

The influence of different cytokine genetic variants on the pathogenesis of Multiple Sclerosis among Jordanians patients

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Abstract

Multiple sclerosis (MS) is a chronic inflammatory disease that causes lesions in the brain and spinal cord. Genetic factors besides environmental factors are associated with the pathogenesis of MS. In this study we aimed to investigate, for the first time, the influence of single nucleotide polymorphisms (SNPs) of certain cytokines, including (TNF- α , IL-6, IFN- γ , IL-10, TGF- β 1), on the pathogenesis of MS among Jordanians population, using Polymerase Chain Reaction-Sequence Specific Primer (PCR-SSP) technique. Our results showed that GG genotype of IL-6 -174 G/A polymorphism was linked to the increased risk of MS. Moreover, G allele and GG genotype of IL-10 -1082 G/A, additionally, GCC/GCC genotype and GCC haplotype of the same cytokine showed an association with the increased risk of developing MS. In contrast, GC genotype of IL-6 -174 G/C, A allele of IL-10 -1082 G/A, GCC/ACC genotype, and ACC haplotype of IL-10 are suggested to be protective against MS. This study may help in early diagnosis, prevention, and management of the disease.

Keywords: Cytokines, Jordan, multiple sclerosis, single nucleotide polymorphisms.