

Title: PHENOTYPIC AND MOLECULAR CHARACTERIZATION OF RESISTANCE TO MACROLIDES, LINCOSAMIDES AND TYPE B STREPTOGRAMINS OF CLINICAL ISOLATES OF *Staphylococcus* spp. FROM A UNIVERSITY HOSPITAL

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Abstract:

Staphylococcus spp. demonstrated, over time, the remarkable ability to develop resistance to most antibiotics. There is a mechanism of resistance to macrolides in *Staphylococcus* spp. which also affects lincosamides and streptogramins B characterizing called MLS_B resistance, whose expression can be constitutive (cMLS_B) or inducible (iMLS_B) and is encoded mainly by *ermA* and *ermC* genes. The cMLS_B resistance is easily detected by susceptibility testing used in laboratorial routine, but the iMLS_B resistance is not. Therapy with clindamycin in cases of infection by isolates with resistance iMLS_B may fail. The aim of this study was to characterize the phenotypic profile (occurrence of cMLS_B and iMLS_B phenotypes) and molecular (occurrence of *ermA* and *ermC* genes) of MLS_B resistance of clinical isolates of susceptible and methicillin-resistant *Staphylococcus aureus* and CNS (coagulase-negative *Staphylococcus*) from a university hospital of Pernambuco, Brazil, during the year 2012. The antimicrobial susceptibility of 103 isolates was determined by disk diffusion technique on Mueller-Hinton agar. Posteriorly, oxacillin *screening* was performed. The iMLS_B phenotype was detected by D test. Were subjected to polymerase chain reaction (PCR), 13 isolates with cMLS_B and iMLS_B phenotypes to detect *ermA* and *ermC* genes. cMLS_B and iMLS_B phenotypes were identified respectively in 39 (37,9%) and five (4,9%) isolates. The iMLS_B phenotype was only observed in four (10,8%) of methicillin-susceptible *S. aureus* and one (4,5%) of methicillin-resistant *S. aureus*. Of the 13 isolates subjected to PCR, six (46,2%) showed one *erm* gene. The same frequency three (23,1%) of *ermA* and *ermC* genes among the isolates was observed. The *ermA* and *ermC* genes were present among some of the isolates of *Staphylococcus* spp. of the hospital studied and despite the phenotype iMLS_B have been less frequent than cMLS_B, it is important to perform the D test to detect it and thus guide treatment management.

Keywords: *Staphylococcus*, methicillin, clindamycin, erythromycin, genes.

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