Title: Evaluation of Staphylococcus aureus nasal dynamic colonization in Iranian healthy students

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Abstract: Background: Staphylococcus aureus carriage is a risk factor for infection in both community and hospital settings. S. aureus colonizes the skin and mucosal surfaces of humans and also of several animal species. Studies have shown that the anterior nares are the most consistent site from which this organism can be cultured. In longitudinal studies, three types of S. aureus nasal carriers, can be distinguished: persistent carriers, intermittent carriers and noncarriers. Between 10 and 35% of healthy individuals almost always carry one strain and are called persistent carriers. A larger proportion (20 to 75%) of individuals harbor S. aureus intermittently, and are called intermittent carriers. Finally, between 5 and 50% almost never carry S. aureus and are called noncarriers.

Methods: A total of 568 nasal swabs were collected by a trained health-care worker from 284 healthy students at Arak university of Medical sciences within one week interval. All samples were subjected to S. aureus–specific isolation procedures (catalase, Coagulase, clumping factor, DNase, thermostable nuclease, 162 bp of sa442 gene) in accordance with standard guidelines.

Result: In the first investigation, among the 284 subjects screened, 48 or 17% were colonized with S.aureus, of which 17 (6%) subjects were positive in second sample collection. Of 284 subjects 219 cases were found non-carrier. This finding is lower than other previously reported data from Iran.

Conclusion: Our study shows that local S.aureus colonization patterns are primarily transient carrier and this low percentage indicating lower endogenous nosocomial infection which is a challenge in infection control measure.

Key word: Staphylococcus aureus, nasal carrier, transient, permanent

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