

3rd International Conference and Exhibition on Clinical & Cellular Immunology

September 29-October 01, 2014 DoubleTree by Hilton Baltimore-BWI Airport, USA

Serum of patients with Behçet's disease induces activation of human lymphocytes and monocytes *in vitro*

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Background: Although several immunological abnormalities have been demonstrated in Behçet's disease (BD), the exact mechanism of the inflammatory changes occurring is still unknown. Monocytes and lymphocytes are now recognized as key effector cells in BD.

Objective: To assess effects of Behçet disease serum on blood peripheral mononuclear cells from healthy donors and to evaluate if complement activation and complex immune were involved.

Methods: Monocytes and lymphocytes from a healthy donor were incubated with 33 sera from BD patients in both active and inactive disease. After incubation cells were analyzed by flow cytometry. The apoptosis-inducing effect (AIE) of these sera was monitored with flow cytometry using annexin V and propidium iodide (PI) binding and proliferation cells was assessed by CFSE labeling.

Results: Proliferation in monocytes and lymphocytes was significantly higher in sera of patient's compared to the cells stimulated by serum of healthy donor and staurosporine ($P < 0.01$), the CD25/CD69 and CD64 expression was statistically significant compared to the positive and negative stimulation, this activation correlate with disease activity. Levels of all cytokines [interferon- γ (IFN- γ), tumour necrosis factor- α (TNF- α), interleukin (IL)-6, interleukin (IL)-10 and IL-4] were highest in Behçet patients. Level of complement, circulating immune complexes and AECA were higher in serum of patients of Behçet disease. Heat inactivation and complexes immunes' depletion of sera affect significantly CD69 and CD64 expression.

Conclusion: Taken together, our results indicate that serum of patients with BD induces activation of lymphocyte and monocytes *in vitro*. Thus, BD serum factor(s) have a strong and apparently disease-specific activation inducing capacity, which could contribute to the physiopathology of the disease.

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