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Abstract

Determination of the Pattern of Resistance to Antibiotics among Strains of *Staphylococcus aureus* Isolated from the Nose or Pharynx †

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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. *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.

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.

Pharyngeal and nasal exudates were performed on 98 university students once a month for three months. 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 cephalothin by the Kirby-Bauer method and minimum inhibitory concentration (MIC) for oxacillin, following the indications of the CLSI.

A total of 81 strains of *S. aureus* were isolated from the pharynx and 43 strains from the nose of the students during the three samples taken. In the case of the pharyngeal strains, 81.4% were resistant to penicillin, 12.5% to clindamycin, 8.6% to erythromycin, 2.78% they are resistant to tetracycline and oxacillin. For ciprofloxacin, fosfomycin, vancomycin, gentamicin, and cephalothin, the percentage of resistant strains was less than 1%.

In the case of the strains isolated from the nose, it was found that 84.3% are resistant to penicillin, 18.2% to erythromycin, 12.4% to clindamycin, 4.49% to tetracycline, 3.6% were resistant to oxacillin. For ciprofloxacin, fosfomycin, trimethoprim-sulfamethoxazole, gentamicin, and cephalothin, the percentage of resistant strains was less than 1%.

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.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/eca2022-12720/s1.

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