ACNE, ROSACEA, AND RELATED DISORDERS (INCLUDING HIDRADENITIS SUPPURATIVA)

INSULIN LIKE GROWTH FACTOR-1 RECEPTOR POLYMORPHISM AS A DETERMINANT FOR ACNE PATHOGENESIS OR ITS SEVERITY

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Introduction: Acne vulgaris is a chronic inflammatory disease of pilosebaceous units and is common in adolescents. Insulin Like Growth Factor (IGF-1) plays an important role in the pathogenesis of acne. Binding of IGF-1 with its receptor, IGF-1 receptor (IGF-1R), initiates a downstream signaling cascade thus activating intracellular signaling pathways, e.g. lipid synthesis pathway in sebocytes. Single nucleotide polymorphism of IGF-1R (rs2229765) has been found to play an important role in various carcinomas and autoimmune diseases. However, the role of this polymorphism in acne and its severity is still not studied.

Objectives: The objective of the study was to evaluate the association of IGF-1R gene polymorphism (rs2229765) and the tissue level expression of IGF-1R with acne or its severity in Indian acne patients.

Material and Methods: One- hundred acne patients of all clinical severities and one hundred healthy controls were included in the study. Restriction fragment length polymorphism (rs2229765) and the levels of IGF-1, IGF binding protein-3, testosterone and SHBG were performed in both the groups. Biopsy samples were taken to study the tissue level expression of IGF-1R.

Results: Genotype GG was found to be higher in acne groups but the genotype was not found to be associated with acne severity. The levels of IGF-1 and IGFBP-3 were found to be increased in acne patients as compared to controls. The mRNA expression of IGF-1R was 1.6-fold higher in acne patients compared to controls.

Conclusion: IGF-1R polymorphism was more prevalent and tissue level expression of IGF-1R was higher in acne patients but they may not be associated with acne severity.