

## Antimicrobial susceptibility of *Staphylococcus aureus* and coagulase-negative staphylococci in oral and nasal cavities

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### Abstract

*Staphylococcus* infections are becoming increasingly difficult to treat due to the growing number of resistant strains to old and new antibiotics. *Staphylococcus aureus* is referenced as the most clinically relevant but other species, known as coagulase-negative staphylococci (CoNS), have emerged as major causes of serious infections. Although nostrils are considered *Staphylococcus* preferred host habitat, the oral cavity has also been appointed as a relevant reservoir. Thus, this study aimed to evaluate the antibiotic susceptibility (AS) of nasal and oral staphylococci isolates. Therefore, AS was determined to 102 nasal and 90 oral isolates, previously recovered from dentistry students, by disc diffusion agar for amoxicillin, cefoxitin, ciprofloxacin, chloramphenicol, clindamycin, erythromycin, gentamicin, quinupristin-dalfopristin, tetracycline, and trimethoprim+sulfamethoxazole following the EUCAST/CLSI guidelines. In either nasal (N) or oral (O) cavities, the *Staphylococcus* isolates included 22% of *S. aureus* and 78% of CoNS isolates, namely *S. epidermidis* (41%-N,37%-O), *S. warneri* (15%-N,16%-O), *S. capitis* (10%-N,4%-O), *S. saprophyticus* (9%-N,6%-O), *S. pasteurii* (7%-O), *S. lugdunensis* (3%-O), and other (*S. haemolyticus*, *S. hominis*, *S. sciuri*, *S. cohnii*, and *S. condimentii/S. carnosus*). All *S. aureus* isolates presented resistance to at least one antibiotic, and 36% in oral and 25% in nasal cavities presented multi-drug resistance (MDR). Among CoNS 65% in oral and 49% in nasal cavities presented resistance to at least one antibiotic, and ~5% presented MDR, namely isolates of *S. epidermidis*, *S. pasteurii*, *S. haemolyticus*, and *S. hominis*. In conclusion, this study revealed the relevance of the oral cavity as a colonization site for *Staphylococcus*, including *S. aureus*, and as a potential source/reservoir of antibiotic resistance, which has been widely neglected so far, highlighting the need for oral cavity inclusion in the *Staphylococcus* carriage and antibiotic screening.