

Título: MOLECULAR CHARACTERIZATION AND ANTIMICROBIAL RESISTANCE OF *Streptococcus agalactiae*

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Abstract:

Streptococcus agalactiae (Group B *Streptococcus*, GBS) are the most common cause of serious bacterial infections in newborn and adults with underlying medical disorders. At the time of birth, GBS is vertically transmitted to the neonate, and it is estimated that 50% or more of newborns exposed to GBS will become colonized if the mother is a carrier. Although the physical structure of the capsular polysaccharide (CPS) of each GBS serotype is unique, all ten different GBS serotypes (Ia, Ib, II-IX). CPS serotyping is the classic method for typing GBS in epidemiological studies. However, phenotypic methods have limited accuracy and often result in some non-typeable isolates. Earlier studies have demonstrated the discriminatory ability and reliability of pulsed-field gel electrophoresis (PFGE) in further differentiation of GBS strains of the same serotype. The purpose of this study was to characterize GBS isolates recovered from healthy women and mastitis bovine, analyzing genotypic (PFGE) and tested for antimicrobial susceptibility using the interpretive standards published by the Clinical and Laboratory Standards Institute (CLSI). Analysis of band patterns of GBS isolates by using criteria established by Tenover *et al.* (1995) showed distinct clonal origin for the majority of isolates. The PFGE data allowed the differentiation of GBS isolates into 21 pulsotypes: 14 pulsotypes for human and 7 for animal. No predominant patterns were detected among GBS human isolates. However, for animal the pulsotype B was prevalent. The analysis of the antimicrobial susceptibility profiles of GBS isolates from human and bovine revealed universally susceptible to penicillin G, ampicillin, levofloxacin, chloramphenicol, linezolidan and ceftriaxona. Conversely, 64.5%, 16.1% and 12.9% isolates were resistant to tetracycline, clindamycin and erythromycin, respectively. In conclusion, the high degree of genetic heterogeneity of the GBS strains indicates the endemic nature of GBS infection in our community. Moreover, an increased resistance to clindamycin and erythromycin was observed among GBS strains isolated from human and bovine isolates from Brazil, reflecting an adaptation to the use of macrolides and lincosamides antibiotics in our community.

Key Words: *Streptococcus agalactiae*, Pulsed-field gel electrophoresis (PFGE), antimicrobial susceptibility

Financial support: FAPERJ, CNPq, SR2-UERJ.