



Pathogenesis of *Streptococcus Pneumonia*

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DESCRIPTION

The genus *streptococci* are a group of bacteria that has wide significance in medicine and industrial processes. Some of its members cause serious illnesses such as scarlet fever and rheumatic heart disease. The term *streptococci* have been used to refer to the bacterial subclasses that cause severe infections. The two most notable types that cause severe infections are *S pyogenic* and *S pneumonia*. *Streptococcus pneumonia* (pneumococcus) could even be a Gram-positive bacterium that's liable for the bulk of community-acquired *pneumonia*. It's a commensal organism within the human tract, meaning that it benefits from the physical body, without harming it. However, infection by pneumococcus could even be dangerous, causing not only *pneumonia*, but also bronchitis, otitis, septicemia, and meningitis.

Human diseases caused by the *streptococci* infections usually occur in the respiratory tract, the bloodstream, or the skin. They are most commonly associated with acute respiratory infections. Late immunologic sequelae are triggered by the spread of bacteria or viruses that can cause systemic infections. They are considered a major global health concern. *S pneumonia* is the leading cause of serious systemic infections and is regarded as the most common cause of community-acquired *pneumonia* in the US. *Streptococcus pneumonia* are lancet-shaped, gram-positive, facultative anaerobic bacteria with 100 known serotypes. Most *S. pneumonia* serotypes can cause disease, but only a minority of serotypes produce the majority of pneumococcal infections.

Pneumococci are common inhabitants of the respiratory tract. The bacteria may be isolated from the nasopharynx of 5-90% of healthy persons, depending on the population and setting are 5-10% of adults without children are carriers, 20-60% of school-aged children may be carriers and 50-60% of service personnel on military installations may be carriers.

Hemorrhagic shock is a common consequence of *pneumonias*. The bacteria *streptococcus pneumonia* can cause severe illness in children

and the elderly. The most common cause of middle ear infections, sepsis in children and *pneumonia* in immune compromised individuals and the elderly. It can also cause infections in the brain and spinal cord. Invasive is when it is found in the body's normal locations. Experiencing a variety of illnesses can be caused by the *streptococcus pneumonia*. Some of these include sinusitis, earitis media, *pneumonia*, septic arthritis, and osteomyelitis. Pneumococcal disease is caused by common bacteria (*Streptococcus pneumonia*) that can attack different parts of the body. When these bacteria invade the lungs, they can cause *pneumonia*; when they invade the bloodstream, they can cause sepsis; and when they invade the covering of the brain, they can cause meningitis.

Symptoms

The usual symptoms of an infected person include fever, cough, chest pain, muscle aches, and joint pain. In severe cases, this illness can cause hearing loss, brain injury, and death.

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Streptococcus pneumonia's capsule prevents it from infecting other organisms. This prevents it from evading the host's defense mechanism. The inflammatory response induced by the cell walls of Gram-positive organisms differs from that of negative organisms. It involves the recruitment of polymorph nuclear cells and the activation of the platelet-activating factor. The role of various *Streptococcus pneumonia* moieties is not clear. Among the complications of *Streptococcus pneumonia* is pulmonary effusion. Pleural effusion is a common cause of *Streptococcus pneumonia* pulmonary edema. Dissemination from a respiratory focus results in serious disease: outpatient bacteremia in children, meningitis, and occasionally acute septic arthritis and bone infections in patients with sickle cell disease and, more rarely, peritonitis (especially in patients with nephritic syndrome) or endocarditis.

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