

Human leukocyte antigen class II DQ alleles associated with Chlamydia trachomatis tubal infertility

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Date: 2000

Abstract:

OBJECTIVE: To investigate epidemiologic tubal infertility risk factors and the relationship between HLA class II alleles and Chlamydia trachomatis tubal infertility. **METHODS:** Forty-seven women with tubal infertility and 46 fertile controls were studied in Nairobi, Kenya. A questionnaire was administered and serum collected for measurement of C trachomatis antibodies. HLA class II molecular typing was done with DNA extracted from peripheral blood lymphocytes. The prevalence of C trachomatis microimmunofluorescence antibody, chlamydia heat shock protein 60 antibody, and HLA class II alleles was compared among cases of tubal infertility and fertile controls. **RESULTS:** Women with tubal infertility more often had histories of pelvic inflammatory disease (15% versus 0%; odds ratio [OR] 16; 95% confidence interval [CI] 5.5, 47) histories of spontaneous abortion (34% versus 7%; OR 6.7; 95% CI 2.8, 16), and antibodies to C trachomatis (53% versus 26%; OR 3.2; 95% CI 1.3, 7.7) than controls. Among infertile women, DQA*0101 and DQB*0501 alleles were positively associated with C trachomatis tubal infertility (OR 4.9; 95% CI 1.3, 18.6, and OR 6.8; 95% CI 1.6, 29.2, respectively). DQA*0102 was negatively associated with C trachomatis tubal infertility (OR 0.2; 95% CI 0.005, 0.6). **CONCLUSION:** Chlamydia trachomatis infection is an important cause of tubal infertility in Nairobi. The association of specific HLA class II alleles with C trachomatis microimmunofluorescence seropositivity among women with tubal infertility suggests that the DQ locus might modify susceptibility to and pathogenicity of C trachomatis infection.