Lippincott Respiratory Problems Practice Exam (Sample)

Study Guide

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Questions

1. For a child with viral pharyngitis, which of the following treatments is appropriate?

A. Administer amoxicillin

B. Use a cool mist vaporizer

C. Place the child on secretion precautions

D. Administer a daily antibiotic regimen

2. What is the primary concern with a pulmonary embolism?

A. It can cause urinary tract infection

B. It can lead to respiratory alkalosis

C. It can obstruct blood flow and reduce oxygenation

D. It can increase lung compliance

3. Which child is at the highest risk for Sudden Infant Death Syndrome (SIDS)?

A. Infant who is 3 months old

B. 2-year-old who has apnea lasting up to 5 seconds

C. First-born child with parents in their early forties

D. 6-month-old who has had two bouts of pneumonia

4. What is an expected chest finding in a patient with emphysema?

A. Decreased breath sounds

B. Cyanosis of lips and fingers

C. Normal respiratory rate

D. Increased tactile fremitus

5. What may indicate the need for intubation during a respiratory crisis?

A. Excessive coughing

B. Inability to maintain adequate oxygenation or ventilation

C. Persistent wheezing

D. Chest pain

6. What does especially high levels of carbon dioxide in the blood indicate?

- **A. Respiratory infection**
- **B. Pneumothorax**
- **C. Respiratory failure or hypoventilation**
- **D. Physical exercise**

7. What is a common diagnostic test to confirm tuberculosis?

- **A. Chest X-ray**
- **B. Acid-fast bacilli smear and culture**
- **C. Pulmonary function tests**
- **D. Bronchoscopy**

8. What is one way that environmental pollutants can affect lung function?

- **A. They enhance lung tissue repair**
- **B. They help in oxygen delivery**
- **C. They may trigger lung damage or exacerbate existing conditions**
- **D. They increase lung capacity**

9. What does a peak flow meter measure in respiratory health?

- **A. The amount of air inhaled**
- **B. The maximum speed of expiration**
- **C. The total lung capacity**
- **D. The effectiveness of medication**

10. What should the nurse do to facilitate visualization of a child's throat during an examination?

- **A. Remove the tongue blade from the child's hands**
- **B. Ask the child to hold the tongue blade with both hands in their lap**
- **C. Have the parent hold the child with arms restrained**
- **D. Guide the tongue blade while the child is holding it**

Answers

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

Explanations

1. For a child with viral pharyngitis, which of the following treatments is appropriate?

A. Administer amoxicillin

B. Use a cool mist vaporizer

C. Place the child on secretion precautions

D. Administer a daily antibiotic regimen

For a child with viral pharyngitis, the use of a cool mist vaporizer is an appropriate treatment because it helps to soothe the throat and relieve symptoms associated with inflammation and discomfort. Viral pharyngitis typically causes throat pain, swelling, and irritation; humidifying the air can ease these symptoms by keeping the mucous membranes moist, making it easier for the child to breathe and swallow. Viral infections are not caused by bacteria, so antibiotics such as amoxicillin are ineffective in treating viral pharyngitis. Similarly, placing the child on secretion precautions or administering a daily antibiotic regimen is unnecessary and can contribute to antibiotic resistance, as these measures are not validated in the context of viral infections. Therefore, the use of a cool mist vaporizer stands out as a supportive measure to enhance the child's comfort during the illness.

2. What is the primary concern with a pulmonary embolism?

A. It can cause urinary tract infection

B. It can lead to respiratory alkalosis

C. It can obstruct blood flow and reduce oxygenation

D. It can increase lung compliance

The primary concern with a pulmonary embolism is that it can obstruct blood flow and reduce oxygenation. A pulmonary embolism occurs when a blood clot, often originating in the deep veins of the legs, travels to the lungs and gets lodged in one of the pulmonary arteries. This blockage prevents blood from reaching parts of the lung where gas exchange occurs, which is critical for oxygenating the blood. When blood flow is obstructed, the affected lung tissue cannot participate in oxygenation. This leads to hypoxemia, a state of low blood oxygen levels, which can result in inadequate oxygen delivery to the body's organs and tissues. Additionally, depending on the size of the embolism and how many pulmonary arteries are blocked, it can severely impact the overall cardiovascular function and may lead to shock or even death. Other concerns related to pulmonary embolism may include its effects on respiratory function; however, the most immediate problem is the obstruction of blood flow. Understanding the pathophysiology of pulmonary embolism helps reinforce its seriousness and the need for prompt diagnosis and treatment.

