Association of CTLA-4 +49 A/G and CT60 Gene Polymorphism with Graves' Disease

Nehad A. Fouad[1,3], Aml M. Saeed[1], Ahmed W Mahedy [2]

Departments of [1]Medical Microbiology & Immunology and [2]Internal Medicine, Faculty of Medicine, Benha University, Benha, Egypt, [3]Medical Microbiology & Immunology, Faculty of Medicine, Taibah University, Saudi Arabia.

Graves' disease (GD) is an organ specific autoimmune disease of thyroid gland with genetic and environmental causes. One of genetic factors that have been implicated in the development of this disease is CTLA-4 gene polymorphism. This study aimed to investigate the association of CTLA-4 polymorphisms at position +49A/G, and CT60 with susceptibility to Graves' disease in Saudi patients. 40 adult Saudi patients with GD and 30 healthy controls were genotyped for the +49 A/G and CT60 of the CTLA4 gene using restriction fragment length polymorphism analysis (RFLP). There was a significant difference between GG genotype and AA genotype in GD patient in comparison to control group (P = 0.007), GG genotype was the most prevalent and the AA genotype was less frequent in the GD patients. The G allele at position +49 was more frequent in patients with GD than in the control group. Statistically significant differences between A and G alleles of GD patient and control groups were found (p= 0.003; OR =2.85 and 95% CI =1.4-5.7). The G allele in CT60 was higher in GD patients than those in controls (OR=2.8, 95% CI =1.4-5.7 and P = 0.004). In c*onclusion*, CTLA-4 polymorphism at position 49 and CT60 may be potentially associated with the risk of GD among Saudi patients.