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Interleukin-10 and 18 gene polymorphisms and the risk to develop erosive oral lichen planus: A hospital-based case-control study

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Statement of the Problem: Studying the genetic polymorphisms influencing the expression of cytokines playing an important role in the pathogenesis of Oral Lichen Planus (OLP) has gained much ground over the past years. Taking into consideration that erosive subtype of OLP has been associated with high rate of malignant transformation. The purpose of this study was to evaluate the association of Interleukin (IL)18 and IL10 gene polymorphisms with OLP risk with special emphasis on the erosive OLP subtype and to evaluate the impact of these polymorphisms on their tissue expression in OLP.

Methodology & Theoretical Orientation: This study included 72 OLP patients and 75 healthy controls. All subjects were examined for IL10 and IL18 gene polymorphisms by Polymerase Chain Reaction - Restriction Fragment Length Polymorphism PCR-RFLP and tissue expression of IL10 and IL18 by Enzyme-linked immune sorbent assay (ELISA).

Findings: IL18 was higher, while IL10 was lower in OLP ($P<0.001$). Moreover, IL18 was higher and IL10 was lower in erosive OLP ($P<0.001$). Patients showed a significant higher percentage of IL18-137 GG and IL10-592 AA ($P=0.013$ and 0.043 respectively). Significant higher prevalence of the IL18-137 G allele ($P=0.003$), the IL18-607 A allele ($P=0.031$), and the IL10-592 A allele ($P=0.046$) have been also detected in OLP. A significant relation has been found in IL18-137 and IL10-592 genotype frequencies within the subgroups of OLP patients.

Conclusion & Significance: IL10 and IL18 gene polymorphisms were associated were down-regulation of IL10 and up-regulation of IL18, which might have a role in the pathogenesis of OLP. IL18-137 GG or IL10-592 AA and the presence of IL18-137 G allele or IL10-592 A allele might contribute to genetic susceptibility to OLP. IL18-137 GG might confer susceptibility to erosive OLP. OLP patients with IL10-592 CA genotype and healthy individuals with IL10-819 CT genotype were prone to develop erosive OLP bearing the higher risk of malignant transformation.

Biography

Rania Abdel Hay has completed her MBBCh from Cairo University, Egypt and presently she is a Professor in the Dermatology Department, Faculty of Medicine, Cairo University. She has published more than 60 papers in reputed journals and has been serving as an Associate Editorial Board Member of repute journals. She has built her career after years of experience in research and teaching both in hospital and education institutions. Her main fields of research include cancer prevention, dermoscopy, hair and nail diseases and any skin disorders.

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