3. Which child is at the highest risk for Sudden Infant Death Syndrome (SIDS)?

A. Infant who is 3 months old

B. 2-year-old who has apnea lasting up to 5 seconds

C. First-born child with parents in their early forties

D. 6-month-old who has had two bouts of pneumonia

The highest risk for Sudden Infant Death Syndrome (SIDS) is observed in infants who are in the age group of 1 to 4 months. The onset of SIDS is most prevalent between 2 and 3 months, which makes an infant who is 3 months old particularly vulnerable due to a variety of factors such as developmental stage and sleep patterns. During this period, infants may experience greater fluctuations in breathing and an immature nervous system that affects their ability to arouse from sleep. While the other scenarios involve children who may present various health concerns, they do not align with the typical SIDS risk profile. A 2-year-old with apnea is beyond the primary age range for SIDS; typically, SIDS is a consideration for infants under the age of 1. The first-born child with older parents and the 6-month-old who has had bouts of pneumonia do not have as significant a correlation with the risk factors associated with SIDS as the 3-month-old infant does, given the timing and developmental vulnerabilities. Thus, the 3-month-old infant stands out as being at the highest risk for experiencing SIDS, highlighting the importance of understanding age-related risks when assessing infant safety during sleep.

4. What is an expected chest finding in a patient with emphysema?

A. Decreased breath sounds

B. Cyanosis of lips and fingers

C. Normal respiratory rate

D. Increased tactile fremitus

In patients with emphysema, the destruction of the alveolar walls leads to larger air spaces and reduces the surface area available for gas exchange. This air trapping results in hyperinflation of the lungs, which can create decreased airflow during auscultation. Consequently, decreased breath sounds are commonly noted upon examination. In cases of hyperinflation, the lung volumes increase, and as a result, the normal acoustic transmission of breath sounds diminishes, leading to this expected finding. Cyanosis of lips and fingers, while it may occur in advanced emphysema due to hypoxemia, is not an expected or primary finding. A normal respiratory rate is also not characteristic since patients with emphysema often present with increased respiratory effort and rate due to airway obstruction. Increased tactile fremitus would indicate conditions associated with lung consolidation (like pneumonia), which is not relevant in emphysema where air-filled spaces are prominent. Thus, decreased breath sounds are an expected and characteristic finding in patients with emphysema.

5. What may indicate the need for intubation during a respiratory crisis?

A. Excessive coughing

B. Inability to maintain adequate oxygenation or ventilation

C. Persistent wheezing

D. Chest pain

The necessity for intubation during a respiratory crisis is primarily determined by the patient's ability to maintain adequate oxygenation and ventilation. When a patient is unable to breathe effectively, it can result in compromised oxygen delivery to the tissues, leading to hypoxemia and potential respiratory failure. Intubation is a critical intervention used to secure the airway and provide mechanical ventilation, ensuring that the patient receives sufficient oxygen and can effectively eliminate carbon dioxide. In cases where the patient displays signs like severe respiratory distress, altered consciousness, or high levels of carbon dioxide retention, intubation may become imperative. Monitoring clinical indicators such as oxygen saturation levels and arterial blood gas results assists healthcare providers in making the decision to intubate. Thus, the inability to maintain adequate oxygenation or ventilation is a clear-cut indication for intubation, as it directly addresses the underlying issue of insufficient respiration. Other symptoms, such as excessive coughing, persistent wheezing, or chest pain, may represent significant respiratory distress or related conditions but do not independently necessitate intubation. They can indicate the need for further assessment and intervention but do not specifically highlight a failure of ventilation that demands airway protection and mechanical support.

6. What does especially high levels of carbon dioxide in the blood indicate?

A. Respiratory infection

B. Pneumothorax

C. Respiratory failure or hypoventilation

D. Physical exercise

High levels of carbon dioxide in the blood, known as hypercapnia, typically indicate a failure of the respiratory system to adequately remove carbon dioxide or a decrease in ventilation, which leads to respiratory failure or hypoventilation. This condition can result from various issues, including obstruction of the airways, neuromuscular diseases affecting breathing, or respiratory depression due to certain medications. When the body cannot effectively expel CO_2, the concentration increases in the blood, leading to potential acidosis and other serious respiratory problems. In contrast, respiratory infections may lead to increased breathing rates or changes in CO_2 levels, but they are not the primary cause of sustained high carbon dioxide. Similarly, a pneumothorax could affect gas exchange but typically presents differently and may not always result in elevated carbon dioxide levels unless it significantly impairs respiratory function. Physical exercise, while it does temporarily increase carbon dioxide production due to heightened metabolic demand, is usually accompanied by an increase in respiratory rate that effectively expels CO_2 from the body, thereby preventing significant hypercapnia. Thus, the most accurate interpretation of especially high carbon dioxide levels is indeed linked to respiratory failure or hypoventilation.

