

TITLE: CHARACTERIZATION OF GROUP B *Streptococcus* FROM PARAÍBA STATE OUTPATIENTS

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ABSTRACT:

Streptococcus agalactiae, or group B *Streptococcus* (GBS), is an asymptomatic colonizer of healthy adults' digestive and genitourinary tracts and is the cause of neonatal diseases and an agent of infections in immunocompromised and elderly. Urinary tract infections caused by GBS in pregnant women are related to miscarriage, intrauterine fetal death, chorioamnionitis, and rupture of the amniotic membrane, causing premature births. The drugs of choice for humans' GBS infection treatment or prophylaxis include penicillin and cephalosporins, followed by clindamycin or macrolides, and lastly, vancomycin. The clinical use of tetracycline in humans is limited due to resistance. In addition to antimicrobial prophylaxis, implementing a vaccine based on the sialic acid-rich capsular polysaccharide (CPS) prevalent types for pregnant women is a promising strategy to prevent neonatal and infant GBS disease. GBS express ten types of CPS (Ia, Ib, II-IX), so the description of the prevalent serotypes in a region is crucial to vaccine development. We characterized 75 GBS isolated from different clinical specimens of outpatients in João Pessoa - PB. We determined the isolates' capsular types by multiplex PCR, and their susceptibility to penicillin, erythromycin, vancomycin, clindamycin, levofloxacin, chloramphenicol, tetracycline, and linezolid by disc diffusion according to the CLSI; the minimal inhibitory concentration (MIC) of penicillin was determined by E-test. We analyzed the clonality of the isolates using DNA macrorestriction followed by pulsed-field gel electrophoresis. There was a high GBS clone diversity among the outpatients in the Paraíba community, with the 75 isolates clustered in 45 pulsotypes (pulsotypes 1-45). Four isolates were CPS non-typeable. Fifty eight out of seventy five isolates were resistant to tetracycline, a feature of human-adapted GBS strains. In addition to tetracycline resistance, five isolates were resistant to clindamycin, three to chloramphenicol, five to erythromycin, and one to levofloxacin. Six isolates showed sensitivity with increased exposure, one for chloramphenicol, three for erythromycin, and two for tetracycline. All isolates were susceptible to penicillin and the MIC50 and MIC90 were 0.047mg/L and 0.064mg/L (range 0.023 to 0.094mg/L). In conclusion, serotypes Ia and V showed the highest occurrence among the isolates, and the Paraíba community patients still can count on the main antibiotic alternatives to treat GBS infections.

Keywords: *Streptococcus agalactiae*; capsular Sorotype; GBS

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