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Direct identification of *Streptococcus agalactiae* at vaginal colonization in pregnant women by PCR

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Purpose: *Streptococcus agalactiae* is a commensal organism but it may cause infection in susceptible hosts including newborns, pregnant or postpartum women. Applying rapid, accurate, and sensitive method for detecting GBS and receiving intrapartum antibiotic prophylaxis (IAP) at delivery have been demonstrated to increase treatment possibility of carrier pregnant women and decrease the rates of GBS vertical transmission to infants. The aim of this study was to evaluate PCR assay targeting 16S rRNA primers compared with conventional culture method for direct detection of GBS in vaginal specimens of pregnant women at 35–37 weeks of gestation in Hamadan.

Methods: 203 vaginal specimens of pregnant women at 35–37 weeks of pregnancy from June 2013 through February 2014 were evaluated for detection of GBS using culture method and PCR assay.

Results: Prevalence of GBS in 203 collected samples was 7.39% using culture method and 19.70% using PCR assay. 25 specimens resulted positive by PCR and negative by culture; 2 specimens resulted positive by culture and negative by PCR. Generally, a total of 42 specimens (20.69%) were considered true positive. PCR results in comparison to culture (as gold standard) revealed sensitivity of 88.24%, specificity of 87.44%, positive and negative predictive value of 35.71%, 98.95%, respectively, and accuracy of 87.50%.

Conclusions: The study data demonstrated that performing only culture method leads to missed false negative carrier individuals. Thus, it is recommended that both the PCR assay and conventional culture method perform routinely in order to detect GBS in pregnant women accurately. Besides, PCR diagnosis demonstrated a shorter turnaround time when compared with time consuming culture method.

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