

2. ANTIMICROBIAL RESISTANCE OF STAPHYLOCOCCUS AUREUS AMONG CHILDREN UNDER FIVE YEARS WITH ACUTE RESPIRATORY INFECTIONS

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Introduction. The human nasopharynx is colonized by a wide array of microorganisms, including *Staphylococcus aureus*, *Moraxella catarrhalis*, *Haemophilus influenzae*, and *Streptococcus pneumoniae*. After the introduction of the *Haemophilus influenzae* type b conjugate vaccine and the pneumococcal vaccine, *S.aureus* or methicillin-resistant *Staphylococcus aureus* (MRSA) remains the major pathogen that causes pneumonia in children.

Aim of study. The aim of this study was to elucidate the epidemiology and antimicrobial susceptibility of *S. aureus* and methicillin-resistant *S.aureus* (MRSA) in children under five years with acute respiratory infections.

Methods and materials. A prospective observational descriptive study was carried out within the National project "The impact of immunization on the morbidity and mortality of children with respiratory diseases in the Republic of Moldova"(project code) - 20.80009.8007.08. The nasopharyngeal aspirate technique was performed for the collection of specimens. Antimicrobial susceptibility testing was performed according to EUCAST standards.

Results. A total of 110 specimens collected from children under five years of age, who were admitted with symptoms of acute respiratory infections. The mean age of the children was 16,57 months. Bacteriological examination of 28 nasopharyngeal specimens identified *S. aureus* as an agent that colonizes the nasopharynx. All 28 children had been vaccinated. In 32.14% of the samples, *S.aureus* was associated with other microorganisms, such as *Moraxella Catarrhalis* (14.28%), *Streptococcus dysgalactiae* (17.85%) and others. (7,14%). *S.aureus* showed an increased resistance to penicillins (ampicillin – 78% and amoxicillin – 82%), and a high sensitivity to protected penicillins and oxacillin (92,9%). As well, it showed an increased sensitivity to antibiotics from the group of cephalosporins, macrolides, carbapenems, aminoglycosides and tetracyclines (92,9%). Two (7,1%) of the isolates were multidrug resistant, of which 100% were MRSA.

Conclusion. In this study, the nasopharyngeal carriage prevalence of *S. aureus* was high, with a small proportion of these colonizers being MRSA. The antimicrobial resistance among the isolates was generally low. An ongoing surveillance of antimicrobial susceptibility testing of all *S. aureus* isolates is crucial for treatment of MRSA, and for developing current and customized national guidelines based on etiological evidence and susceptibility spectrum so that therapeutic decisions will become targeted and effective.