ECA 2022
The 2nd International Electronic Conference on Antibiotics
Drugs for Superbugs: Antibiotic Discovery, Modes of Action and Mechanisms of Resistance
15–30 JUNE 2022 | ONLINE

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Determination of the pattern of resistant to antibiotics among strains of *Staphylococcus aureus* isolated from the nose or pharynx

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Introducction

The pathophysiology of *Staphylococcus aureus* in nasal carriers has been extensively studied, however, it must be admitted that the clinical relevance of *S. aureus* carriers in the pharynx has not been extensively investigated. This omission appears to be justified, since the nose is mentioned as the primary site of *S. aureus* colonization[1]. From there, other regions are colonized by manual spread In the general adult population, *S. aureus* can be commonly found in other body sites such as the axillae (8%), chest/abdomen (15%), perineum (22 %), intestine (17-31%), vagina (5%) and from 4 to 64% in the pharynx[2]. Some studies mention a higher rate of carriers in the pharynx than in the nose when samples are taken in parallel. The objective of the work was to determine if there are differences in the pattern of resistance to antibiotics of strains isolated from the nose and pharynx[3].

Methods

Pharyngeal and nasal exudates were performed on 98 university students once a month for three months. The exudates were incubated in Tripticasein Soy Broth at 37 °C for 24 h, followed by seeding in Salt and Mannitol Agar Petri dishes and re-seeding to obtain isolated colonies. All strains that were coagulase-positive mannitol fermenters were identified as *S. aureus*. If a person presented three isolates of *S. aureus*, they were considered persistent carriers, if they presented one or two isolates in a row, they were considered intermittent carriers, and if the bacteria were never isolated, they were considered non-carriers. All strains of *S. aureus* underwent antibiogram against: ciprofloxacin, fosfomycin, trimethoprim-sulfamethoxazole, penicillin, vancomycin, tetracycline, erythromycin, oxacillin, clindamycin, gentamicin and cafalothin by the Kirby-Bauer method and minimum inhibitory concentration for oxacillin, following the indications of the CLSI.

Results

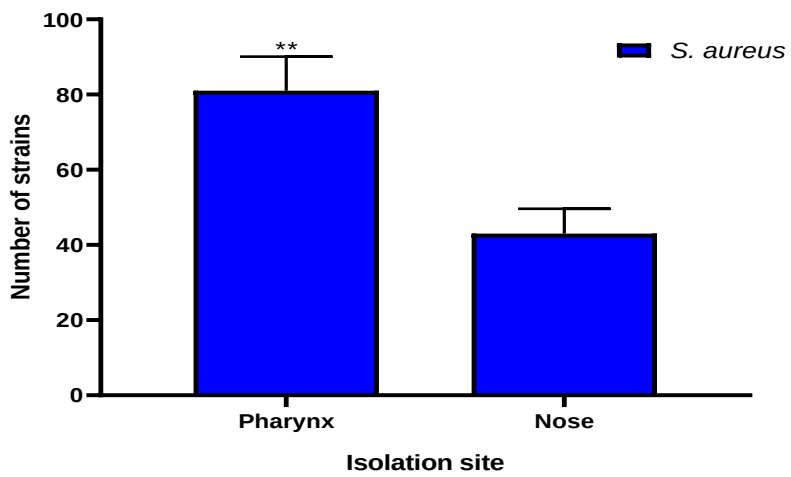

Figure 1. Strains of *S. aureus* isolated from the pharynx and nose during the three samplings. One-way ANOVA was performed ** p <0.01. The average is plotted, and the error bars consider the SD.

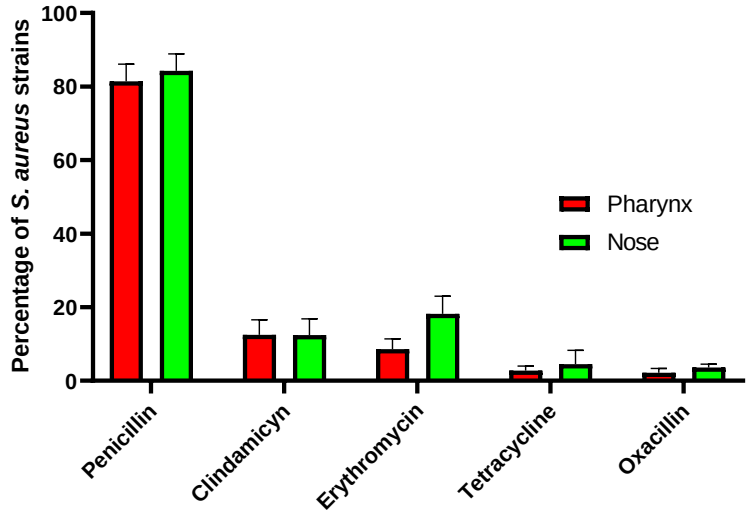

Figure 2. Antibiotic resistance of the *S. aureus* strains isolated from the pharynx and nose during the three samplings. The average is plotted, and the error bars consider the SD. Only antibiotics to which *S. aureus* had resistance are shown.

Discussion

More carriers of *S. aureus* were found in the pharynx (75%) than in the nose (40%) in the three samples taken, which coincides with some results published in the literature[4,5].

Conclusions.

More strains of *S. aureus* were isolated from the pharynx than from the nose. No differences were found in resistance to antibiotics, nor changes in the percentage of resistant strains in the pharynx and nose.

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