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The Investigation of Nasal MRSA Carriage and Colonization of Nasopharyngeal Pathogens at a Primary School in Düzce

Mustafa YILDIRIM¹
İdris ŞAHİN²
Semra BAŞAK²
Şükrü ÖKSÜZ³
Çiğdem ÖZAYDIN²
Selda ACAR²
İrfan ŞENCAN⁴
Oğuz KARABAY⁵

 [Keywords](#)
 [Authors](#)



medsci@tubitak.gov.tr

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¹Department of Clinical Microbiology and Infectious Diseases, University of Düzce, Faculty of Medicine, Düzce - TURKEY

²Department of Microbiology and Clinical Microbiology, University of Düzce, Faculty of Medicine, Düzce - TURKEY

³Department of Microbiology and Clinical Microbiology, Düzce Atatürk State Hospital, Düzce - TURKEY

⁴Department of Clinical Microbiology and Infectious Diseases, Dışkapı Yıldırım Beyazıt Training and Research Hospital, Ankara - TURKEY

⁵Department of Clinical Microbiology and Infectious Diseases, University of Abant İzzet Baysal, Faculty of Medicine, Bolu - TURKEY

Abstract: Aim: The aim of the study was to investigate nasopharyngeal colonization of respiratory tract pathogens and nasal carriage of methicillin-resistant *Staphylococcus aureus* (MRSA) in healthy schoolchildren (6-14 years old). Materials and Methods: The present study was conducted at Konuralp Primary School by Düzce University and 484 healthy children were included. Isolates obtained from nasal and nasopharyngeal cultures were identified by conventional microbiological procedures and Api 20 strep, NH. Results: 56.6% of healthy schoolchildren had at least one nasopharyngeal potential bacterial pathogen. Isolated bacteria species were as follows: 6% group A streptococcus (GAS), 5.0% *S. pneumoniae*, 33.1% *M. catarrhalis*, and 34.9% *H. influenzae*. All of the isolated GAS species were susceptible to penicillin. 8.3% of *S. pneumoniae* isolates were intermediately resistant to penicillin. Beta-lactamase test was found positive for *M. catarrhalis* and *H. influenzae* in 90.3 and 8.3%, respectively. There was a significant relationship between nasopharyngeal colonization of *M. catarrhalis* and antibiotic usage in the past six months ($P=0.018$) and nasopharyngeal colonization of *H. influenzae* and antibiotic usage in the household ($P=0.001$). The rate of nasal MRSA carriage in healthy children was 5%. This rate was found higher in the 6-10 age group compared to the 11-14 age group ($P=0.012$). Conclusions: Our data showed that nasopharyngeal carriage of potential respiratory pathogens in schoolchildren should not be underestimated. More comprehensive surveillance studies should be performed to obtain correct information about the carriage.

Key Words: Nasal MRSA carriage, nasopharyngeal colonization, respiratory tract pathogens, schoolchildren

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