decreased cardiac output and reduced effectiveness of CPR. During effective chest compression, a full recoil allows negative pressure to develop within the thoracic cavity, which aids in venous return to the heart. This maximizes the amount of blood that can be pumped out on the next compression. Therefore, ensuring that the chest fully recoils is fundamentally important for maximizing cardiac output during CPR. Other options may not be as effective or relevant to improving cardiac output during CPR. For example, limiting the rate of compressions could hinder the flow of blood if it falls below the optimal rate. Performing rescue breaths focuses on breathing and does not directly support the mechanical aspect of circulation as effectively as ensuring full chest recoil does. Leaning on the patient's chest between compressions could impede the chest's ability to recoil fully, further compromising blood return to the heart.

10. What is the best explanation for a patient's chest pressure resolving after resting post-exertion?

A. The patient's blood pressure increased after he ceased exertion, causing his chest pressure to resolve

B. The cessation of exertion decreased the workload of the heart and improved blood flow

C. The aspirin dissolved a small clot in a coronary artery and reestablished blood flow

D. Blood flow was restored due to constriction of a diseased coronary artery

The correct answer highlights how resting after exertion decreases the workload of the heart, which in turn can improve blood flow to the heart muscle. When a patient experiences chest pressure during physical activity, it is often due to an increased demand for oxygen by the heart that may not be met if there are underlying issues such as narrowed coronary arteries. Upon resting, the heart does not have to work as hard, which can relieve the strain and allow for better oxygenation to the heart tissue. This physiological mechanism explains why the chest pressure diminishes after the patient stops exerting themselves. In this context, while other options suggest different mechanisms, they do not accurately capture the straightforward relationship between exertion, workload, and blood flow. For instance, an increase in blood pressure after ceasing exertion does not typically resolve chest pain; rather, it is the reduction in heart workload and subsequent increase in blood supply that alleviates symptoms. Additionally, while aspirin may help in certain scenarios, it does not play a direct role in the immediate response to resting post-exertion by dissolving clots. Similarly, the notion of constriction of a coronary artery providing relief does not align with the physiological response of improved blood flow upon resting.