POSTERS – NEUROLOGY

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Recombinant forms of myelin antigens expressed on CHO cells as a tool for identification of autoantibodies in serum of MS patients

Ewa Jaskiewicz[1], Grazyna Michalowska–Wender[2,3] & Mieczyslaw Wender[3]
[1]*Ludwik Hirszfeld Institute of Immunology and Experimental Therapy, Polish Academy of Sciences, Wroclaw, Poland,* [2]*Laboratory of Neurogenetics, University of Medical Sciences, Poznan, Poland,* [3]*Neuroimmunological Unit, M.Mossakowski Medical Research Centre, Polish Academy of Sciences, Poznan, Poland*
E-mail: mwender@am.poznan.pl

Introduction/Objectives: An important contribution of B cells and autoantibodies has been demonstrated in the pathogenesis of multiple sclerosis (MS) leading to interest in the use of such autoantibodies as diagnostic or prognostic markers. A common problem in studies of humoral immunity is that accurate detection of antibodies depends highly on the conformation of the antigens used for detection. Therefore widely used techniques, including ELISA and Western blotting, may fail to detect reactivity against epitopes displayed by native antigens expressed on myelin sheats. Here we describe a cell-based assay that specifically identifies serum antibodies directed against three major myelin autoantigens: MBP, PLP and MOG. The proposed method detects antibody binding to recombinant antigens in their native conformation on MBP, PLP and MOG transfected mammalian (hamster ovary) cells.
Material and methods: Thirty-six patients with relapsing-remitting MS diagnosed according to criteria of Mc Donald were recruted. Age 38.2 and duration of the disease 7.1. Serum anti-MBP, anti-PLP and anti-MOG IgG autoantibodies were detected in MS patients and 35 healthy donors by FACS analysis.
Results: Compared with healthy controls the titers of IgG autoantibodies directed against membrane-bound recombinant myelin antigens were most significantly increased for PLP ($P < 0.0001$), no quite significant for MBP ($P < 0.05$) and not significant for MOG ($P < 0.7$). The titers of anti-MBP antibodies were low indicating low concentration of these Ab in serum of MS patients and healthy donors, in contrast to high titers of anti-MOG antibodies in both groups suggesting a non-specific binding.
Conclusions: The cell-based assay detection of autoantibodies directed against recombinant myelin antigens could be a useful tool providing the serological markers in diagnosis and progression of MS. Indeed, it could allow to obtain molecular characteristics of disease in each patient in term of an antibody response against certain myelin and non-myelin antigens. We have shown that in RRMS patients elevated level of serum antibodies against PLP is significant, what should be considered in search for specific immunomodulatory therapy in MS.

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Cytogenetic analysis of MSRV POL, GAG, ENV sequences and genome instability in multiple sclerosis

M. Zawada[1], I. Liwen[1], D. Januszkiewicz-Lewandowska[1,2], K. Nowicka[1], B. Jaworska-Kubica[1], J. Rembowska[1], H. Hertmanowska[3], M. Wender[4] & J. Nowak[1]
[1]*Institute of Human Genetics Polish Academy of Sciences, Poznan, Poland,* [2]*University of Medical Sciences, Poznan, Poland,* [3]*Department of Neurology, State Hospital, Poznan, Poland,* [4]*Neuroimunological Unit, Mossakowski Medical Research Centre Polish Academy of Sciences, Poznan, Poland*
E-mail: mwender@am.poznan.pl

Introduction/Objectives: Among of the potential agents causing multiple sclerosis MSRV virus (multiple sclerosis-associated retrovirus) is often taken into consideration. Aims of the study were 1) an assessment of MSRV potential role in MS and 2) test of genome instability in MS patients.
Participants, Materials/Methods: The material was peripheral blood lymphocytes from 92 patients with MS, 12 patients with myasthenia and 20 healthy persons. The FISH studies with labeled PCR products of pol, gag and env MSRV genes in nuclei, chromosomes and chromatin fibers were done. Classical cytogenetic techniques were introduced into karyotypes and micronuclei analyses. MSRV pol, gag and env sequences were found in both MS patients and controls.
Results: The copy number of MSRV pol sequences was significantly greater in MS patients (6–24 copies on nucleus) than in myasthenia (4–5 copies) and normal individuals (3–6 copies). MSRV gag sequences was found in a range of 5–20, 4–5 and 2–4 copies in MS patients, patients with myasthenia and healthy donors, respectively. MSRV env was found in a range of 6–22, 4–5 and 2–4 copies in MS patients, patients with myasthenia and healthy donors, respectively. Moreover, the number of spontaneous micronuclei was significantly greater in MS patients compared to control. In patients with MS diversity of chromosome aberrations was observed.
Conclusions: In conclusion, evident difference in MSRV pol, gag and env copy number between MS patients and control suggests that MSRV may play some role in the etiology of multiple sclerosis (latent viral infection). The presence of chromosome aberrations and high amount of micronuclei in MS patients shows that the instability in MS genome often occurs.

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Review of multiple sclerosis at the neurology clinic in Sarajevo during 2006

Azra Alajbegović, E. Suljić, N. Loga & S. Alajbegović
Neurology Clinic, Clinical Center of Sarajevo University, Bolnička 25, 71000 Sarajevo, Bosnia and Herzegovina
E-mail: azra_alajbegovic@hotmail.com

Introduction/Objectives: Multiple sclerosis is one of the most common, most difficult and most important neurological diseases, because of its frequency, chronic features and tendency to affect young people. In Bosnia and Herzegovina there is no register of patients with MS. In the Sarajevo Canton there are 198 registered patients, who are treated in the Clinical Center of

https://doi.org/10.1111/j.1601-5215.2009.00387.x Published online by Cambridge University Press