

Erysipelothrix rhusiopathiae

Template:Infobox - bakterie The genus Erysipelothrix includes 3 species, of which **only the Erysipelothrix rhusiopathiae is pathogenic to humans**. E. rhusiopathiae is a non-sporulating, facultatively anaerobic, G-positive rod. The rods are slender, with the size of 0.2-0.5 × 0.8-2.5 micrometers with rounded ends. They are arranged individually, in pairs, or chains. It forms filaments up to 60 micrometers long.

Occurrence

This bacteria is widespread **worldwide**. It occurs in both wild and domestic animals. The reservoir is usually pigs or turkeys, but also fish, birds and mammals. It is found in soil and contaminated water. Transmission takes place through direct contact from one animal to another. Bacteria usually colonize the tonsils or digestive tract of many animals. The bacteria are resistant to drying out and can survive in the soil for several months or years. It is also resistant to higher salt concentrations. It is one of the zoonoses, meaning it can be transmitted from animals to humans.

Virulence factors

Virulence factors include the enzyme **neuraminidase, hyaluronidase, and the polysaccharide capsule**. Neuraminidase allows attachment to epithelial cells and the polysaccharide capsule protects bacteria from phagocytosis.

Disease

It is the cause of a disease known as swine fever - rhusiopathia. Manifestations of the disease are usually cutaneous or septic associated with endocarditis. Erysipeloid is an inflammatory skin disease. The incubation period is 2-7 days. The lesions are usually visible on the fingers or hands and they are purple with a raised edge. The coloration is weaker at the edge. The rods are located only in the deep layers of the lesions. Painful lesions itch, burn and they are hot. They can be cured spontaneously or with ATB. Endocarditis is common for alcoholics and can be acute or subacute. Bacteria damage originally undamaged heart valves (mainly aortic). Other systemic infections such as osteomyelitis, meningitis, brain abscesses are relatively rare. Immunity does not develop after the illness. It is a disease mainly of butchers, veterinarians, farmers and fish sellers.

Diagnostics

Cultivation

Erysipelothrix rhusiopathiae is very challenging to culture. The bacteria are microaerophilic, preferring an atmosphere with reduced oxygen and enriched with carbon dioxide (5-10%). They prefer soil enriched with glucose or serum and alkaline pH. Small, gray, alpha-hemolytic colonies are visible 2-3 days after the start of incubation.

Biochemistry

It forms hydrogen sulfide, is catalase and oxidase negative. It breaks down glucose slowly without gas formation.

Therapy

Penicillin (or cephalosporins, fluoroquinolones, erythromycin, clindamycin) is used for treatment, this bacterium is resistant to vancomycin. As a precaution, people working with animals and animal products should protect their skin. Pigs should be vaccinated.

Links

Related articles

- Erysipeloid

Sources

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