GENETIC PROFILING OF HLA CLASS I AND II ALLELES IN ROMANIAN MYASTHENIA GRAVIS SUBTYPES

Mariana Pavel-Tanasa [1,2], Cristina Georgiana Croitoru [1,3], Daniela Constantinescu [1,2], Corina Cianga [1,2], Dan Iulian Cuciureanu [3,4], Diana Nicoleta Hodorog [3,4], Petru Cianga [1,2]

[1] Department of Immunology, *Grigore T. Popa* University of Medicine and Pharmacy, 700115 Iasi, Romania

[2] Laboratory of Immunology, "St. Spiridon" Clinical Hospital, 700106 Iasi, Romania

[3] Neurology Clinic I, "Prof. Dr. Nicolae Oblu" Emergency Clinical Hospital, 700309 Iasi, Romania.

[4] Medical Department III-Neurology, *Grigore T. Popa* University of Medicine and Pharmacy, 700115 Iasi, Romania.

Associations between specific Human Leukocyte Antigen (HLA) alleles and myasthenia gravis (MG) subtypes have been well documented in Western European and North American populations, with fewer studies in East Asia. Data for Eastern European populations, however, remain limited. This study aimed to characterize HLA Class I and II allele distributions in Romanian MG patients and their links to serological subtypes, including anti-acetylcholine receptor positive (RAch+ MG) and double-seronegative (dSNMG) cases. We consecutively enrolled 40 unrelated adult Romanian MG patients (80% female; median age at onset 42.5 years, range 1–78; RAch+ MG 75%; dSNMG 22.5%) and performed next-generation sequencing of HLA-A, -B, -C, -DRB1, and -DQB1 loci. Allele frequencies were compared with two matched control groups from the Allele Frequency Net Database. Confirmed associations included positive links with HLA-B*08, DRB1*14:54, DRB1*16:01, and a negative association with DRB113. Potentially novel associations were observed with HLA-A*02:36, B*47, B*73, B*44:27, and B*57:02. All alleles linked to MG remained significantly associated with RAch+ MG, independent of clinical presentation or thymic status, while dSNMG shared associations with HLA-B*47, B*44:27, and DRB1*14:54. These findings indicate both overlapping and distinct immunogenetic pathways in MG subtypes and represent the first comprehensive HLA allele mapping in Romanian patients.

E-mail:mariana.pavel86@gmail.com, mariana.pavel-tanasa@umfiasi.ro