In situ localization of Chlamydia trachomatis and Chlamydial Heat Shock Protein 60 in Endometrial Curettage Tissue of Recurrent Spontaneous Aborters

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Description

In India, genital infection with Chlamydia trachomatis is a major health problem in women because of high prevalence (upto 81%). During pregnancy, chlamydial infection may cause various perinatal complications including spontaneous abortion [1,2]. Also, immunity to chlamydial heat shock protein 60 (chsp60) is associated with upper genital-tract infection and presence of chsp60 may regulate process of abortion by stimulating macrophage function [2]. Hence, aim of this study was to investigate whether C. trachomatis is associated with spontaneous abortion in patients with prior history of three or more spontaneous abortions, viz.: Recurrent Aborters (RA). We used immunohistochemical approach to localize chlamydial infection within the endometrial curettage tissue (ECT) in women with spontaneous abortion. Immunohistochemical analysis confirmed C. trachomatis in ECT (11/ 100) (Figure 1). Also, double staining was done for in situ localization of macrophages (CD 68) and chsp60 (within the macrophages) in ECT (Figure 2). chsp60 was co-localized within macrophages in (72.7%) infected RA. Serum level of IgG antibodies to chlamydial heat shock protein-60 (chsp60) was determined by using commercial kit as per manufacturer’s recommendations (Medac, Germany). Among the Chlamydia-positive RA, 63.6% (7 of 11) showed presence of serum chsp60 antibodies. Results suggest definite need for C. trachomatis screening in women experiencing spontaneous abortion to prevent recurrent miscarriage.

Figure 1: In situ localization of elementary body of Chlamydia trachomatis in the endometrial curettage tissue from patient undergoing recurrent spontaneous abortion (400X).

Figure 2: Dual staining for chlamydial heat shock protein 60 (red colour) and macrophages (CD 68; brown colour) in the endometrial curettage tissue from Chlamydia trachomatis-infected patient experiencing recurrent spontaneous abortion (200X).

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References