Title: HLA-IMMUNOGENETICS IN MULTIPLE SCLEROSIS : ON CLINICAL APPLICATIONS AND PERSONALIZED THERAPEUTICS

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Multiple Sclerosis (MS) is a multifactorial disease of the Central Nervous System, with a neuroinflammatory and a neurodegenerative component, from its initiation and further on. Many factors have been described to play a role in the initiation and clinical course of the disease and in the response to medication. These factors include age at onset, gender, viral infections, Human Leucocyte Antigen (HLA)-genotype, non-HLA genes, Vitamin D levels, Body-Mass-Index(BMI) and smoking. HLA genetic profile is considered the most important, as it not only influences every aspect of the disease, the cognitive status included, but it also modifies the effect of the other factors. **HLA-DRB1*15:01** is the best established allele, both increasing the risk of MS 2-3 times and influencing response to first line medication (including Interferon-beta and Glatiramer Acetate), but neutralizing antibodies' formation against natalizumab, as well. Cognitive decline is a well recognized manifestation of MS and some new drugs are now available having a direct or indirect effect on this neurodegenerative feature. Only HLA-DRB1*15:01 has been proved to deteriorate cognitive function measured by neuropsychological tests. Other Class I and Class II HLA alleles have either a detrimental (DRB1*08:01, 03:01, 13:03, 15:03, 04:05) or a protective (DRB1*14:01, *07*11, A*02:01) effect on MS. Genome wide association studies(GWAS) provide evidence concerning the role of non-HLA genes, which have a well established, but much weaker than HLA genes, effect on MS risk. Although, taking into account their epistatic interactions, we conclude that HLA-genotyping, having the core role may lead to an individualized approach of MS patients, in different ethnic groups.

References: 1.Patsopoulos NA, et al. (2013) Fine-mapping the genetic association of the major histocompatibility complex in multiple sclerosis: HLA and non-HLA effects. PLoS Genetics 9: e1003926.
2.Maria Anagnostouli, et al (2014) HLA-DRB1* Allele Frequencies in Pediatric, Adolescent and Adult-Onset Multiple Sclerosis Patients, in a Hellenic Sample. Evidence for New and Established Associations. J Mult Scler 1.
3. de la Hera B, et al. (2014) Natalizumab-related anaphylactoid reactions in MS patients are associated with HLA class II alleles. Neurol Neuroimmunol Neuroinflamm 1: e47
4. Petros Stamatelos and Maria Anagnostouli (2017) HLA-Genotype in Multiple Sclerosis: The Role in Disease onset, Clinical Course, Cognitive Status and Response to Treatment: A Clear Step Towards Personalized Therapeutics. Immunogenet open access 2017, 2:1

Biography

Dr Maria Anagnostouli has completed her PhD from 1st Dept. of Neurology, of Medical Scool of NKUOA and postdoctoral studies from Neuro-ICU, Harvard University School of Medicine. Her Phd was on biotin determination in neurological disorders and especialy MS. Based on her results and suggestions, recently a patent was established concerning therapeutic use of biotin in Primary Prograssive MS, which is in progress. Her main interest is MS of adults, children and adolescents and she is the director of Immunogenetics Laboratory, at 1st Dept. of Neurology, Aeginition Hospital, Athens, Greece.She has published more than 40 papers in reputed journals and has been serving as an editorial board member of repute. She is member of scientific societies on neurology, neuroimmunology and MS. She has also written a book on Neuroaesthetics and a chapter on Neuroimmunology/Neuroinflammation.

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