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STREPTOCOCCUS PNEUMONIAE COLONIZATION AMONG SPANISH CHILDREN WITH ACUTE OTITIS MEDIA: THE NATIONWIDE NECOPED STUDY

Type: AS: Regular Abstracts

Topic: AS04. Public health and epidemiology (only non-SARS-CoV2 content) / AS04a. Population studies and surveillance

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Background

Streptococcus pneumoniae is the most frequent isolated bacteria in acute otitis media (AOM). Nasopharyngeal colonization anticipates the development of pneumococcal AOM.

The aims of this study were to evaluate *S. pneumoniae* nasopharyngeal carriage rates of children with AOM in Spain, to identify the most prevalent serotypes, and to compare them according to patient age.

Method

Observational, transversal, prospective and multicentric study coordinated by the Primary Care Pediatric Research Network (PAPenRED). Children between 6 months and 5 years old diagnosed with AOM were recruited at Primary Care centres in the period April 2022–June 2023. Nasopharyngeal swabs were sent to local Microbiology laboratories for culture. Pneumococcal isolates were sent to the National Center of Microbiology for antibiotic susceptibility testing and serotype identification.

Results

The study included 482 children with AOM (98.7% fully vaccinated with PCV-13), with a median age of 31.3 months (IQR 17.1–46.9). Pneumococcal carriage rate was 51.4%. Serotype identification was available for 185 samples: 28 (15.1%) were PCV13 serotypes and 157 (84.9%) non-PCV13 serotypes. Ninety-six (51.8%) were serotypes included in PCV20. The most prevalent serotypes were 11A (n=20, 10.8%), 15B (n= 19, 10.3%), 19F (n=15, 8.1%), 10A (n=13, 7%), followed by 3, 23A, and 23B (n=12, 6.5%). PCV-13 serotypes represented 19% of colonizations in children below 1 year, 8.6% in those 1–2 years and 15.7% in > 2 years (p=0.426). Amoxicillin-R (MIC \geq 2 μ g/ml) was found in 11.3% of serotypes (62% by serotype 11A) and erythromycin-R (MIC \geq 0.5 μ g/ml) in 21%.

Conclusions/Learning Points

More than 50% of children below 5 years with AOM are colonized by *S. pneumoniae*, especially by non-PCV13 serotypes. PCV20 could cover more than half of the serotypes currently colonizing children with AOM in Spain.

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