7. What is a common diagnostic test to confirm tuberculosis?

A. Chest X-ray

B. Acid-fast bacilli smear and culture

C. Pulmonary function tests

D. Bronchoscopy

A common diagnostic test to confirm tuberculosis is the acid-fast bacilli smear and culture. This test is specifically designed to identify Mycobacterium tuberculosis, the bacteria responsible for tuberculosis. The acid-fast bacilli smear involves staining the sputum samples to detect the presence of the bacteria. A culture can then be grown from the specimen to confirm the diagnosis, as it allows for the identification of the specific strain of the bacteria and helps determine its sensitivity to various antibiotics. This is essential for guiding effective treatment. While a chest X-ray can show abnormalities in the lungs suggestive of tuberculosis, it cannot confirm the presence of the bacteria. Pulmonary function tests assess lung function but do not diagnose infections. Bronchoscopy may be performed in certain cases to sample tissue or secretions from the lungs, but it is not the primary method for confirming a tuberculosis diagnosis. The acid-fast bacilli smear and culture remains the definitive test for diagnosing active tuberculosis.

8. What is one way that environmental pollutants can affect lung function?

A. They enhance lung tissue repair

B. They help in oxygen delivery

C. They may trigger lung damage or exacerbate existing conditions

D. They increase lung capacity

Environmental pollutants can significantly impact lung function through various mechanisms, and one prominent way is their potential to trigger lung damage or exacerbate existing respiratory conditions. Pollutants such as particulate matter, ozone, nitrogen dioxide, and volatile organic compounds can irritate the airways, leading to inflammation. This inflammatory response can worsen conditions like asthma or chronic obstructive pulmonary disease (COPD), causing symptoms such as increased breathlessness, wheezing, and coughing. Additionally, long-term exposure to these pollutants can contribute to structural changes in lung tissue, impairing its overall function. These effects can lead to decreased lung capacity and negatively impact oxygen transport and overall respiratory health. This understanding highlights the importance of addressing environmental factors to promote better lung health and prevent respiratory diseases.

9. What does a peak flow meter measure in respiratory health?

A. The amount of air inhaled

B. The maximum speed of expiration

C. The total lung capacity

D. The effectiveness of medication

A peak flow meter is an important tool used in respiratory health to measure the maximum speed at which a person can forcibly exhale air from their lungs, which is crucial for assessing lung function. This measurement, known as peak expiratory flow rate (PEFR), helps in monitoring conditions such as asthma and other obstructive airway diseases. The ability to measure the maximum speed of expiration provides vital information about the airway's status and can indicate whether the airways are narrowing or if there are any obstructions. By regularly monitoring peak flow readings, patients and healthcare providers can better manage respiratory issues, tailor treatment plans, and identify early signs of asthma exacerbations or other breathing problems. While the other options mention important aspects of respiratory health, they do not pertain specifically to the function of a peak flow meter. For instance, the amount of air inhaled would typically be measured by a spirometer, total lung capacity involves more comprehensive lung evaluation, and the effectiveness of medication would require different assessment techniques, such as monitoring symptoms or conducting lung function tests.

10. What should the nurse do to facilitate visualization of a child's throat during an examination?

A. Remove the tongue blade from the child's hands

B. Ask the child to hold the tongue blade with both hands in their lap

C. Have the parent hold the child with arms restrained

D. Guide the tongue blade while the child is holding it

To effectively visualize a child's throat during an examination, it's essential to maintain a balance of cooperation and safety. Guiding the tongue blade while the child is holding it allows the nurse to support the child in a way that encourages participation in the process. This method fosters a sense of control and involvement, which can help reduce anxiety and make the examination less intimidating for the child. By having the child hold the tongue blade, it can also promote their engagement and comfort levels. This approach is particularly important in pediatric care, where children can be sensitive to the dynamics of medical examinations. Additionally, the nurse can use their expertise to ensure that the tongue blade is positioned correctly for optimal visualization, while the child feels empowered rather than restrained. In contrast, other options may not facilitate a child-friendly environment. For example, removing the tongue blade from the child's hands or asking them to hold it in their lap does not make use of their ability to cooperate in the examination. Having a parent physically restrain the child may cause increased anxiety and fear, leading to resistance rather than cooperation. Maintaining a gentle, collaborative approach as described in the correct answer fosters a more positive experience for the child during the examination.