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**Association of IL-4
(-590 T/C) and IL-4R
(Q551R A/G) gene
polymorphisms with
acne vulgaris**

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Background and Objectives: Acne vulgaris 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) promotor and receptor (IL-4R) genes as inflammatory modulators with acne vulgaris.

Design and Setting: Case-control study conducted on 95 acne patients recruited from Outpatient Dermatology Clinics affiliated to Qassim University, Saudi Arabia.

Patients and Methods: Acne patients' data were compared with 87 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.

Results: Acne patients compared to controls showed no significant difference regarding frequencies of IL-4 (-590 T/C) polymorphic genotypes ($p=0.8$), yet with a high significant difference regarding IL-4R (Q551R A/G) genotypes ($p<.001$). The frequencies of the mutant genotype IL-4R GG as well as the allele IL-4R G were significantly higher in cases of acne than in controls. Furthermore, acne cases showed higher frequencies of combined genotypes IL-4R_GG with IL-4_CC, CT or TT genotypes. However, no significant difference was noted on comparing cases subgroups related to disease severity or response to treatment ($p>0.05$).

Conclusion: This study provides an evidence for a significant association of IL-4R (Q551R A/G) genetic polymorphisms with the susceptibility rather than the severity of acne vulgaris.