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B Cell-Related Chemokine (CXCL13) in CSF is Correlated with the Intrathecal Humoral Immune Response in Patients with Multiple Sclerosis

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Background: The CXCL13 chemokine plays an important role in B cell recruitment within the central nervous system (CNS) during inflammatory disorders.

Objective(s): Our aim was to evaluate CXCL13 level in cerebral spinal fluid (CSF) of patients with multiple sclerosis (MS) compared to other inflammatory disorders of the CNS and to study its correlation with other features of patients.

Method(s): In this study, 100 patients were included: 72 with definite diagnosis of MS according to McDonald criteria and 38 non-MS patients with other inflammatory conditions of the CNS. CSF Levels of CXCL13 were determined using ELISA kit. Couples of serum/CSF were analyzed for oligoclonal bands (OCB) using CSF isofocusing. Levels of IgG and albumin were determined for Total IgG Index calculation. For MRZ reaction testing, Measles, Rubella and Zoster viruses specific-IgG levels were measured in CSF and serum. Statistical analysis was performed using SPSS.20 software

Result(s): Our results showed that the mean level of CXCL13 in CSF were higher in MS patients (23 pg/ml) in comparison with control group (10.7pg/ml)(p=0.065). CSF levels of CXCL13 were correlated with total IgG Index and CSF levels of IgG in the 2 groups. There was also a correlation with CSF levels of anti-VZV specific IgG. Levels of the studied chemokine were higher in OCB-positive (19.7pg/ml) than in OCB-negative MS patients (16, 2pg/ml) (p=0.7).

Conclusion: In conclusion, CXCL13 seems to be an important mediator in the inflammatory cascade associated with the polyspecific intrathecal B cell response revealed by IgG Index, OCB and /or MRZ Reaction.