Immune-genetic Characterisation of Multiple Sclerosis Patients in Latvian Population

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Introduction. Multiple sclerosis (MS) is the most common neurological disease affecting young adults in Western part of the world. MS is a central nerve system (CNS) demyelinating disease associated with complex pathogenic autoimmunity against several CNS-myelin target antigens. Although the etiology of MS is yet unknown, numerous studies have confirmed a strong genetic component underlying its etiology. There is an association with the HLA-DRB1*1501-DQB1*0602 haplotype which has been repeatedly demonstrated in high-risk (northern European) populations which also include the Latvian population.

Aim, Material and Methods. The aim of the study was to determine HLA-DRB1 alleles in patients with clinical and radiogically approved MS diagnosis in the Latvian population.The study included 59 patients with MS and 100 control (healthy) persons. Immunogenetic tests were performed at Rīga Stradiņš University, Laboratory of Clinical Immunology and Immunogenetics. The HLA genotyping was performed with PCR method using mixture primers of DRB1 16 allele gene variants.

Results. Typing of all eighteen DRB1 alleles were investigated. The frequency of HLA-DRB1*15 (RR 5.58 [2.61–12.14]; p = 0.01) was significantly increased in the multiple sclerosis patients compared with the control group. HLA-DRB1*04 (RR 1.97 [0.71–5.46]; p = 0.14 and DRB1*11 (RR 1.34 [0.63–2.82]; p = 0.41) were shown to be considerably increased in patients, although the difference was no longer significant when the p-value was no corrected for the number of alleles. And, the allele DRB1*02 (RR 0.32 [0.07–1.22]; p = 0.06) was smaller in Latvian multiple sclerosis patients and higher in the control group.

Conclusions. The predisposition to MS in Latvian population appears not to be limited of HLA-DR; yet, some alleles also have a significant influence. Potentially with a higher risk of developing Multiple sclerosis in Latvian population are people with the gene HLA-DRB1*15 and HLA-DRB1*04 alleles.