No Difference in CSF Serum UA in MS Patients Versus Controls

Uric acid (UA) is an endogenous antioxidant [Guerrero AL et al. *Neurol Sci* 2011], a natural scavenger of peroxynitrite [Liu B et al. *Neurol Res* 2012]. Recent studies have found that multiple sclerosis (MS) patients have lower serum UA levels than controls [Liu B et al. *Neurol Res* 2012].

Guerrero et al. demonstrated an association between lower UA levels in MS patients and clinical relapse. They also found an inverse correlation between lower serum UA levels and disability assessed by Expanded Diability Status Scale score [Guerrero AL et al. *Neurol Sci* 2011]. F. Esfandiari, Neurology Research Institute, Kerma, Iran, presented a poster from a study evaluating levels of cerebrospinal fluid (CSF) and serum UA in MS patients compared with a control group.

A total of 50 patients (30 with MS and 20 with noninflammatory neurological disease [NIND]) participated in the study. Controls were matched for age and sex. Descriptive statistics were presented as mean percentage ± SD. The *t*-test was used to assess whether the means of the two groups were statistically different from each other. The authors performed all analyses using SPSS 17 (IBM, Armonk, New York, USA).

Results showed that the mean CSF UA in MS patients was 0.19 mg/dL (SD=0.12) versus 0.24 mg/dL (SD=0.189). Mean serum UA in MS patients was 3.95 mg/dL (SD=1.24) versus 4.04 mg/dL (SD=1.36) in the control group. In both groups, the relationship between CSF and UA was not significant (p=0.30). In addition, there was no significant difference between serum UA in the MS and the control group (p=0.83).

This study found no significant difference in CSF and serum UA between patients with MS and those in the control group. Future research is needed to determine the role of UA in the pathology and/or treatment of MS.

IVMP Improves Walking Speed After Relapse

Rehabilitation is important in maintaining and improving function in individuals with multiple sclerosis (MS), but there is no consensus on what may be the most effective approach to achieving the best possible functionality within a patient's limitations [Rasova K et al. *Health Qual Life Outcomes* 2010]. Moreover, there are few data on what constitutes a clinically significant change in a timed walk test after treatment for relapse [Coleman CI et al. *Curr Med Res Opin* 2012]. K. Gross-Paju, MD, PhD, West-Tallinn Central Hospital, Tallinn, Estonia, presented outcomes from a study to examine the recovery dynamics of walking ability in MS patients during a three-month period after relapse.

A total of 25 patients with relapsing-remitting MS were recruited. Four had two relapses during the study period. A total of 29 relapses were assessed; all were treated with 5 g of IV methylprednisolone (IVMP). Assessment measures included the Extended Disability Status Scale (EDSS), 6-Minute Walk Test (6MWT), and the Multiple Sclerosis Walking Scale (MSWS). Walking parameters were recorded during relapse after the first IVMP drip, the last IVMP drip, and at 1 and 3 months after relapse.

Post-relapse EDSS scores improved at 1 and 3 months (p=0.0118 and p=0.0023, respectively). After the first IVMP drip, there was significant improvement in the 6MWT compared with relapse (6.5%; p≤0.0001). Improvement increased up to 9% (p=0.0001) after the fifth IVMP drip, but remained unchanged at further follow-up. Outcomes on the MSWS followed a similar course: 20% improvement (p≤0.0001) compared with relapse after the fifth IVMP drip, with no change during follow-up.

Data confirmed a significant improvement in the 6MWT after the first IVMP drip, which was sustained at 3-month follow-up. After the fifth IVMP drip, there was a 20% improvement in the MSWS, which was sustained up to 3 months.

A Case of Family MS and Sarcoidosis

The increased risk of a different autoimmune disorder occurring in the families of individuals who develop multiple sclerosis (MS) is well-recognized [Barcellos LF et al. *Lancet Neurol* 2006]. Such findings imply that certain genetic variants may increase susceptibility to autoimmune disease in general as opposed to influencing the development of one specific condition [International Multiple Sclerosis Genetics Consortium. *Genes Immun* 2009]. A. Kuqo, University Neurology Service, Tirana, Albania, presented a case report of two sisters diagnosed with MS, one of whom developed sarcoidosis.

A 46-year-old female was diagnosed 12 years earlier with relapsing-remitting MS according to McDonald Criteria [Polman CH et al. *Ann Neurol* 2011]. Treatment with β-interferon for a consecutive period of nine years significantly reduced relapses. Neurological conditions were stable, and the patient had a score of 3 on the Kurtzke Expanded Disability Status Scale. The patient's sister, also diagnosed with MS, was being treated by the same team. Three years prior, the original patient complained of

arthralgia, conjunctivitis, and dry mouth. Immunological and biochemical laboratory studies were positive for sarcoidosis, a multisystem granulomatous disease that affects adults between 20 and 50 years old [Lopez V et al. *Int J Dermatol* 2011].

