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Genetic markers associated with alopecia areata among Saudi cases

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Background and Objectives: Alopecia areata (AA) is a common skin disorder. The complete etiology of this disease remains to be identified but it seems that aberrant expression of cytokine genes might be a contributing factor. This study aimed to investigate the association between genetic polymorphisms related to interleukin 4 (IL-4) promoter and receptor (IL-4R) genes as inflammatory modulators with alopecia areata.

Design and Setting: Case-control study conducted on 78 AA patients recruited from outpatient dermatology clinics affiliated to Qassim University, Saudi Arabia.

Patients and Methods: Patients` data were compared with 93 normal healthy unrelated controls from the same locality. Genomic DNA was extracted and processed using the real time PCR amplification for characterization of polymorphisms related to IL-4 (-590 T/C) and IL-4R (Q551R A/G) genes.Conclusion: PL can be used as an alternative source for FBS in the expansion of dental stem cells for clinical use. These cells in reference to their neural crest origin, and their neurogenic differentiation potential, will be used to regenerate neurons.

Results: Comparing AA patients with controls regarding their IL-4 (-590 T/C) genotype polymorphism showed a higher frequency of the mutant CC homozygous genotypes among cases (63.2% vs. 53.8%) yet, statistically non-significant. Also cases showed a lower frequency of the wild type TT compared to controls (5.3% vs. 10.8%) that was also statistically non-significant. On the other hand, cases showed nearly equal frequencies of polymorphic variants with the controls regarding the IL-4R (Q551R A/G) i.e., a no significant difference. Comparing allelic frequencies of studied IL-4 and IL-4R gene polymorphisms showed also a nonsignificant difference between cases and controls although the frequency of the IL-4 C and IL-4R A alleles were higher among cases than controls (78.9 vs. 71.5 and 78.8 vs. 72.6 respectively). Analysis of combined IL-4/IL-4R genotype polymorphisms among cases and controls showed also a non significant difference with nearly equal distribution for various combined genotypes.

Conclusion: This study provides an evidence for a nonsignificant association of IL-4 (-590 T/C) and IL-4R (Q551R A/G) genetic polymorphisms with the susceptibility to AA among Saudi cases.

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