

T The Transforming Streptococcus Pneumoniae in the 21st Century

李文生

Hsieh YC;Lee WS;Shao PL;Chang LY;Huang LM

摘要

Abstract

Streptococcus pneumoniae, an important pathogen causing sepsis, sinusitis, otitis media, bacterial meningitis and bacterial pneumonia, results in global morbidity and mortality each year. The burden of pneumococcal disease is highest in children and the elderly. Treatment of pneumococcal infection has been hampered by the complexity of the host immune response. In recent decades, the increase of S. pneumoniae strains' resistance to beta-lactam antibiotics and other classes of antimicrobials has made treatment even more complicated. Fortunately, the advent of heptavalent conjugate vaccine confers a high degree of protection against pneumococcal disease and colonization caused by vaccine serotype strains. After the introduction of conjugate pneumococcal vaccine, invasive pneumococcal disease caused by vaccine serotypes and antibiotic-resistant isolates has been reduced. However, naturally transformable pneumococci may escape vaccine-induced immunity by switching their capsular genes to non-vaccine serotypes. Development of cheaper, serotype-independent vaccines based on a combination of protein antigens should be pursued.