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Letter to the Editor

Drug resistance profile of staphylococci isolated from asymptomatic adults

Dear Editor,

The emergence of multi-drug resistant (MDR) strains is a worldwide phenomenon, due to the selective pressure exerted by extensive use of antibiotics, which has hindered the treatment of staphylococcal infections. The anterior nasal vestibule and the throat are the main reservoirs of *S. aureus*, including methicillin-resistant *S. aureus* (MRSA) strains, which show a genetic predisposition to develop MDR phenotype and are a common cause of hospital- and community-acquired infections worldwide.^{1,2} The maintenance of the asymptomatic nasal carrier state is considered a risk factor for staphylococcal disease acquisition and staphylococci transmission to susceptible individuals.

The resistance profile of staphylococci present in the nasal vestibule of asymptomatic carriers was analyzed in the city of Natal, northeastern Brazil. These strains were isolated from nasal secretion samples collected from 52 students of dentistry. 59.6% (31/52) of isolates were identified as *S. aureus*, of which 6.5% (2/31) were MRSA strains. The

prevalence of nasal carriage of *S. aureus* estimated in the present study was higher than that found by other studies in Brazilian university students,³ in the United States' general population,⁴ and in Malaysian adults.⁵

Resistance to erythromycin was found in 25.8% (8/31) of *S. aureus* strains, and 9.7% (3/31) of these had inducible resistance phenotype. All tetracycline resistant strains had a phenotype compatible with plasmid inheritance. The strains of isolated *S. aureus* and coagulase-negative staphylococci had a significant percentage of resistance to penicillin G, erythromycin, and clindamycin. Resistance to two or more classes of antibiotics was found in 29.0% (9/31) of the *S. aureus* strains, and was also observed in coagulase-negative staphylococci strains (Table 1).

It was found that a significant percentage of clinically healthy adults were asymptomatic carriers of *S. aureus*, including MDR strains. This finding may probably be attributable to indiscriminate use of antibiotics. These results emphasize the importance of effective control measures to reduce the misuse of antimicrobial agents.

Table 1 - Resistance pattern of 52 staphylococci isolates obtained from healthy adult carriers in Natal, Brazil

| Staphylococci isolates | Sensitive n (%) | Non multidrug resistant n (%) | Multidrug resistant* n (%) | Total n (%) |
|------------------------|-----------------|-------------------------------|----------------------------|-------------|
| <i>S. aureus</i> | 7 (22.6) | 15 (48.4) | 9 (29.0) | 31 (59.6) |
| <i>S. epidermidis</i> | 4 (33.3) | 4 (33.3) | 4 (33.3) | 12 (23.1) |
| <i>S. warneri</i> | 1 (33.3) | 0 (0.0) | 2 (66.7) | 3 (5.8) |
| <i>S. lentus</i> | 1 (33.3) | 0 (0.0) | 2 (66.7) | 3 (5.8) |
| <i>S. xylosus</i> | 1 (100.0) | 0 (0.0) | 0 (0.0) | 1 (1.9) |
| <i>S. haemolyticus</i> | 0 (0.0) | 0 (0.0) | 1 (100.0) | 1 (1.9) |
| <i>S. capitis</i> | 1 (100.0) | 0 (0.0) | 0 (0.0) | 1 (1.9) |
| Total | - | - | - | 52 (100.0) |

*Resistant to two or more classes of antibiotics

Conflict of interest

All authors declare to have no conflict of interest.

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