

## Review Paper:

# Prevalence of Community Acquired Methicillin-Resistant Staphylococcal Infection Among Elementary School Students



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## ABSTRACT

**Background:** Prevalence of community acquired Methicillin-Resistant Staphylococcus Aureus (MRSA) infection and colonization has been increased in recent years. The aim of this study was to determine the nasal colonization with MRSA agent and its antibiotic resistance pattern in children.

**Methods:** Participants were 277 elementary school students. Sampling was performed for 6 months from February to August 2017. The sample size was determined by the Cochran formula. MRSA strains were identified by using conventional lab techniques including catalase, coagulase and DNase tests. The oxacillin and ceftioxin discs diffusion method was used for detection of MRSA strain, and the determination of the strain resistance pattern was performed by Kirby-Bauer disk diffusion test by using 10 antibiotics.

**Results:** MRSA strains were isolated from the nose of 81 of 277 children (29.24%). Of 81 MRSA isolates, the highest rate of resistance was belonged to cefixime and cephalexin with 100% resistance followed by amoxicillin-clavulanic acid (97%) and cephalothin (95%), while the lowest rate of resistance was related to co-trimoxazole (12.5%). The resistance rate was 87% for ceftazolin, 60% for clindamycin, 65% for ceftioxin, and 45% for vancomycin. Furthermore, no significant association was found between demographic variables (application of ointments, history of hospitalization, history of antibiotic consumption, mucosal infection, etc.) and MRSA colonization.

**Conclusions:** The prevalence of MRSA infection is high. Hence, there is a need for rational use of empiric antibiotic therapy to reduce the mortality and morbidity rate caused by this infection. The emergence of vancomycin resistant staphylococcus aureus infection is expected in the future.

**Keywords:** Community Acquired Methicillin-Resistant Staphylococcus Aureus, Antibiotic resistance, Nasal, Children