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HLA- DRB1*0101 exon 2 structure polymorphism's study in-patients with HIV/AIDS

Lilija Kovalchuk¹, Elena Eglite¹,
Diana Kasjko¹, Arthur Sochnev¹
and Ludmila Viksna²

¹Riga Stradins University (RSU), Latvia

²Laboratory for Clinical immunology &
immunogenetic, Latvia

Human leukocyte antigen is a fundamental component of the immune system, but the extent of its role in the control of HIV-1 infection and disease progression remains unclear. One of the AIDS hypotheses explains the greater inclination to the given pathology by the presence of HLA haplotypes, associated with the higher reactivity of immune system. Exon 2 of this β -chain gene codes for many of the residues impinging on the peptide binding groove and has known nucleotide variants positions. The aim of this study genetic parameters correlating with HLA DRB1*0101 exon 2 have yet to be fully established. DNA samples were obtained from 100 patients with AIDS from the Latvia. All patients at the moment of the initial reference had A-I a stage. We investigated the association of HLA-DRB1*0101 alleles with low/rapid progression to AIDS. HLA typing high-resolution for HLA-DRB1*01:01:01; - was performed by Real time polymerase chain reaction with sequence-specific primers. DRB1 gene 2. exon sequences obtained from the analysis: a comparison with the reference sequences the IMGT/HLA database. P-value was calculated using EPI INFO software version 6 with 95 % confidence intervals and Mantel-Hanszel. Considerable variation was observed in the studied exons 2. as previously described. Noticeably, there was a distortion consisting of a substitution in Glu codon among the sequence of HIV-1-infected patients and AIDS patients, which was located in codon 28 on exon 2 (the codon number was based on the comparison with the reference-type HLA-DRB1*0101 reported by IMGT/HLA nomenclature. Discordance in this HLA-DRB1*0101 2. exon genotype was significantly more common among non-progression HIV/AIDS (27% codon 9; 28% codon 87) ($P = 0.001$). Than among fast-progression AIDS patients (36% codon 14). This suggests a reduced risk of non-progression HIV/AIDS among the patients with mutation genotypes in comparison with non- mutation with concordant genotypes in exon 2 (odds ratio 0.05, 95% confidence interval 0.00-0.53). In view of this, certain allelic mutations in the HLA-DRB1*0101 gene 2 exon could lead to the increased or decreased protection of patients from in- disease progression. However, larger studies will be needed to elucidate fully the significance of this mutation in HLA-DRB1*0101 2 exon HIV/AIDS infection progression.