TITLE: INVESTIGATION OF *IN VITRO* SUSCEPTIBILITY OF *Staphylococcus aureus* IN PATIENTS UNDER DENTAL CARE ON CLINIC OF DENTISTRY OF SERRA GAÚCHA UNIVERSITY CENTER

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ABSTRACT:

Staphylococcus aureus is considered an opportunistic human pathogen and is frequently associated with infections acquired in the community and in the hospital environment. Until the 1960s, antimicrobial therapy for infections by these microorganisms was relatively simple. However, antibiotic resistant isolates such as penicillin began to appear. In this way, the present study aims to investigate the *in vitro* susceptibility of *Staphylococcus aureus* in patients under dental care on Dentistry Clinic of the University Center of Serra Gaúcha (FSG). The study was conducted from the collection of clinical specimens in patients Patients, who underwent dental care the Dental Clinic of the Undergraduate Dentistry Course of the University Center of Serra Gaúcha, which is located in the city of Caxias do Sul, Rio Grande do Sul, southern Brazil. Brazil. In order to collect specimens from nails, nasal cavity and oral cavity, the pacients were invited to: (a) dip their fingertips and nails into petri dishes containing Sal-Manitol Agar (Kasvi, Padova, Italy); (B) to introduce sterile swab into the nasal cavity and perform 6 mucosal rotation in each nasal fossa; (C) to introduce sterile swab into the oral cavity and perform rotations in the buccal mucosa to collect saliva. Afterwards, the swabs and Petri dishes were sent to the Laboratory of Microbiology and Oral Pathology for identification through growth characteristics in Sal-Manitol Agar. Resistance to mupirocin, cefoxitin, ceftaroline was analyzed using a diffusion disc. For all of the antibacterials tested here, 30 μg diffusion disks were used, respectively. The M100-S23 (2013) of the Clinical and Laboratory Standards Institute Guidelines (CLSI) was used to measure the surrounding inhibitory zone. This study was approved by the Research Ethics Committee of the University Center of Serra Gaúcha under CAAE 57719316.9 .0000.5668. A total of 180 patients were collected. Of these 95 were carriers of the microorganism in at least one site of interest. Ninety patients had the bacteria in their hands. Thirty were nasal carriers and 54 were oral carriers. ¨ Sixty-three presented the microorganisms in more than one site of interest. Of the 540 isolates, 21 (4%) were resistant to cefoxitin. Fourteen (2.6%) of the isolates were resistant to mupirocin. None of the isolates were resistant to ceftaroline. Therefore, the circulation of

microorganisms, as well as of those resistant microorganisms inside establishments that carry out

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