Although available epidemiological data confirm that genetic factors are unequivocally relevant in MS, large extended families with multiple affected individuals are extremely uncommon [Sawcer S. *Ann Indian Acad Neurol* 2009]. Most families contain no more than two or three affected individuals and no clear mode of inheritance can be inferred [Sawcer S. *Ann Indian Acad Neurol* 2009].

These data suggest that genetic susceptibility to autoimmune disease may be a mosaic of common sets of pleiotropic alleles as well as effects specific to one or a few diseases [IMSGC. *Genes Immun* 2009]. Further research is warranted to unravel the puzzle.

RIS with Dissemination on MRI

The wide use of magnetic resonance brain imaging has led to the unexpected detection of lesions that appear typical of multiple sclerosis (MS) in otherwise asymptomatic patients [Spain R, Bourdette D. *Curr Neurol Neurosci Rep* 2011], a condition called radiologically isolated syndrome (RIS) [Okuda DT et al. Neurology 2009].

The natural course of RIS is largely unknown [De Stefano N et al. *PloS One* 2011]. Although disease-modifying therapies work best when given early in MS, the decision to proactively treat patients with RIS is countered by the increasing risks associated with disease-modifying therapies as well as the uncertain prognostic outcome of RIS [Spain R, Bourdette D. *Curr Neurol Neurosci Rep* 2011]. D. Bartko, MD, Central Military Hospital, Ruzomberok, Slovak Republic, presented a poster that addressed this conundrum in a case report.

The patient was a 17-year-old female with uncertain vision problems. The ophthalmologist's diagnosis was uveitis. The neurologic examination was normal. The brain MRI showed abnormalities suggestive of MS (5 Gd-enhancing hyperintensities, periventricular involvement, and ovoid corpus callosum). Results were not consistent with a vascular pattern. Over 9 years, there were no clinical symptoms.

A new MRI showed 16 Gd-enhancing brain and cervical spinal cord hyperintensities, locations that are considered predictors for MS. Dissemination in space and time were noted. Cerebrospinal fluid had 3 cells/mm^3. No oligoclonal bands were observed. The IgG index was normal. VEP, BAEP, and SEP were repeatedly normal.

Despite the high lesion load, the patient remained asymptomatic, with normal neurological examinations. Despite recommendations to treat individuals with spinal cord lesions, the authors chose a strategy of watchful waiting, with regular examinations and repeated cognitive testing.

Prof. Bartko concluded that dissemination on MRI without clinical symptoms is not MS, and therefore, should not be treated.

Extracranial Venous Pathology May Play an Important Role in Developing MS

Chronic cerebrospinal venous insufficiency (CCSVI) is thought to be a pathologic phenomenon exclusively seen in multiple sclerosis (MS). As such, it has generated immense interest in the patient and scientific communities and has also ushered in a potential shift in the treatment paradigm of MS, involving endovascular balloon angioplasty or venous stent placement [Khan O et al. *Ann Neurol* 2010].

CCSVI is characterized by multiple stenoses of extracranial veins—the internal jugular (IJ) and azygous (AZ) veins. Miro Denišlič, MD, PhD, MC Medicor, d.d., Ljubljana, Slovenia, presented a poster on a clinical trial to highlight the occurrence and effects of obstructions in the extracranial venous system.

A total of 100 MS patients participated in the study. There was no control group. The threshold for angioplasty was a luminal diameter reduction of 50%. Catheter venography (CV) was performed under mild anesthesia.

Results showed that the degree of narrowing in the IJ and AZ veins was similar in the group of MS patients with an early and progressive course of the disease. The number of venous lesions was related to clinical disability. The left IJ vein was more often involved than the right one; narrowing of the AZ vein occurred less frequently (52%).

After angioplasty, patients reported improvements in headaches, vision problems, fatigue, and urinary dysfunction, and fewer spasms. Significant improvement in quality of life was demonstrated. In two patients (2%), CV examination did not reveal any vascular abnormality. No major side effects were reported.

Despite controversies surrounding CCSVI, extracranial venous pathology may play an important role in developing MS. Findings from a recent study on endovascular treatment indicated that the therapy appeared to be a safe and reliable method for treating CCSVI [Petrov I et al. *J Endovasc Ther* 2011].

Prof. Denišlič and his colleagues concluded that further investigation of timely angioplasty is warranted.