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Kingella Kingiae: Emerging Outbreaks in Daycare Facilities

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Pathophysiology

In the majority of cases, Kingella organisms colonize the pharynx. Kingella kingae is a Gram-negative, facultatively anaerobic bacterium that is non-motile, non-sporulating, and non-endospore forming. Its identification is typically facilitated by Gram staining and positivity for oxidase and catalase reactions. Kingella kingae is often associated with the colonization of mucous membranes, particularly in the oropharynx.

The pathogenicity of Kingella kingae is multifaceted and involves various mechanisms. These include the production of pyrogenic exotoxins, which can cause fever, and the ability to colonize the pharynx and other mucosal surfaces. Kingella kingae also has the capacity to disseminate to remote sites, such as the bloodstream, where it can cause Kingella kingae bacteremia. This can lead to multisystemic involvement, including infections of the bone and joint, skin and soft tissue, and the heart.

Signs and Symptoms

Kingella kingae infection is typically asymptomatic or can present with mild symptoms. However, in outbreaks, children may present with symptoms similar to those of other common infections, such as upper respiratory infections, pharyngitis, and gastrointestinal illnesses. Fever, sore throat, and cough are common symptoms. Other symptoms may include malaise, anorexia, vomiting, and diarrhea.

Implications for Nursing

Nursing implications for Kingella kingae outbreaks include careful attention to symptom monitoring, isolation and infection control measures, and prompt reporting of cases. Early detection and reporting are crucial to prevent the spread of infection.

References Cited


Additional References


Who is at Risk?

Children and adults are at risk for Kingella kingae infection.

- Children are at risk due to the colonization of the nasopharynx by this bacterium.
- Adults are at risk in outbreaks or when exposed to large numbers of infected individuals, such as in daycare settings.

- The risk of infection is higher in children under the age of 3 years.
- Children with underlying medical conditions, such as immunodeficiency or chronic inflammation, may be at higher risk.

- Family members or caretakers of infected children may also be at risk of acquiring the infection.

Significance of Pathophysiology

Kingella kingae is an emerging pathogen recognized as an opportunistic pathogen of joint and bone infection in young children. In recent years, many outbreaks have been reported in daycare and childcare facilities, highlighting the potential for community transmission and the importance of prompt detection and control measures.

- The pathogenicity of Kingella kingae is multifaceted and involves various mechanisms, including the production of pyrogenic exotoxins, which can cause fever, and the ability to colonize the pharynx.
- Kingella kingae has the capacity to disseminate to remote sites, such as the bloodstream, leading to multisystemic involvement, including infections of the bone and joint, skin and soft tissue, and the heart.

- The identification and early detection of Kingella kingae infections are crucial to prevent the spread of infection and to provide timely treatment.

- The clinical presentation of Kingella kingae infections is often nonspecific, making early recognition and reporting critical.

- The implementation of infection control measures, such as hand hygiene and environmental cleaning, is essential to prevent the spread of infection in daycare settings.

- The prompt reporting of cases to local and state health departments is crucial to monitor the epidemiology of Kingella kingae infections and to guide public health interventions.

- Healthcare providers should remain vigilant for the emergence of Kingella kingae infections and be prepared to consider this pathogen in the differential diagnosis of febrile illnesses in children.

- The ongoing surveillance and research efforts are necessary to better understand the epidemiology and pathogenesis of Kingella kingae infections.