A study of Major Histocompatibility Complex (MHC) genes' association with Multiple Sclerosis in Jordanian patients

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Al-Zaytoonah University of Jordan, 2023

Abstract

Multiple Sclerosis (MS) is an autoimmune disease affecting the central nervous system. The pathogenesis of MS is characterized by demyelination and neuronal axonal degeneration. One of the many genes that raises MS risk is HLA-class II. The aims of this study were to compare the frequency of the HLA-DRB1 and HLA-DQB1 genes in Jordanian MS patients to that of a control healthy group, as well as to determine whether these genes were associated with optic neuritis, sensory impairment, and brain stem symptoms in MS patients, by using PCR-SSP techniques. Our findings indicated an association between MS patients and the following HLA-DRB1 genes: *0301 (p=0.01), *0401 (p=0.047), and *1501 (p=0.014). Also, HLA-DRB1*1501 and HLA-DQB1*0601 were shown to be significantly associated with optic neuritis patients compared to MS Jordanian patients (p=<0.001 and p=0.04, respectively). Moreover, HLA-DQB1*0501 (p=<0.001), HLA-DQB1*0602 (p=0.006) were related with sensory impairment and HLA-DRB1*0701 (p=0.014) was related with brain stem symptoms, respectively, in MS patients. Knowing the genes that are linked to MS may aid in early disease diagnosis, prevention and treatment.

Keywords: HLA class II genes, Multiple Sclerosis, Jordan