

ORIGINAL ARTICLE

HLA Gene Polymorphism in Patients with Chronic HBV Infection. Fundeni Clinical Institute Experience

Adriana TALANGESCU^{1,2}, Ion MARUNTELU^{1,2}, Alexandra-Elena CONSTANTINESCU^{1,3}, Andreia-Ioana CONSTANTINESCU^{3,4}, Maria TIZU^{1,2}, Ileana CONSTANTINESCU^{1,2,5}

¹Immunology and Transplant Immunology, Carol Davila University of Medicine and Pharmacy, 258 Fundeni Avenue, 022328 Bucharest, Romania

²Centre of Immunogenetics and Virology, Fundeni Clinical Institute, 258 Fundeni Avenue, 022328 Bucharest, Romania

³“Emil Palade” Center of Excellence for Young Researchers (EP-CEYR). Romanian Academy of Scientists (AOSR)

⁴Faculty of Medicine of “Titu Maiorescu” University of Bucharest, Str. Gheorghe Petraşcu no.67A, 031595, Bucharest, Romania

⁵Academy of Romanian Scientists (AOSR), 3 Ilfov Street, Sector 5, 022328 Bucharest, Romania

Correspondence to: Ileana Constantinescu, Immunology and Transplant Immunology, Carol Davila University of Medicine and Pharmacy, 258 Fundeni Avenue, 022328 Bucharest, Romania; Centre of Immunogenetics and Virology, Fundeni Clinical Institute, 258 Fundeni Avenue, 022328 Bucharest, Romania; e-mail: ileana.constantinescu@imunogenetica.ro

Abstract. Introduction: Hepatitis B virus (HBV) infection is a serious health problem for the public health systems in many countries worldwide. According to the European Society for the Liver Study, more than 350 million people are diagnosed with hepatitis B virus infection. Chronic viral HBV infection could be caused by the inability of both the cellular and humoral immune systems to eliminate HBV. HLA genes control cellular and humoral immune responses and present the viral antigens to CD8+ (cytotoxic T cells) and CD4+ T (T helper cells). **Aim:** To look at the HLA allele polymorphisms in chronic hepatitis B-infected patients to search for significant HLA allele associations. **Methods:** We have included 240 patients with HBV infection from the Gastroenterology and Hepatology ward, at Fundeni Clinical Institute. As a control group, 300 unrelated healthy people with no hepatitis B infection were also included. We have genotyped the HLA class I and class II genes for both patients and the control group with Next Generation Sequencing Illumina (Immucor, Mia Fora NGS Flex, Norcross, GA, USA). **Results:** Our preliminary data showed that HLA-DQA1*01:02:02 and HLADRB5*02:02:01 alleles are associated with the risk of HBV infection persistence. **Conclusions:** Our study showed that a specific HLA genotype profile is associated with chronic HBV infection in our Romanian patients.

Keywords: HBV, HLA, NGS Illumina.

DOI [10.56082/annalsarscimed.2024.1.22](https://doi.org/10.56082/annalsarscimed.2024.1.22)

Abbreviations:

HBV: hepatitis B virus

HLA: human leukocyte antigen

NGS: Next Generation Sequencing