

Nasal carriage of *Staphylococcus aureus* among healthy adults

ABSTRACT

Background and Purpose: Data on the carriage rate and antibiotic sensitivity pattern of *Staphylococcus aureus* strains prevalent in the community are not available for many developing countries including Malaysia. To estimate the extent of community *S. aureus* transmission, in particular methicillin-resistant *S. aureus* (MRSA), the prevalence of *S. aureus* nasal colonization in a population of healthy adults was determined. Factors associated with *S. aureus* nasal carriage and antibiotic sensitivity patterns of the isolates were also analyzed.

Methods: A cross-sectional study involving 346 adults was conducted. Nasal swabs were examined for the presence of *S. aureus*. Epidemiological information concerning risk factors for nasal carriage was also obtained. Antibiotic susceptibility testing was performed using the disk diffusion method according to the National Committee for Clinical Laboratory Standards guidelines. MRSA strains isolated were further subjected to pulse-field gel electrophoresis analysis.

Results: The prevalence of *S. aureus* nasal carriage was 23.4%. The findings also revealed that ex-smokers (95% confidence interval [CI] 1.08-6.32, $p=0.033$) and oral contraceptive users (95% CI 1.12-21.67, $p=0.035$) were more likely to harbor *S. aureus*. One person was colonized with MRSA, which was different from the hospital strain. **Conclusion:** MRSA nasal colonization was found to be low outside of the health care environment. Smokers and oral contraceptive users have high nasal carrier rates.

Keyword: Carrier state; Methicillin; Nasal mucosa; Prevalence; Resistance; *Staphylococcus aureus*