TITLE: *STAPHYLOCOCCUS AUREUS* ISOLATED FROM AN INTENSIVE CARE UNIT OF A SCHOOL-HOSPITAL OF GOIÂNIA, GOIÁS – PREVALENCE AND SUSCEPTIBILITY PROFILE

AUTHORS: VELOSO, J. O.[1]; NEVES, L. S.[1];FERREIRA, E. M. A.[1]; CRUZ, M. L.[1]; JESUS, J. S.[1]; DANGONI FILHO, I.[1]; SANTOS, N. M. C.[1]; PIRES, C. H.[1]; LAMARO-CARDOSO, J.[1]; ANDRÉ, M. C. P.[1]

INSTITUTION: [1]INSTITUTO DE PATOLOGIA TROPICAL E SAÚDE PÚBLICA - UNIVERSIDADE FEDERAL DE GOIÁS – IPTSP/UFG (RUA 235 ESQ. 1ª AVENIDA, S/N, S. UNIVERSITÁRIO, GOIÂNIA-GO. CEP: 74605-050) BRASIL.

ABSTRACT

Staphylococcus aureus is an important pathogen related to infections associated with health care services, with high prevalence, morbidity and mortality rates. Methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the major pathogens responsible for nosocomial infections and in that context, the Intensive Care Units (ICU) stand out as high risk areas for the selection of multidrug-resistant strains. In addition, the environment of these units can also become contaminated, and the microorganisms can remain viable on different inanimate surfaces for a long time and may colonize patients, employees and contaminate other environments. **Methods:** The aims of this study were to determine the prevalence of colonization of *S. aureus* from patients and ICU environment of an university hospital in the city of Goiânia-GO, as well as the antimicrobial susceptibility profile of the isolates,and molecular typing of the isolates. The samples were inoculated in mannitol salt agar and identified by conventional techniques. After phenotypic identification, the detection of *femA* gene was performed for confirmation of *S. aureus* species and the isolates were submitted to disk diffusion test. The isolates that showed resistance to cefoxitin were underwent gene *mecA* detection for MRSA identification. Five hundred and thirty six *swabs* were collected being 134 from patients and 402 *swabs* from environment. The prevalence of *S. aureus* colonization was 13.1% (70/536), being 22 isolates (16.4%) from patients and 48 (11.9%) from the environment. The greatest resistance was presented to penicillin (84.3%) followed by resistance to erythromycin (67.1%), clindamycin (64.2%) and sulfamethoxazole-trimethoprim (52.9%). Four isolates (5.7%) were resistant to all antimicrobials classes tested and 57 isolates (81,4 %) were considered multidrug resistant. Of the 70 *S. aureus* isolated 12 (17.1%) were identified as MRSA. The inducible resistance phenotype (iMLSb) was found in 11 isolates (15.7%) and constitutive resistance phenotype (cMLSb) in 12 (17.1%). The results suggest that the prevalence of *S. aureus* and MRSA remains high in health institutions, especially in ICU, with high rates of antimicrobial resistance. It was also noted that the hospital environment may act as a reservoir of resistance and virulence genes, as well as potential sources of patients, personnel and environment contamination.

Keywords: *Staphylococcus aureus*, MRSA, Intensive Care Unit, iMLSb