ACCURACY COMPARISON OF A NEW PCR ASSAY TO CULTURE-BASED METHODS FOR THE SCREENING OF GROUP B STREPTOCOCCUS (GBS) IN PREGNANT WOMEN

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Introduction: 5-40% of all pregnant women have rectovaginal colonization with Group B Streptococcus (GBS) which is asymptomatic in almost all cases. GBS causes a severe invasive disease, like sepsis, in newborns. Although the laboratory methods for the identification of GBS have evolved, there remains a clinical and commercial need for further accuracy. Objective: to compare the accuracy of simple culture (SC), polymerase chain reaction (PCR) targeting the ATR gene and enrichment culture (EC) to identify the presence of GBS in pregnant women. Methodology: 92 pregnant women at 36 weeks or more of gestation that were attended to in the primary health care units at the HCPA were screened by collecting a swab with anal and vaginal secretions – as the recommendation of the CDC. The same swab was used for the SC (direct plating onto sheep blood agar) and EC (plating after culturing into BHI broth supplemented with gentamicin and nalidixic acid) both followed by CAMP test, and for the PCR assays targeting the ATR gene. Statistical analysis was done in SPSSv.15.0 using EC as gold-standard. Results: The SC method was positive for 8%, the EC for 22.5% and the PCR assay for 35.9% of the patients. The sensitivity of the PCR assay was 100% and specificity was 82.6%. ATR primers showed high specificity to GBS identification in our assays. Conclusion: This PCR based test was shown to be more sensitive than the standard selective culture method, providing a diagnostic tool for GBS detection, allowing more accurate and effective intrapartum antibiotic prophylaxis. For this reason PCR method was introduced for GBS screening in HCPA.