

Relationship of TNF- α -308, IL-10-1082 Gene Polymorphisms with the Severity and Susceptibility of Rheumatic Heart Disease

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Introduction: Acute rheumatic fever is an inflammatory disease developing after upper respiratory tract infection with group A streptococci and its most important complication is rheumatic heart disease. Recent studies emphasize the importance of IL-10 and TNF- α gene polymorphism in the pathogenesis. There are limited numbers of studies reporting TNF- α -308 and IL-10-1082 gene polymorphism may induce susceptibility to rheumatic heart disease. Gene polymorphisms change depending on race, and in Turkey there is no study on IL-10-1082 gene polymorphism in the patients with ARA. However, there are only two studies on TNF- α -308 of which results were conflicting. The aim of our study is to determine the frequency of IL-10-1082 A/G and TNF- α -308 G/A gene polymorphism in Turkish population and to investigate the relationship between these polymorphisms and rheumatic heart disease.

Methods: In this case-control study, the relationship between G/A polymorphisms in TNF- α -308 gene, A/G polymorphism in IL-10-1082 gene and rheumatic heart disease and valvular involvement. A total 57 patients with rheumatic heart disease and 99 healthy controls were included.

Results: The rate of TNF- α -308 gene polymorphism was %3,1 in healthy subjects and this polymorphism was not observed in patients with rheumatic heart disease. In healthy subjects, the frequency of IL-10-1082 gene polymorphism was higher than the patients with rheumatic heart disease. There was no relation between TNF- α -308 genotype and allele distribution with valvular involvement ($p>0.05$). IL-10-1082 G/G and A/G genotypes were seen more frequent in patients with multiple valvular disease but there was no statistical significance ($p>0.05$).

Conclusion: As a result, there was no relationship between TNF- α -308, IL-10-1082 gene polymorphisms and rheumatic heart disease or valvular involvement in the study population ($p>0.05$). TNF- α -308 polymorphisms are silent and may become important only with some certain HLA alleles. Studies checking both cytokine polymorphism and HLA alleles are needed.