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Osteopontin and Oncostatin M increase significantly in Iranian relapsing-remitting multiple sclerosis patients

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Background/objectives: Osteopontin is a multitasking secreted protein with a bold role in autoimmune processes. It is a pro-inflammatory cytokine implicating in cell–matrix and cell–cell interactions, inflammation, recruitment, sur- vival. Thus, it is crucial for T helper-1 immunity. A therapeutic-based study demonstrated that Natalizumab binding to a4-subunit of a4-B1 integrin reduces cell adhesion of invasive immune cells to the endothelium of the central nervous system. The a4-B1 is an osteopontin binding partner. Consequently, it seems that a reduction of osteopontin can ameliorate multiple sclerosis relapses. Oncostatin m is an interleukin-6 family member secreted by variety of immune and none immune cells suggesting roles for oncostatin m in physiological and pathological conditions such as regulation of prostaglandin expression in astrocytes, involvement in dendritic cell's activities, neutrophil recruitment, immunosuppression, inhibition of proliferation of neural precursor cells, and enhancement of oligodendrocytes pro- genitor cell activity in demyelinated sites. In this study, we assessed these markers in Iranian relapsing-remitting multiple sclerosis patient's plasma level according to the healthy controls.

Design and methods: One hundred and twenty relapsing- remitting multiple sclerosis patients and 60 healthy subjects with no neurodegenerative disease background were included. Blood samples were gathered and enzyme-linked immonosurbent assay was done using “Booster” and “East- biopharm” ELISA kits and micro-plate reader. Statistical analysis was performed by SPSS 16.

Results: There was a significant difference between the cases and the controls for both osteopontin and oncostatin m protein expression (P-valueo0.05).

Conclusions: Osteopontin and Oncostatin M are two inflammatory markers in multiple sclerosis with some anti- inflammatory features as well. As the primary study, we evaluated the protein level in plasma and compared to the healthy donors which was quite successful. For future studies, we suggest gene expression methods and also investigations on their variations in Iranian patients in- order to gain more knowledge and finally suggest diagnosing and therapeutic paths for such mediators