SPECTRUM OF BACTERIAL PATHOGENS IN THE DEVELOPMENT OF ACUTE OTITIS MEDIA IN CHILDREN

O. Hanenko[1], E. Romanovskaya[2], N. Kolomiets[1], O. Tonko[1], V. Bulando[1], N. Klyuiko[3], A. Lazarev[3]

[1]Belarusian State Medical University, Minsk, Republic of Belarus
[2]International Sakharov Environmental Institute of the Belarusian State University, Minsk, Republic of Belarus
[3]City Children's Infectious Diseases Clinical Hospital, Minsk, Republic of Belarus
o_hanenko@mail.ru
k.romanovskaya123@gmail.com

The spectrum of isolated and identified bacterial strains in children with acute otitis media (AOM) clinical picture was assessed. The etiological significance of such bacterial pathogens as Streptococcus pneumoniae, Haemophilus influenzae, Staphylococcus aureus in the development of AOM in hospitalized patients in Minsk was established. The obtained results are of interest to practical health care specialists in terms of organizing and conducting prevention and etiopathogenetic therapy of AOM in children at the present stage.

Keywords: acute otitis media, children, bacterial etiologic agents, Streptococcus pneumoniae, Haemophilus influenzae, Staphylococcus aureus.

The purpose of the research is to study the spectrum of bacterial pathogens that cause acute purulent otitis media (AOM) in children hospitalized and treated at the Children's City Infectious Clinical Hospital in Minsk in 2023.

It was established that of 296 strains of microorganisms isolated from 213 children with symptoms of acute middle ear infection (biomaterial - discharge from the ears, pus), 43 isolates or 14,5% (95% CI 10,5-18,5) were Streptococcus pneumoniae, 27 strains or 9,1% (95% CI 5,7-12,5) – *Haemophilus influenzae*, 20 microorganisms or 6,8% (95% CI 3,8-9,8) – *Staphylococcus aureus*. The total proportion of etiologically significant bacterial pathogens *Streptococcus pneumoniae, Haemophilus influenzae* and *Staphylococcus aureus* in the development of acute respiratory infections in children in 2023 amounted to 30,5% (95% CI 25,1-35,9) of microorganisms. At the same time, statistically significant differences in the etiological prevalence of *Streptococcus pneumoniae* compared to *Staphylococcus aureus* were observed with a difference of 1.6 times, $p < 0.05$, while there were no differences in the proportion of detected *Streptococcus pneumoniae* and *Haemophilus influenzae*, as well as *Haemophilus influenzae* and *Staphylococcus aureus*, $p > 0,05$.

The proportion of Staphylococcus aureus isolated from biological material of patients with exudative and purulent AOM did not differ - 10 strains or 50% (95% CI 27,6-7,4), respectively. Streptococcus pneumoniae and Haemophilus influenzae caused a purulent course of AOM and were isolated in 43 or 100% of samples and in 26 or 96,3% (95% CI 89,1-103,5) of samples, respectively.

Of the 43 strains of Streptococcus pneumoniae, isolates obtained during 2 otitis accounts for 74,4% (95% CI 61-87,8) or 32 strains, while those obtained during 1 otitis account for 11 or 25,6% (95% CI 12,2-39,0) isolates, i.e. 2,9 times less often, $p < 0,05$. A similar pattern was observed for Haemophilus influenzae, the proportion of isolation of which in ear samples from children with 2 otitis was observed 3 times more often, $p < 0,05$, compared with patients with 1 lesion, amounting to 20 or 74,1% (95% CI 58-91,6) of strains and 7 or 25,9% (95% CI 9,1-42,7) of microorganisms, respectively.

Thus, the etiologically significant bacterial pathogens in the development of AOM in children hospitalized in 2023 were Streptococcus pneumoniae, Haemophilus influenzae, causing a purulent nature of otitis in almost 100% of cases, and Staphylococcus aureus, causing a purulent and exudative inflammatory process in equal proportions, which is important to take into account when organizing and conducting prevention and etiopathogenetic therapy of AOM in children at the present stage.

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