

SUSCEPTIBILITY OF HUMAN LEUKOCYTES ANTIGENS HLA-DRB1 TO TOXOPLASMA GONDII INFECTION WITH PREGNANCY

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ABSTRACT

Background

Toxoplasma gondii is an intracellular parasite which infects a widespread in humans and mammalian hosts and can cause severe disease in immune-compromised persons due to reactivation of a previous latent infection, and can be life-threatening disease.

Aim of the Study

To investigate whether an immunogenetic (HLA-DRB1) predisposition exists in mothers infected with *Toxoplasma gondii* parasite.

Patients and Methods

Thirty unrelated women with first trimester miscarriage, their age ranged from 18-35 years, referred to Private Clinics at Baghdad were enrolled in this study from January, 2014 through September, 2015. Thirty normal non pregnant women with negative obstetric history of abortion ethnically matched with patients group selected as control group. 18-34 years. DNA was extracted, amplification and hybridization was performed using a panel of sequence-specific oligonucleotide probes (SSOP) using HLA-DRB1 amplification and hybridization kits (SSO HLA type DRB1 plus and master mix for HLA type DRB1 amp. plus kits -Innogenetics-Belgium) using automated method by Auto Lipa – 48 Innogenetics-Belgium. The results were interpreted using LiRas version-5.0 software-Innogenetics-Belgium.

Results

There was an increased frequency of HLA-DRB1*03:01:01 in patients with *Toxoplasma* compared with healthy controls ($P < 0.024$, odd ratio=4.33, 95% CI:1.20 –15.60). The other alleles HLA-DRB1* 04:03:01 and HLA-DRB1*11:01:01 were also increased in *Toxoplasma* patients and not detected in control group.

Conclusions

There is a significant association between *Toxoplasma* infection and HLA-DRB1*03:01:01 in Iraqi Arab Muslims patients. This study was conducted with a small sample. We suggest further studies with larger sample.

KEYWORDS: *Toxoplasma*, Genetic, HLA

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