

## Nasal Carriage of Community Acquired Methicillin-resistant *Staphylococcus Aureus* in Indian School Children

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### DEAR EDITOR,

Nasal carriage of Methicillin-resistant *Staphylococcus aureus* (MRSA) plays an important role in the transmission and pathogenesis of *S. aureus* infections, especially skin and soft tissue infections.<sup>[1,2]</sup> Prevalence studies done at various regions globally revealed high-degree of regional variations in community acquired-MRSA (CA-MRSA) colonization.<sup>[3,4]</sup> MRSA has recently emerged as a common cause of infection in children in many parts of the world. The epidemiology of CA-MRSA among healthy children has been recently described.<sup>[5]</sup> However, little is known about CA-MRSA in children with no underlying risk factors in the Indian subcontinent.

Hence, this study was carried out after obtaining clearance from the Institutional Ethical Committee to determine the prevalence of CA-MRSA in school children between the ages of 5 and 19 years. The study was conducted as part of the annual school health screening program after obtaining consent from school authorities and the parents. Six hundred and twenty-two subjects were screened for MRSA colonization in the anterior nares. Samples were taken from those who fulfilled the predetermined inclusion criteria. These criteria were: Students between the age group of 5 years and 19 years, who have given consent to undergo investigation and

have not visited a health care facility for any reason in the preceding 3 months. All the study samples were processed as per the recommended methods, and results were interpreted as per the Clinical and Laboratory Standards Institute guidelines M 100-S22. Molecular confirmation of the isolates for the presence of *mecA* and *PVL* gene was done by polymerase chain reaction. The presence of *PVL* gene was taken as signifying community acquisition. There were 247 (40%) males and 375 (60%) females with a mean age group of 14.2 years. Of 622 samples, growth in culture was observed in 576 (93%) of samples and the rest of the 46 (7%) did not yield any growth. Of 576 samples with growth 549 yielded normal microbial flora and Methicillin Sensitive *S. aureus* (MSSA) while seven yielded MRSA. All seven MRSA carried the *mecA* and *PVL* gene. The latter was detected in few MSSA as well.

The risk factors for MRSA colonization includes overcrowded housing conditions, poor ventilation and living in close proximity.<sup>[4]</sup> All the study subjects were exposed to the above risk factors considering their socioeconomic background.

A female preponderance for colonization (6.1%) was observed in our study, which can be explained by the higher number of females in the study subjects.

In conclusion, a low prevalence rate of MRSA was observed among the school children aged

between 5 and 19 years. There were no associated risk factors that were significant for MRSA acquisition. Nevertheless, it is a cause for concern. Detection of *PVL* gene in MSSA implicates an ability of MSSA to transform to MRSA. The Indian scenario with overcrowded and poor living conditions requires constant surveillance to assess the epidemiology of the emerging CA-MRSA strains in the community and to avert possible outbreaks. Further epidemiological genotypic studies are warranted to characterize the origin and spread of MRSA in the community.

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