

Comparison of nested and ELISA based polymerase chain reaction assays for detecting Chlamydia trachomatis in pregnant women with preterm complications

Abstract

Identification of pregnant women infected with Chlamydia trachomatis is essential to allow early antibiotic treatment in order to prevent adverse pregnancy outcomes. In this study, two nucleic acid amplification tests (NAAT) namely nested PCR (BioSewoom, Korea) and Amplicor CT/NG (Roche Diagnostic, USA) were evaluated in terms of sensitivity and specificity for the detection of C. trachomatis DNA in pregnant women with preterm complications. A cross-sectional study was carried out in two public hospitals in Southern Selangor, Malaysia. Endocervical swabs obtained were subjected to DNA amplification using nested PCR (BioSewoom, Korea) and Amplicor CT/NG (Roche Diagnostic, USA). A total of 83 endocervical swabs obtained from pregnant women of less than 37 weeks gestation and presented with preterm complications were subjected to chlamydial DNA detection using both assays. The study shows that Amplicor CT/NG assay is more effective in the detection of C. trachomatis DNA from endocervical swabs compared to Biosewoom nested PCR kit. Agreement between the two assays were poor ($\kappa=0.094$) with nested PCR showing a low sensitivity of 10.81% and a 97.83% specificity when compared to Amplicor CT/NG. The results obtained indicated that BioSewoom nested PCR was less sensitive than Amplicor CT/NG for detecting C. trachomatis in endocervical specimens and that another more reliable test is required for confirmatory result.

Keyword: Chlamydia trachomatis; Nested PCR; Amplicor CT/NG; Pregnant women