Effect of methylprednisolone treatment on expression of sPECAM-1 and CXCL10 chemokine in serum of MS patients

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Abstract:
In order to elucidate the mechanism of intravenous methylprednisolone (IVMP) therapy of relapses in multiple sclerosis (MS) patients, we have undertaken a study on the expression of the chemokines: soluble platelet endothelial cell adhesion molecule (sPECAM-1) and interferon-γ-inducible protein (CXCL10), before and after treatment. As more becomes known about the mechanism of methylprednisolone (MP) action, it may be possible to find a more specific treatment as well for the individual patients as the phase of the disease.

The mean level of sPECAM-1 in our material was almost identical in either the MS and control subjects. After a 5-day therapy with IVMP, no changes were found in comparison with the starting value. The serum concentration of CXCL10 in MS patients was found to be higher compared to that in sera from control subjects. After therapy with IVMP the mean level of CXCL10 was diminished to the initial value and occasionally was even lower than in the control group.

The findings established in our present study indicate that IVMP diminished significantly the elevated expression of CXCL10, which seems to be an important factor in the mechanism of this drug action on MS relapses. It is important to stress that the reaction is not a general one because there was no effect on the expression of sPECAM-1.

Key words:
methylprednisolone, sPECAM-1, CXCL10, multiple sclerosis