

## TNF- $\alpha$ , TNF- $\beta$ and IL-10 Gene Polymorphism and Association with Oral Lichen Planus Risk in Saudi Patients

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**Abstract :** Objectives: Oral lichen planus (OLP) is a chronic inflammatory oral mucosal disease. Cytokines play an important role in the pathogenesis and disease progression of OLP. The purpose of this study was to investigate the association of tumor necrosis factor (TNF)- $\alpha$ , TNF- $\beta$  and interleukin (IL)-10 gene polymorphisms with the OLP risk. Material and Methods: Forty-two unrelated patients with OLP and 211 healthy volunteers were genotyped for TNF- $\alpha$  (-308 G/A), TNF- $\beta$  (+252A/G), IL-10 (-1082G/A), IL-10 (-819C/T), and IL-10 (-592C/A) polymorphisms. Results: The frequencies of allele A and genotype GA of TNF- $\alpha$  (-308G/A) were significantly higher while allele G and GG genotypes were lower in OLP patients as compared to the controls ( $P < 0.001$ ). The frequency of GA genotype of TNF- $\beta$  (+252A/G) was significantly higher in patients than in controls while the AA genotype was completely absent in OLP patients. These results indicated that allele A and genotype GA of TNF- $\alpha$  (-308G/A) as well as the GA genotype of TNF- $\beta$  (+252A/G) polymorphisms are associated with OLP risk. The frequencies of alleles and genotypes of -1082G/A, -819C/T and -592C/A polymorphisms in IL-10 gene did not differ significantly between OLP patients and controls ( $P > 0.05$ ). However, haplotype ATA extracted from 1082G/A, -819C/T, -592C/A polymorphisms of IL-10 were more prevalent in OLP patients when compared to controls indicating its possible association with OLP susceptibility. Conclusion: It is concluded that TNF- $\alpha$  (-308G/A), TNF- $\beta$  (+252A/G) and IL-10 (-1082G/A, -819C/T and -592C/A) polymorphisms are associated with the susceptibility of OLP, thus giving additional support for the genetic basis of this disease. Further studies are required using a larger sample size to confirm this association and determine the prognostic values of these findings.

**Keywords :** oral lichen planus, cytokines, polymorphism, genetic

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