Kettering Registered Respiratory Practice Exam (Sample)

Study Guide

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Questions

1. What is the recommended maximum pressure for continuous positive airway pressure (CPAP) therapy?

A. 15 cm H2O

B. 25 cm H2O

C. 20 cm H2O

D. 30 cm H2O

2. What is the primary indication for intubation?

A. For performing a bronchoscopy

B. To deliver aerosolized medications

C. To secure the airway in a patient with respiratory failure or inability to protect the airway

D. For nutritional support through a feeding tube

3. Which of the following measurements should be included in outcome measurements for a respiratory therapy in-service program?

A. Respiratory therapy ordered

B. Length of patient hospital stay

C. Patient's room number

D. Admitting diagnosis

4. What should a respiratory therapist do if a patient develops dyspnea and crepitus after a tracheostomy tube change?

A. Suction the patient

B. Insert a larger tracheostomy tube

C. Reposition the tracheostomy tube

D. Administer an antihistamine

5. Which of the following is a vital nursing intervention for patients receiving steroid therapy?

A. Increase fluid intake

B. Monitor for signs of infection and hyperglycemia

C. Encourage regular exercise

D. Assess lung sounds every hour

6. In assessing patients for hypoventilation, which vital sign is most critical to monitor?

A. Heart rate

B. Blood pressure

C. Respiratory rate

D. Temperature

7. Which assessment tool is used to monitor for sleep apnea?

A. Polysomnography

B. Bronchoscopy

C. Chest X-ray

D. Pulmonary function tests

8. What change should be made for a patient on volume cycled, pressure limited ventilation with diminished breath sounds and auto-PEEP at 8 cmH2O?

A. Increase inspiratory time

B. Increase inspiratory flow

C. Decrease the triggering effort

D. Add pressure support at 8 cmH2O

9. What is the likely diagnosis for a 44-week gestational age infant exhibiting gasping, grunting, and low Apgar scores after delivery?

A. Transient tachypnea of the newborn

B. Meconium aspiration

C. Bronchopulmonary dysplasia

D. Apnea of prematurity

10. What is the most suitable test to evaluate partial vocal cord paralysis in a patient experiencing difficulty swallowing?

A. SB nitrogen elimination

B. Maximum voluntary ventilation

C. Flow volume loop

D. Diffusion capacity

Answers

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

Explanations

1. What is the recommended maximum pressure for continuous positive airway pressure (CPAP) therapy?

A. 15 cm H2O

B. 25 cm H2O

C. 20 cm H2O

D. 30 cm H2O

In the context of CPAP therapy, the recommended maximum pressure typically falls around 20 cm H2O. This level is deemed effective for treating conditions such as obstructive sleep apnea, where maintaining an adequate airway during sleep is critical. Pressures above this level may be necessary for some patients, but they often increase the risk of discomfort, aerophagia (air swallowing), and potential side effects. Clinicians generally start with lower pressures and adjust based on patient comfort and the effectiveness of treatment. A threshold of 20 cm H2O strikes a balance between efficacy in maintaining airway patency and minimizing adverse effects. This standard aligns with guidelines and established practices in respiratory therapy. Other options suggest higher pressures, which, while they can be appropriate in specific clinical scenarios, are not recommended as a general maximum for most patients. Maintaining CPAP pressure at or below 20 cm H2O ensures patient compliance and safety, making it the best choice among the provided options.

2. What is the primary indication for intubation?

A. For performing a bronchoscopy

B. To deliver aerosolized medications

C. To secure the airway in a patient with respiratory failure or inability to protect the airway

D. For nutritional support through a feeding tube

The primary indication for intubation is to secure the airway in a patient who is experiencing respiratory failure or has an inability to protect their airway. In clinical practice, ensuring that the airway remains open and functional is crucial, especially in cases where patients are unable to breathe adequately on their own due to various conditions, such as severe respiratory distress, coma, or significant neurological impairment. Intubation allows for the establishment of a clear airway, enabling mechanical ventilation if necessary and protecting the airway from aspiration. Performing a bronchoscopy and delivering aerosolized medications may require an intact airway but are not the primary reasons for intubation. These procedures generally occur when the airway has already been secured. Nutritional support through a feeding tube is also unrelated to the purpose of intubation, as feeding tubes are utilized for providing nutrition rather than securing the airway. The main focus of intubation is to manage and maintain respiratory function effectively.

3. Which of the following measurements should be included in outcome measurements for a respiratory therapy in-service program?

