HLA genotype as a marker of Multiple Sclerosis prognosis

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Introduction: Scientific evidence suggests that the Human Leucocyte Antigen system (HLA) is linked to multiple sclerosis (MS) [1,2]. The objective of this study is to further examine whether HLA is a marker of MS prognosis.

Methods: A total of 117 MS patients underwent HLA class I and II typing. Disease progression was assessed between two time points (years 2013 & 2015) based on clinical parameters, including Expanded Disability Scale Score (EDSS), Multiple Sclerosis Severity Score (MSSS), Timed 25-foot walk (T25W), Symbol Digit Modality Test (SDMT) and on magnetic resonance imaging (MRI). The percentage of brain volume change was assessed on the brain MRI scans using MSmetrix [3]. In order to investigate the correlation between HLA and clinical and MRI variables, the appropriate statistical approaches are performed. The effect of covariates gender,

	first versus second line treatment and days since the first MS symptom was also evaluated. Results: Analysis is still ongoing. Patients harboring HLA A2 have lower MSSS and lower a PBVC (multivariate analysis: p-value 0.01). However, only the effect for MSSS is significant (individual p-value 0.01) for this group. The effect of both MSSS and aPBVC are significant for the subset harboring the combination of both HLA A2 and DRB15. For this subset, not only the multivariate analysis provides a p-value of 0.007, but also the individual tests indicate a p-value of 0.04 for MSSS and p-value of 0.02 for aPBVC. Conclusion: Our preliminary analysis suggests that HLA A2, in particular in combination with DRB15, is a marker of better prognosis in MS with respect to MSSS and brain volume changes. Data with regards to the other Class I and II HLA alleles will be presented. References: (1) Fogdell-Hahn et al., Tissue Antigen 2000 (2) Zivadinov et al., J Neuroimmunol 2009 (3) Jain et al., NeuroImage Clinical 2015 Disclosure: All authors: nothing to disclose Source of funding: Department of Neurology, Erasme Hospital, Brussels, Belgium