

Abstracts of 5th International Congress on Autoimmunity, *Autoimmunity Reviews*. 2006; ISSN 1568-9972:p 203.

Prognosis in Multiple Sclerosis

C. Sindic

Cliniques Universitaires Saint-Luc, UCL, Brussels, Belgium

Multiple sclerosis (MS) is an inflammatory demyelinating disease of the central nervous system (CNS). There is an unmet need to develop specific serum based biomarkers for the diagnosis and prognosis of Relapsing Remitting MS (RRMS) at the time of first acute neurological event. As a result of systematic screening using glycan array, serum IgM antibodies against certain glucose based glycans: Glc(1,4)Glc (GAGA4), Glc(1,6)Glc (GAGA6) and –GlcNAc (GNa) and P64 were found in significantly elevated levels in RRMS patients in comparison to patients with other neurological diseases (OND). Significantly higher levels of anti-GAGA4 antibodies were observed in clinically isolated syndrome (CIS) patients who converted to RRMS (n=121) as opposed to OND (n=85). Thirty four (34) of 121 (28%) converting CIS patients were positive, whereas 77/85 (91%) OND patients were negative, corresponding to a sensitivity of 28% (CI 95% 20.6-34.3%), a specificity of 91% (CI 95% 82.3-95.8%), PPV of 86.5%, and NPV of 36.4%. In a group of CIS patient who converted to RRMS (n=85) a strong association was found between being positive for one of the markers and having next relapse within 24 months. Twenty six (26) of 54 (48%) of patients having next relapse before 24 months were positive for at least one of the markers, whereas only 6/31 (19%) of patients having next relapse after 24 months were positive (p=0.026, chi-square test, p=0.026, Odds-ratio=3.6). corresponding to a sensitivity of 48% a specificity of 81%, PPV of 81%, and NPV of 49%. In conclusion, high levels of anti-glucose IgM are specific to RRMS patients and are associated with more rapid disease progression.