A. Respiratory therapy ordered

B. Length of patient hospital stay

C. Patient's room number

D. Admitting diagnosis

Including respiratory therapy ordered as an outcome measurement in a respiratory therapy in-service program is essential because it directly reflects the clinical interventions provided during patient care. This measurement provides valuable insights into the utilization of respiratory therapy services and can help evaluate the effectiveness of the in-service training. By tracking the frequency and types of respiratory therapies ordered, healthcare providers can assess whether the training has positively influenced the treatment protocols or the decision-making processes of the clinical staff. In contrast, length of patient hospital stay, while relevant to overall patient management, does not specifically reflect the quality or effectiveness of respiratory therapy in a direct manner. Similarly, a patient's room number is not relevant as it does not provide any clinical outcome data or relate to respiratory therapy performance. The admitting diagnosis, although important for other aspects of patient care, does not specifically measure the outcomes of respiratory therapy activities and may not indicate how well the therapy program is functioning in terms of patient improvement or compliance with treatment regimens. Therefore, focusing on respiratory therapy ordered aligns better with measuring the effectiveness and improvement of clinical practices in the context of the in-service program.

4. What should a respiratory therapist do if a patient develops dyspnea and crepitus after a tracheostomy tube change?

A. Suction the patient

B. Insert a larger tracheostomy tube

C. Reposition the tracheostomy tube

D. Administer an antihistamine

When a patient develops dyspnea (difficulty breathing) and crepitus (a crackling sound or sensation under the skin) after a tracheostomy tube change, the primary concern is often related to the proper positioning and placement of the tracheostomy tube. Repositioning the tracheostomy tube may help alleviate any obstruction or irritation that could be causing the dyspnea. Crepitus can indicate subcutaneous emphysema or air escaping into surrounding tissues, which may also be affecting the airway's patency. By carefully repositioning the tracheostomy tube, a respiratory therapist can ensure that the airway is clear and that the tube is properly placed in the trachea, thus improving the patient’s ability to breathe comfortably. Suctioning the patient might be appropriate if there is an obvious issue with airway secretions, but considering the recent tube change and the presence of crepitus, repositioning is more critical at this moment. Inserting a larger tube could pose further complications if it’s not warranted or appropriate for the patient, and administering an antihistamine is unlikely to address the immediate airway concerns related to the mechanical aspects of the tracheostomy tube. Therefore, repositioning the tracheost

5. Which of the following is a vital nursing intervention for patients receiving steroid therapy?

A. Increase fluid intake

B. Monitor for signs of infection and hyperglycemia

C. Encourage regular exercise

D. Assess lung sounds every hour

Monitoring for signs of infection and hyperglycemia is a critical nursing intervention for patients receiving steroid therapy because these medications can significantly affect the body's immune response and glucose metabolism. Corticosteroids, like those commonly used for a variety of conditions such as asthma, COPD, and autoimmune disorders, suppress the immune system, making patients more susceptible to infections. Nurses need to closely observe for symptoms such as fever, chills, or unusual fatigue that may indicate an infection. Additionally, glucocorticoids can increase blood glucose levels, leading to hyperglycemia. This is especially important in patients with pre-existing diabetes, but even those without may experience elevated glucose levels while on steroids. Monitoring blood sugar levels and being alert for signs such as increased thirst, frequent urination, or fatigue is essential to manage the patient's overall health effectively. Given these factors, focusing on infection and hyperglycemia is paramount to ensure patient safety and to promote the best possible outcomes during steroid therapy.

6. In assessing patients for hypoventilation, which vital sign is most critical to monitor?

A. Heart rate

B. Blood pressure

C. Respiratory rate

D. Temperature

Monitoring respiratory rate is critical when assessing patients for hypoventilation because it directly reflects their breathing effort and effectiveness in gas exchange. In hypoventilation, the respiratory rate is typically reduced, leading to increased levels of carbon dioxide (hypercapnia) and reduced oxygen levels (hypoxia) in the blood. By tracking the respiratory rate, healthcare providers can detect abnormalities in breathing patterns that may indicate insufficient ventilation. In patients who are hypoventilating, you may observe a significantly diminished respiratory rate, or irregular breathing that might not adequately ventilate the lungs. This can help determine the severity of respiratory distress and the need for intervention, such as supplemental oxygen or mechanical ventilation, to ensure adequate gas exchange and maintain oxygenation. While heart rate, blood pressure, and temperature are important vital signs and can provide additional context about a patient's overall status, they are not as closely tied to the immediate assessment of ventilation as the respiratory rate is. Monitoring the respiratory rate allows for prompt identification and management of hypoventilation, which is essential in preventing further complications.

