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Molecular biology, including diagnostics: Molecular typing

Serotyping of *Streptococcus pneumoniae* strains, isolated from children in Ural region, by multiplex PCR

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Objectives: The purpose of the current study is to determine of the serotypes distribution *S. pneumoniae*, isolated from children with invasive,noninvasive pneumococcal diseases and healthy carriers in Ural Region.

Methods: Assessment was performed with multiplex PCR, spent under the scheme described in article Brito et al., 2003. We report serotypes distribution of 129 *S. pneumoniae* strains, isolated from children in the age from 5 month to 17 years with invasive diseases (meningitis, sepsis) – 4, community-acquired pneumonia – 7, chronic infectious-inflammatory pulmonary diseases – 56, otitis media – 5, rhinosinusitis – 42 as well as from healthy carriers – 15 from 2005 to 2012 in Ekaterinburg and Sverdlovsk area.

Results: We succeeded to type 118 strains of 129 strains (91.5%). Thus we revealed 15 serotypes. 3; 19A and indivisible totality 5, 10A; 8, 9VA, 11FABCD, 12F,15A, 33F (each 25%) of *S. pneumoniae* serotypes, isolated from children with invasive diseases. In children with chronic infectious-inflammatory pulmonary diseases, as well as community-acquired pneumonia, prevailed follows serotypes: 6AB (25%); 23F (19.6%); 19F (16%) and indivisible totality – 8, 9VA, 11FABCD, 12F, 15A, 33F (12.5 %). In children with ENT-pathology 6AB (23.4%) serotypes of *S. pneumoniae* was also on the first place. Any is not found out serotype which would meet only in healthy carriers. We are revealed authentic distinctions in frequency of detection 3, 19F and nontyping *S. pneumoniae* strains between children till 6 and older 6 years of age. Most virulent serotypes – 3, 5, 14, mainly met in children till 6 years. Frequency of coincidence of *S. pneumoniae* serotypes, isolated from children with chronic infectious-inflammatory pulmonary diseases with serotypes which constituent in conjugated vaccines: 7-valent – 69.3%, 10-valent – 98.2%, 11 and 13-valent – 100%.

Conclusion: In children with acute and chronic pulmonary diseases prevails follows serotypes of *S. pneumoniae*: 6AB, 23F,19F, include in of all pneumococcal conjugated vaccines. 19A and 3 serotypes more frequent caused meningitis and sepsis, which both include in 13-valent pneumococcal conjugated vaccines.