Journal of Neuroimmunology

Volume 180, Issues 1â€“2, November 2006, Pages 63-70

Clinical Neuroimmunology

Rituximab reduces B cells and T cells in cerebrospinal fluid of multiple sclerosis patients

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https://doi.org/10.1016/j.jneuroim.2006.06.029

Abstract

Effects of B cell depletion by rituximab, a monoclonal antibody to CD20, were studied in patients with relapsing MS that had not responded optimally to standard immunomodulatory therapies. Flow cytometry demonstrated reduced cerebrospinal fluid (CSF) B cells and T cells in most patients at 6Â months post-treatment. ELISAs demonstrated modest reductions in serum antibodies to myelin oligodendrocyte glycoprotein and myelin basic protein in some subjects. Beta-interferon neutralizing antibodies were reduced in three subjects, but developed anew after treatment in three others, suggesting caution in considering rituximab as a means to eliminate NABs. In summary, rituximab depleted B cells from CSF at 24Â weeks after initial treatment, and this B cell depletion was associated with a reduction in CSF T cells as well.

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Keywords

Multiple sclerosis; Treatment; B lymphocytes; Rituximab; Autoantibodies; Myelin oligodendrocyte glycoprotein antibodies; Myelin basic protein antibodies

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