The role of dopamine in modulation of Th-17 immune response in multiple sclerosis

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The role of dopamine in modulation of Th-17 immune response in multiple sclerosis.

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Abstract

Neuromediators may modulate neuroinflammation, particularly in multiple sclerosis (MS). We investigated the effects of dopamine (DA) on the pro-inflammatory Th17-branch of immunity in 43 patients with relapsing-remitting MS and 20 healthy subjects. Serum DA was lower in MS relapse, whereas percentages of blood $CD4^+CD26^+CD161^+CD196^+$ Th17-cells and production of interleukin-17 (IL-17) and interferon-gamma by anti-CD3/anti-CD28-stimulated peripheral blood mononuclear cells (PBMC) were higher in MS relapse than in remission or healthy subjects. DA suppressed IL-17 production by PBMC from MS patients and healthy subjects. The suppressive effect of DA was abolished in the presence of an antagonist of D2-like receptors (sulpiride). These data suggest an anti-inflammatory role for DA in MS.

Key words: multiple sclerosis; Th17-cells; dopamine; neuroimmunomodulation.

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