

Role of Oxygen Therapy in Whooping Cough

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ABOUT THE STUDY

Whooping cough, also known as pertussis, is a highly contagious respiratory disease caused by the bacterium *Bordetella pertussis*. It is characterized by severe coughing fits, which can be so intense that they lead to complications, especially in infants and young children. Oxygen therapy plays a crucial role in managing whooping cough, as it helps ensure that patients receive adequate oxygen to support their respiratory function and recovery.

Understanding whooping cough

Whooping cough primarily affects the respiratory system, leading to the following symptoms:

Paroxysms of coughing: The distinguishing feature of whooping cough is severe coughing fits. These fits can be so violent that they are accompanied by a characteristic "whooping" sound as the patient gasps for breath.

Post-cough vomiting: Coughing fits can be exhausting and may lead to vomiting, which further strains the respiratory system.

Difficulty breathing: As the disease progresses, patients may experience difficulty breathing, especially during coughing episodes.

Cyanosis: In severe cases, decreased oxygen levels in the blood can lead to cyanosis, a bluish discoloration of the skin and mucous membranes.

Complications: Infants and young children, particularly those under the age of one, are at a higher risk of experiencing severe complications, including pneumonia, seizures, and encephalopathy.

Role of oxygen therapy

Oxygen therapy is a fundamental component of managing whooping cough, serving several critical purposes in patient care:

Oxygen saturation maintenance: Severe coughing fits can lead to oxygen desaturation, where the level of oxygen in the bloodstream drops below normal. Oxygen therapy helps

maintain adequate oxygen saturation levels, preventing hypoxia (insufficient oxygen supply to tissues) and its associated complications.

Alleviating respiratory distress: Whooping cough can cause significant respiratory distress, especially in young children and infants. Administering supplemental oxygen helps relieve breathing difficulties and reduces the strain on the respiratory system.

Cyanosis resolution: Oxygen therapy is vital in addressing cyanosis, which indicates a severe decrease in oxygen levels in the blood. Providing oxygen helps reverse cyanosis and restore normal skin color.

Preventing complications: Ensuring that patients receive sufficient oxygen reduces the risk of complications such as pneumonia and encephalopathy, which can occur when the respiratory system is under strain due to persistent coughing.

Supporting the healing process: Adequate oxygen levels are essential for the body's healing processes. By delivering supplemental oxygen, healthcare providers assist the patient's immune system in fighting the infection and recovering from the disease.

Methods of oxygen therapy

Several methods can be used to administer oxygen therapy to individuals with whooping cough:

Nasal cannula: A nasal cannula is a small, flexible tube with prongs that fit into the patient's nostrils. It is a non-invasive method commonly used for patients who require low to moderate levels of oxygen.

Oxygen mask: This covers the nose and mouth, delivering a higher concentration of oxygen compared to a nasal cannula. They are often used when more substantial oxygen supplementation is necessary.

High-flow oxygen: It delivers a precise concentration of oxygen at a high flow rate, making it suitable for patients with severe respiratory distress.

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Continuous Positive Airway Pressure (CPAP): It is a method that delivers a continuous flow of air with an elevated oxygen concentration. It is used in more severe cases to maintain open airways and improve breathing.

Mechanical ventilation: In extreme cases, when patients cannot breathe adequately on their own, mechanical ventilation may be required. This involves the use of a ventilator to support the patient's breathing and oxygenation.

Monitoring and adjustment

Oxygen therapy in whooping cough is not a one-size-fits-all approach. It requires careful monitoring and adjustment based on the patient's specific needs. Healthcare providers continuously assess the patient's respiratory status and oxygen saturation levels to determine the appropriate oxygen delivery method and flow rate.

Whooping cough, with its debilitating coughing fits and potential for severe complications, requires diligent management to ensure patient recovery. Oxygen therapy is a critical component of this management, helping to alleviate respiratory distress, maintain oxygen saturation, and reduce the risk of complications.

Early diagnosis, proper medical care, and oxygen therapy can significantly improve outcomes for individuals affected by whooping cough, particularly infants and young children who are at the highest risk of severe illness. As healthcare providers continue to refine their approaches to managing this infectious disease, oxygen therapy remains a lifeline in the fight against whooping cough, offering patients the support they need to breathe easier and recover more effectively.