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IN BRIEF

MULTIPLE SCLEROSIS

Risk factors for progressive multifocal leukoencephalopathy identified in natalizumab-treated patients

Progressive multifocal leukoencephalopathy (PML) is a recognized complication of natalizumab treatment in patients with multiple sclerosis (MS). PML is caused by activation of the JC virus, and a new study has shown that the presence of anti-JC virus antibodies in the serum or plasma is associated with an elevated risk of PML in natalizumab-treated MS patients. Prior use of immunosuppressants and extended duration of natalizumab treatment were identified as additional risk factors for PML in this study.

Original article Bloomgren, G. *et al.* Risk of natalizumab-associated progressive multifocal leukoencephalopathy. *N. Engl. J. Med.* **366**, 1870–1880 (2012)

STROKE

25-hydroxyvitamin D levels correlate with severity and outcomes of stroke

Low serum 25-hydroxyvitamin D levels are associated with increased stroke severity and inferior functional outcomes after stroke, according to research published in the *European Journal of Neurology*. In a cohort of 382 patients with stroke, levels of this vitamin in the lowest tertile were found to be predictive of an NIH Stroke Scale Score of ≥ 6 at the time of admission to hospital, and of an elevated risk of moderate-to-severe disability at discharge.

Original article Daubail, B. *et al.* Serum 25-hydroxyvitamin D predicts severity and prognosis in stroke patients. *Eur. J. Neurol.* doi:10.1111/j.1468-1331.2012.03758.x

NEUROIMMUNOLOGY

Clostridium-reactive T cells are implicated in the pathogenesis of neuromyelitis optica

T cells that cross-react with the water channel aquaporin-4 (AQP4) and the intestinal bacterium *Clostridium perfringens* participate in the autoimmune response underlying the demyelinating disease neuromyelitis optica (NMO), a new study by Scott Zamvil and colleagues suggests. Patients with NMO have circulating anti-AQP4 autoantibodies of the IgG1 subclass, which requires T-cell help. Zamvil's team showed that the peripheral blood of such patients also contains T helper cells that proliferate in response to peptides from both AQP4 and the *C. perfringens* ABC transporter.

Original article Varrin-Doyer, M. *et al.* Aquaporin-4-specific T cells in neuromyelitis optica exhibit a Th17 bias and recognize *Clostridium* ABC transporter. *Ann. Neurol.* doi:10.1002/ana.23651

MULTIPLE SCLEROSIS

Teriflunomide shows efficacy as an add-on therapy to IFN- β in patients with multiple sclerosis

The results of a new phase II trial indicate that the oral immunomodulatory drug teriflunomide could be safe and effective as an add-on therapy to IFN- β . Patients who received teriflunomide in addition to IFN- β showed a reduced burden of gadolinium-enhancing T1 brain lesions compared with patients who received IFN- β plus placebo. Teriflunomide was also found to be safe and well-tolerated in this setting.

Original article Freedman, M. S. *et al.* Teriflunomide added to interferon- β in relapsing multiple sclerosis: a randomized phase II trial. *Neurology* **78**, 1877–1885 (2012)