7. Which assessment tool is used to monitor for sleep apnea?

A. Polysomnography

B. Bronchoscopy

C. Chest X-ray

D. Pulmonary function tests

Polysomnography is the assessment tool used to monitor for sleep apnea. It is a comprehensive test that records various physiological parameters while a person sleeps. This test provides crucial information, including brain activity, eye movement, muscle tone, heart rate, respiratory effort, and blood oxygen levels. By capturing these parameters, polysomnography enables healthcare providers to diagnose sleep disorders, particularly obstructive sleep apnea, which is characterized by repeated episodes of airway obstruction during sleep. Other options do not serve the specific purpose of diagnosing or monitoring sleep apnea. Bronchoscopy is used to visualize and potentially treat conditions in the airways and lungs, while a chest X-ray primarily assesses lung structure and can identify various pulmonary conditions. Pulmonary function tests measure how well the lungs are functioning, focusing on airflow, lung volume, and gas exchange, but they do not directly assess sleep quality or apnea events. Thus, polysomnography is indeed the correct choice for monitoring sleep apnea.

8. What change should be made for a patient on volume cycled, pressure limited ventilation with diminished breath sounds and auto-PEEP at 8 cmH2O?

A. Increase inspiratory time

B. Increase inspiratory flow

C. Decrease the triggering effort

D. Add pressure support at 8 cmH2O

In the scenario described, the patient is on volume-cycled, pressure-limited ventilation, experiencing diminished breath sounds and auto-PEEP at 8 cmH2O. Increasing the inspiratory flow is a correct adjustment in this context, as it can help to reduce the duration of inspiration. This is especially beneficial in cases where auto-PEEP is present, as it can mitigate the effects of air trapping by minimizing the time the ventilator is delivering gas to the patient. When inspiratory flow is increased, the delivery of tidal volume occurs more quickly, which can lead to shorter inspiratory times and allow for a sufficient expiratory phase. This can help prevent the development of excessive auto-PEEP, which can occur when the patient does not have enough time to exhale fully before the next breath is delivered. Therefore, an increase in inspiratory flow allows for improved ventilation and enhances the patient's ability to breathe more effectively by minimizing the risk of dynamic hyperinflation and maintaining adequate ventilation. The changes suggested by the other choices, such as increasing inspiratory time or decreasing the triggering effort, would not resolve the issues presented by auto-PEEP and diminished breath sounds effectively. Adding pressure support may also not directly address the immediate concern of auto-

9. What is the likely diagnosis for a 44-week gestational age infant exhibiting gasping, grunting, and low Apgar scores after delivery?

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B. Meconium aspiration

C. Bronchopulmonary dysplasia

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In this scenario, the symptoms exhibited by the 44-week gestational age infant—gasping, grunting, and low Apgar scores—suggest a respiratory distress that may be due to meconium aspiration. Meconium is the first stool of the newborn, and if it is present in the amniotic fluid, it can be aspirated into the lungs during or after delivery. This can lead to obstruction of the airways, chemical pneumonitis, and resultant respiratory distress, characterized by grunting and gasping sounds as the infant struggles for adequate breathing. The low Apgar scores further indicate the infant's difficulty in transitioning to breathing air and maintaining adequate oxygenation, which is common in cases of meconium aspiration syndrome. Clinically, meconium aspiration can present with tachypnea, grunting, and, in severe instances, cyanosis, all of which align with the symptoms described in this case. While transient tachypnea of the newborn can also cause respiratory distress, it typically occurs shortly after birth due to retained fetal lung fluid and does not usually lead to gasping or grunting to the same extent. Bronchopulmonary dysplasia is more associated with premature infants needing prolonged mechanical ventilation, and apnea

10. What is the most suitable test to evaluate partial vocal cord paralysis in a patient experiencing difficulty swallowing?

A. SB nitrogen elimination

B. Maximum voluntary ventilation

C. Flow volume loop

D. Diffusion capacity

The most suitable test to evaluate partial vocal cord paralysis in a patient experiencing difficulty swallowing is the flow volume loop. This test provides critical information regarding airway dynamics and can help identify issues with airway obstruction, which may be indicative of vocal cord function. In patients with vocal cord paralysis, the flow volume loop can demonstrate characteristic changes, such as reduced peak expiratory flow rates or a flattened loop, reflecting how the vocal cords may not fully abate airflow, potentially leading to aspiration and swallowing difficulties. The flow volume loop allows healthcare providers to assess the pattern of flow during respiration, which is essential when investigating conditions related to the vocal cords. Other tests, while useful for evaluating lung function or gas exchange, do not specifically assess vocal cord mobility or respiratory mechanics related to swallowing. For instance, nitrogen elimination is primarily used to assess the integrity of gas exchange in the lungs, while maximum voluntary ventilation measures the breathing capacity of a patient, which may not address vocal cord issues directly. Similarly, diffusion capacity focuses on the ability of the lungs to transfer gas and is not specific to vocal cord function. Therefore, the flow volume loop stands out as the most appropriate test for this scenario.