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Detection of Chlamydia trachomatis in endocervical specimens by an enzyme-linked polymerase chain reaction assay

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Abstract:

Chlamydia trachomatis (CT) is the most common cause of sexually transmitted infections (STI) worldwide and its early detection and treatment can reduces the high morbidity associated with this infection. In this study a sensitive diagnostic polymerase chain reaction (PCR)-based enzyme immunoassay (PCR-EIA) method was developed which detects CT in women with cervicitis. Endocervical swabs collected from 123 women (20-55 years) with cervicitis were tested by both conventional PCR, and PCR-EIA assays, using identical sets of primers to amplify a CT-specific plasmid. For the conventional PCR, amplicons were detected by agarose gel electrophoretic analysis and the PCR-EIA assay used biotin-labeled primers, strepavidin-coated plates, a digoxigenin-labeled probe, and a final enzyme-linked colorometric analysis (405 nm) was used to measure the CT amplicon. The frequency of positive CT infection by conventional PCR and PCR-EIA assay was 7% and 17%, respectively. The highest frequencies of CT infection were among women of 31-40 years old group (25%). The PCR-EIA limit of detection, calculated by linear regression analysis, was10 pg of CT DNA (r2=0.9642). The degree of agreement (Kappa) between the conventional PCR and PCR-EIA method was 0.556 (p<0.0001).

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