



Treating Pertussis in Neonates: Supportive Care and Antimicrobial Therapy

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DESCRIPTION

Pertussis, also known as whooping cough, is a highly contagious respiratory infection caused by the bacterium *Bordetella pertussis*. While pertussis affects individuals of all ages, it poses a particularly significant threat to neonates. Infants under the age of one, especially those who are too young to be fully vaccinated, are at a higher risk of severe complications and even death [1].

Neonates typically acquire pertussis from close contact with an infected individual, often a parent or caregiver who may not even realize they have the infection. Pertussis is highly contagious and spreads through respiratory droplets expelled during coughing or sneezing [2]. When an infected person coughs or sneezes, the bacteria are released into the air and can be inhaled by others nearby, including vulnerable newborns.

Pertussis in neonates can initially present with mild symptoms, making it challenging to diagnose early. The early symptoms resemble those of a common cold and may include a runny nose, low-grade fever, and a mild cough [3]. However, as the infection progresses, the cough becomes more severe and distinct. Infants may experience repetitive coughing spells followed by a characteristic "whoop" sound as they gasp for air. Other symptoms can include cyanosis (bluish discoloration of the skin), vomiting after coughing, and exhaustion [4].

Diagnosing pertussis in neonates can be challenging due to the nonspecific symptoms and the resemblance to other respiratory infections. A healthcare provider will typically consider the infant's clinical presentation and perform laboratory tests to confirm the diagnosis [5]. Nasopharyngeal swabs or aspirates are collected to detect the presence of *Bordetella pertussis* bacteria through culture or molecular testing, such as Polymerase Chain Reaction (PCR).

The treatment of pertussis in neonates involves a combination of supportive care and appropriate antimicrobial therapy. Hospitalization is often necessary to monitor the infant closely and provide necessary interventions [6]. Supportive care includes ensuring proper hydration, maintaining adequate oxygen levels,

and managing symptoms such as coughing and feeding difficulties.

Antibiotics, such as azithromycin, clarithromycin, or erythromycin, are typically prescribed to treat pertussis. Early initiation of antimicrobial therapy can help reduce the severity and duration of symptoms and prevent the spread of the infection to others [7]. It is crucial for healthcare providers to closely monitor neonates receiving antibiotics to identify and manage any potential side effects.

Preventing pertussis in neonates primarily involves a multifaceted approach that includes vaccination, cocooning, and raising awareness. Immunization is the most effective strategy to prevent pertussis. Neonates are too young to receive the full course of pertussis vaccinations, but their protection can be ensured through the concept of cocooning [8]. Cocooning involves vaccinating all individuals who come into close contact with the newborn, including parents, siblings, and caregivers. By vaccinating the surrounding individuals, the risk of transmitting pertussis to the vulnerable infant is significantly reduced [9].

Healthcare providers should emphasize the importance of pertussis vaccination during prenatal visits and provide guidance on the vaccination schedule for family members. Additionally, promoting respiratory hygiene practices, such as covering the mouth and nose while coughing or sneezing, regular handwashing, and staying away from newborns when experiencing respiratory symptoms, can help prevent the transmission of pertussis [10].

Pertussis, or whooping cough, is a highly contagious respiratory infection that poses a significant risk to neonates. Infants under the age of one, particularly those who are too young to be fully vaccinated, are more susceptible to severe complications and even death from pertussis. Understanding the causes, symptoms, diagnosis, treatment, and prevention of pertussis in neonates is crucial for healthcare professionals and parents alike.

Neonates primarily contract pertussis through close contact with infected individuals, often parents or caregivers who may not be aware they have the infection. The bacterium *Bordetella*

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pertussis is spread through respiratory droplets expelled during coughing or sneezing. When an infected person coughs or sneezes, the bacteria are released into the air and can be inhaled by vulnerable newborns.

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