

Título: STAPHYLOCOCCUS HAEMOLYTICUS ENHANCED BIOFILM PRODUCTION IN THE PRESENCE OF ANTIBIOTICS.

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Resumo:

In the last decade, the nosocomial infections have emerged as the principal cause of mortality in hospitals and the coagulase-negative staphylococci (CNS) are the second bacteria most prevalent in these cases. *S. haemolyticus* is primarily associated with infections in immunocompromised patients. *S. haemolyticus* have been identified as an important cause of primary bloodstream infections associated with the use of central venous catheters. The most important virulence factor of these pathogens is their ability to form biofilm. The aim of this study was to evaluate the influence of the antibiotics oxacillin and vancomycin in the ability of the biofilm formation of *S. haemolyticus* strains isolated from infections in neonates. 31 strains of *Staphylococcus haemolyticus* isolated of blood cultures of the neonates were studied and identified for PCR method. The ability of biofilm formation was investigated for assays slime formation (method congo red), Glass and polystyrene adherence in the presence of antibiotics oxacillin and vancomycin, PCR for *icaA* gene and the biofilm formation was visualized by Scanning Electron Microscopy (SEM). The genomic perfil of the microorganisms was determined for technique of Pulsed Field electrophoresis gel (PFGE). Most of strains (67.7%) showed resulted positive for congo red test, 96.7% showed profile of strong producer of biofilm, 58.0% had the *icaA* gene. For vancomycin, 45% of isolates to showed higher biofilm produce in polystyrene plates, and only two isolates not presented biofilm produce with vancomycin. Moreover, most of the strains tested (87%) were adherent to glass surfaces. 90.3% isolates were shown equal or increased to biofilm produce in glass with oxacillin, only two isolates no biofilm produce in glass but biofilm produce with oxacillin, and 45.1% isolates decreased to biofilm produce with vancomycin and 51.6% of isolates decreased to biofilm produce with oxacillin in glass. The PFGE technique has revealed 6 different types clonals, and the B and D types encompassed the largest number of samples. In conclusion, clonality of *Staphylococcus haemolyticus* in Brazilian hospital reveled that some clones are endemic in the hospital environment. The occurrence of prevalent genotypic groups among the bacteremia isolates of *S. haemolyticus* may represent strains with higher invasive capacity. Although *S. haemolyticus* biofilm formation in vitro has been reported, the molecular mechanisms involved remains partially elucidated.

Key words: *Staphylococcus haemolyticus*, adherence, antibiotics, biofilm.

Development Agencies: CNPq, SR2-UERJ, FAPERJ, CAPES