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Serotypes of *Streptococcus pneumoniae* from children with tuberculosis and tuberculosis hospital staff

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Streptococcus pneumoniae is an urgent problem for practical public health worldwide. According to WHO experts, this is one of the most frequently occurring bacterial infections in humans and the main cause of bacterial pneumonia in young children. Based on the chemical structure and antigenic properties of the bacterial polysaccharide, capsule was isolated more than 90 serotypes of *S. pneumoniae*. Prevalence and medical significance of different serotypes of pneumococci varies considerably. Virulence of pneumococcal serotypes different ranges. Pneumococci of 1, 2, 3, 5, 7, 14, 16, 25, 28, 36, 43, 46 and 47 serotypes have a high virulence (preferably allocated in invasive infections); serotypes 6, 18, 19 and 23 preferably isolated from carriers. The incidence of pneumococcal serotypes causing infection in different regions varies considerably. It is known that serotype 3 is the most virulent. The most effective preventive measure is vaccination. Currently, for the prevention of pneumococcal infections in Russian Federation using pneumococcal polysaccharide vaccine Pneumo-23 (serotypes 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19F, 19A, 20, 22F, 23F, ZZF) and polysaccharide conjugate vaccine Prevnar 13 (serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F). The studies were conducted by PCR and Multiplex PCR and examined 40 strains of *S. pneumoniae* isolated from children with tuberculosis, 40 strains from healthy children, 20 strains of tuberculosis hospital staff, in Vladivostok, Far East Russia. It was found that among pneumococcal strains isolated from children with tuberculosis meet the following serotypes: 3 (20%), 19A (17.5%), 6B and 23F (15% each), 4, 14, 19F, and 18 (5% each), 7.1 and 28 (2.5% each), other serotypes - 5%. In the study of pneumococcus strains isolated from tuberculosis hospital personnel, revealed that 25.0% of the isolates belonged to serotype 3, 25.0% - 19A, 10% - to each of serotype 6B and 23F and 5% - to each of 14, 19F, 18, 7 serotypes, 10% - other serotypes. Among the strains in the control group (healthy children - carriers of pneumococcus) predominate pneumococci of serotype 6B (25%), serotype 19A occurs in 20%, serotype 3 - 12.5%, 23F, 4, 14 - 10% each, 19F and 18 - 2.5% each; to 7.5% of the strains belonging to other serotypes. In groups of strains from children with tuberculosis and tuberculosis hospital staff observed the similarities in the structure of serotypes: dominated by 3, 19A, 6B and 23F serotypes. This fact confirms that in the tuberculosis hospital formed and circulating strains of pneumococcus that capable of infecting both children undergoing treatment and medical personnel. Serotype 3, the most common among both groups, is highly virulent and often causes invasive forms of pneumococcal infection. We have isolated only one strain of serotype 28 that is not included in the vaccine. Thus, it is possible to recommend the vaccination against pneumococcus the adults from these groups risk of severe pneumococcal infection.

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