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Autor(en) des Beitrags: Kowarik, MC; Pellkofer, HL; Cepok, S; Korn, T; Kümpfel, T; Buck, D; Hohlfeld, R; Berthele, A; Hemmer, B

Titel des Beitrags: Differential effects of fingolimod (FTY720) on immune cells in the CSF and blood of patients with MS.

Abstract: The oral immunomodulator fingolimod (FTY720) has recently been shown to be highly effective in relapsing-remitting multiple sclerosis (MS). Fingolimod is a functional antagonist of the sphingosine-1-phosphate receptor 1 and thereby inhibits sphingosine-1-phosphate-dependent lymphocyte egress from secondary lymphoid tissues, resulting in a pronounced lymphopenia in the peripheral blood. The effects of fingolimod treatment on the CSF of patients with MS have not been studied so far. We analyzed the leukocyte count, albumin quotient, immunoglobulin G (IgG) index, and oligoclonal bands in the CSF of fingolimod-treated patients with MS. Moreover, we performed immunophenotyping of CSF and peripheral blood leukocytes by flow cytometry. The results were compared to those from treatment-naive or natalizumab-treated patients with MS and patients with other inflammatory and noninflammatory neurologic diseases. Fingolimod therapy significantly decreased CSF leukocyte counts, but had little impact on the extent of intrathecal IgG synthesis and presence of oligoclonal bands in the CSF. Fingolimod decreased the proportion of CSF CD4+ T cells but to a lesser extent than in the peripheral blood. While fingolimod strongly reduced B cells in the periphery, it had little impact on B cells in the CSF. The percentage of CSF CD8+ T cells, NK
cells, and monocytes increased compared to treatment-naive patients. The CD4+/CD8+ T-cell ratio in CSF reversed in most of the patients. Fingolimod treatment has a profound impact on CSF, which to some extent differs from the peripheral effects of the drug.