The effect of single nucleotide polymorphisms (SNPs) of cytokines on the pathogenesis of Systemic Lupus Erythematosus with arthritis among Jordanians patients

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Al-Zaytoonah University of Jordan, 2023

Abstract

Arthritis is an extremely common manifestation in patients with Systemic Lupus Erythematosus (SLE). Single nucleotide polymorphisms (SNPs) in cytokines have been studied extensively in different populations with Lupus Arthritis. The aim of this study was to evaluate the frequency of SNPs in the cytokine genes, including INF-γ, TNF-α, IL-10, IL-6, and TGF-β1 among Jordanian patients diagnosed with Lupus Arthritis in comparison to control group using PCR-SSP technique. Our findings showed TNF-α-308* G allele (P=0.003), TNF-α-308 G/G genotype (P=0.003), IL-10-1082 G/G (P=0.002), IL-10 (GCC/GCC) genotype (P=0.002) and TGF-β1 (c10, c25) GG haplotype (P=0.009) are suggested to be associated with an increased risk of Lupus Arthritis. On the other hand, TNF-α-308*A allele (P=0.003), TNF-α-308 G/A genotype (P=0.009), IL-10-1082 G/A (P<0.01), and IL-10 (GCC/ACC) genotype (P<0.01) are suggested to be protective against Lupus Arthritis. This study suggested that understanding the role of cytokines SNPs may help in early diagnosis, prevention, management, and treatment of the disease.

Keywords: Cytokines, Jordan, Lupus Arthritis, Single Nucleotide Polymorphisms, Systemic Lupus Erythematosus.