ORT_22 - Molecular characterization of *Streptococcus agalactiae* group B (SGB) isolated from pregnant women in Rio de Janeiro

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Introduction: Group B *Streptococcus agalactiae* (GBS) is considered an important cause of neonatal mortality in Brazil and worldwide. The correct identification and characterization of this organism regarding its susceptibility profile to antimicrobials, provide important data for the adoption of appropriate therapeutic and preventive measures.

Objective: This study aimed to identify GBS strains isolated from urine, vaginal secretion and rectum-vaginal swab of pregnant women in Rio de Janeiro, as well as to confirm the identification of these strains and subsequently determine the susceptibility profile to different antimicrobials and the resistance mechanisms of the strains with reduced susceptibility.

Methodology: Thirty-three samples used in this study were part of a research project in collaboration with the NeoLab Laboratory, the isolates were confirmed as GBS by qPCR-HRM using specific primers targeting the *dlt*Rgene that encodes the carrier protein D-alanine-D-alanyl ligase. The susceptibility to antibiotics was determined by disk-diffusion test. The Resistant strains by disk-diffusion test, were confirmed by the minimum inhibitory concentration (MIC) with E-test strips, for the quantitative determination of resistance to specific antibiotics and the determination of Clindamycin induced resistance was performed by D Test.

Results: The GBS INCQS 00128 strain (ATCC 13813) was used as reference, with a Tm of 73.3ºC and a range of ± 0.8°C which was considered for the identification of clinical samples as GBS. The strains confirmed as resistant by MIC were distributed as follows: erythromycin: 12 resistant strains by disc diffusion test, three confirmed by MIC, nine to be confirmed; clindamycin: nine resistant strains by disc diffusion test, six confirmed by MIC, three to be confirmed; penicillin: two resistant strains by disc diffusion test, not yet confirmed by MIC; levofloxaine: six resistant strains by disc diffusion test, five confirmed by MIC, one to be confirmed; chloramphenicol: one resistant strain not yet confirmed by MIC; azithromycin: 15 resistant strains not yet confirmed by MIC. No resistant strains were detected for ceftriaxone, linezolid and rifampicin by disc diffusion test.

Conclusion: The rapid and sensitive detection by qPCR-HRM combined with the low cost of the technique, since it does not require probes as in the Taqman system, make this method an important candidate for use in public laboratories. Of the 33 strains of GBS analyzed, sixshowed confirmed resistance by MIC for at least one antibiotic and of these, four showed resistance to three classes of antibiotics, macrolides, lincosamides and quinolones, and were classified as multi-drug resistant strains (MDR). The project where this study is included, also foresees the determination of the resistance mechanisms of strains with reduced susceptibility to antibiotics and MLST profile.

Keywords: *Streptococcus agalactiae* group B (SGB); qPCR-HRM; Antibiotic susceptibility