

IN BRIEF

➤ CNS INFECTIONS**Hidden consequences of Zika virus infection in pregnancy**

Zika virus (ZIKV) infection during pregnancy can cause fetal brain injury without microcephaly, and this injury can be difficult to detect, new research shows. Researchers inoculated five pregnant pigtail macaques with ZIKV and studied the effects on their fetuses. Weekly ultrasound imaging revealed no obvious abnormality in four of the five fetuses, and none met the criteria for microcephaly. Nevertheless, MRI revealed T2-hyperintense foci in four of the five fetuses and abnormally low ratios of noncortical tissue to total brain volume after 100 days of gestation. Pathological analysis showed that ZIKV reduced late fetal neurogenesis, raising the possibility that impairment of neurogenesis could cause cognitive impairments into adulthood in individuals who were exposed to ZIKV during gestation but did not develop microcephaly. Long-term monitoring of such individuals is therefore recommended.

ORIGINAL ARTICLE Waldorf, K. M. et al. Congenital Zika virus infection as a silent pathology with loss of neurogenic output in the fetal brain. *Nat. Med.* <https://doi.org/10.1038/nm.4485> (2018)

➤ MULTIPLE SCLEROSIS**CSF markers predict progression from radiologically isolated syndrome**

Neurofilament light chain and oligoclonal bands in the cerebrospinal fluid (CSF) of patients with radiologically isolated syndrome (RIS) are independent predictors of progression to clinically isolated syndrome (CIS) and multiple sclerosis (MS), a new study has shown. CSF samples from 75 patients with RIS were analysed for chitinase-3-like protein 1, neurofilament light chain and oligoclonal bands. High levels of neurofilament light chain (>619 ng/l) and the presence of oligoclonal bands in the CSF were each associated with shorter times to CIS and MS. The association with neurofilament light chain was more pronounced in patients with RIS aged ≥ 37 years. The findings highlight the importance of CSF analysis for determining the prognosis in patients with RIS.

ORIGINAL ARTICLE Matute-Blanch, C. et al. Neurofilament light chain and oligoclonal bands are prognostic biomarkers in radiologically isolated syndrome. *Brain* <https://doi.org/10.1093/brain/awy021> (2018)

➤ PERIPHERAL NEUROPATHIES**Nerve damage differs between diabetes types**

Distal symmetric diabetic neuropathy (DPN) occurs in both type 1 and type 2 diabetes mellitus (T1DM and T2DM, respectively), but a recent study has shown that the predominant type of nerve lesion differs between the two conditions. T2-weighted magnetic resonance neurography of the sciatic nerve in 120 patients with DPN and 36 controls without DPN revealed a greater volume of hypointense lesions in patients with T2DM than in patients with T1DM. Conversely, the volume of hyperintense lesions was greater in patients with T1DM than in those with T2DM. Correlations between the lesion types, blood levels of glycated haemoglobin and lipids suggest that lesions in T1DM result from poor glycaemic control, whereas lesions in T2DM are associated with changes in lipid metabolism. The findings suggest that different approaches are needed for the prevention and treatment of DPN in the two types of diabetes.

ORIGINAL ARTICLE Jende, J. M. et al. Diabetic neuropathy differs between type 1 and type 2 diabetes. Insights from magnetic resonance neurography. *Ann. Neurol.* <https://doi.org/10.1002/ana.25182> (2018)