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 MLSB resistance, whose expression can be constitutive (cMLSB) or inducible (iMLSB) and is encoded mainly by ermA and ermC genes. The cMLSB resistance is easily detected by susceptibility testing used in laboratorial routine, but the iMLSB resistance is not. Therapy with clindamycin in cases of infection by isolates with resistance iMLSB may fail. The aim of this study was to characterize the phenotypic profile (occurrence of cMLSB and iMLSB phenotypes) and molecular (occurrence of ermA and ermC genes) of MLSB 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 iMLSB phenotype was detected by D test. Were subjected to polymerase chain reaction (PCR), 13 isolates with cMLSB and iMLSB phenotypes to detect ermA and ermC genes. cMLSB and iMLSB phenotypes were identified respectively in 39 (37,9%) and five (4,9%) isolates. The iMLSB 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 iMLSB have been less frequent than cMLSB, 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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