

**Título: ANTIMICROBIAL RESISTANCE AND VIRULENCE PROFILE OF *Staphylococcus aureus* ISOLATED FROM NOSOCOMIAL INFECTIONS IN GRANDE VITÓRIA-ES**

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**Abstract:**

*Staphylococcus aureus* is the most common pathogen involved in healthcare-associated infections in world. Because of the large ability to produce many virulence factors this microorganism is associated with several cases of infections with severity variable. The aim of this study was to analyze the antimicrobial resistance and virulence of 100 *S. aureus* isolated from nosocomial infections of five hospitals in Grande Vitória-ES. According to the disc diffusion test 47 strains were methicillin-sensitive *Staphylococcus aureus* (MSSA) and 53 were methicillin-resistant (MRSA). Moreover, was observed a resistance above 50% to antimicrobials often used in clinical routine, like erythromycin, ciprofloxacin, clindamycin and rifampicin. All strains were sensible to linezolid and the majority was sensible to chloramphenicol, mupirocin, gentamicin and trimethoprim/sulfamethoxazole. The minimum inhibitory concentration (MIC) test was performed by agar dilution which identified 48 MSSA and 52 MRSA. All strains were sensible to vancomycin. On the other hand, the *mecA* detection by PCR identified 41 MSSA and 59 MRSA. The SCC*mec* typing of MRSA strains was realized by multiplex PCR and identified 29 SCC*mec*II, 19 SCC*mec*IV and 11 non-typeable. The virulence profile was investigated by PCR detection of five adhesin genes (*ebpS*, *bbp*, *fnbA*, *fnbB* and *cna*) and five toxin genes (*sea*, *sec*, *see*, *lukSF-PV* and *tsstI*). The most prevalent adhesin genes were *ebpS* (78) and *fnbA* (44) while *cna*, *fnbB* and *bbp* genes were found in 23, 21 and 11 strains respectively. The PVL genes (*lukSF-PV*) were detected in 22 strains (11 SCC*mec*IV, 03 SCC*mec*II, 03 non-typeable and 05 MSSA). The *sea* and *sec* genes were detected in three and one strain, respectively while *see* and *tsstI* genes weren't detected. In our study MSSA strains, statistically, showed a higher virulence profile than MRSA, although the low virulence of identified profiles. Seven MRSA that presented *mecA* gene (six SCC*mec*IV and one non-typeable) were sensitive to oxacillin by phenotypic methods revealing the limitations of these tests used in clinical routine. MRSA carrying SCC*mec*III, presented by Brazilian Epidemic Clone, was not found in hospitals analyzed.

**Key-words:** *Staphylococcus aureus*, resistance, SCC*mec*, virulence

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