

Prenatal Genetics, Reproductive Genetics

AB032. Cytokines gene polymorphism in pregnant women at a risk of preeclampsia

Madhavi Puppala¹, Lakshmi Kalpana Veerathu¹, Anuradha Argi¹, Sudhakar Godi¹, Sunil Kumar Polipalli²

¹Department of Human Genetics, Andhra University, Visakhapatnam, Andhra Pradesh, India; ²Department of Pediatrics, Lok Nayak Hospital, New Delhi, India

Background: Preeclampsia is a pregnancy-specific syndrome that may be dangerous especially to the fetus. Different cytokines have been found to be elevated in women with preeclampsia and may have possible roles in the development of this disorder, so the study was designed to investigate the genetic polymorphism of IFN- γ (+874 A/T; rs2430561), TNF- α (-308 G/A; rs1800629), TNF- α (-238 rs361525), IL-4 (rs2243250), IL-6 rs1800795, IL-10 (-819) rs1800871, IL-10 (-1082) rs1800896, IL-10 (-592) rs1800872 with preeclampsia and healthy controls in North Coastal Andhra Pradesh of India.

Methods: A total of 200 samples (100 preeclamptic women and 100 normal pregnant women as control group) using allele-specific oligonucleotides-polymerase chain reaction and PCR RFLP method were genotyped. Data was analyzed

using chi-square and Fisher's exact tests.

Results: Three SNPs (TNF- α , IL-4 and IL-6) showed association with the genotype and allele frequencies between the study groups. TNF- α (G-308A) G/G genotype showed a significantly higher frequency among the preeclamptic group than the control group [odds ratio (OR): 0.4603, 95% confidence interval (CI): 0.2521–0.8405; P=0.005]. G/A genotype also showed higher frequency in both the study groups (OR: 2.508, 95% CI: 1.341–4.689; P=0.001). IL-4 (C590T) C/T genotype showed significantly higher frequency among the preeclamptic group compared to controls (OR: 2.452, 95% CI: 1.299–4.626; P=0.002), IL-6 (G174C) genotype significantly higher frequency among the preeclamptic group than the control group (OR: 0.4603, 95% CI: 0.2521–0.8405; P=0.005). There was no significant difference in genotype, allele frequencies and no independent association among the other three SNPs between the groups.

Conclusions: The present study might suggest a role for TNF- α (G-308A), IL-4 (C590T), -174 GC of IL-6 genotype in the development of preeclampsia; suggesting that they are of differing genetic predisposition/pathophysiology.

Keywords: Preeclampsia; cytokines; TNF; IL-4; IL-6; IFN- γ

doi: 10.21037/atm.2017.s032

Cite this abstract as: Puppala M, Veerathu LK, Argi A, Godi S, Polipalli SK. Cytokines gene polymorphism in pregnant women at a risk of preeclampsia. *Ann Transl Med* 2017;5(Suppl 2):AB032. doi: 10.21037/atm.2017.s032