Nature Reviews Neurology | Published online 15 Sep 2017

IN BRIEF

MULTIPLE SCLEROSIS

Intrathecal inflammation mediates mood in relapsing–remitting multiple sclerosis

A new study has revealed that subclinical intrathecal inflammation influences anxiety and depression in relapsing–remitting multiple sclerosis (RRMS), and has prognostic relevance in patients with this condition. An increased incidence of depression and anxiety has been described in RRMS; however, the origin of these mood alterations was unclear. In new research published in *Neurology*, investigators carried out psychiatric evaluations and measured intrathecal inflammation with MRI in 405 patients with RRMS. In a subset of 111 patients, the team also examined the levels of proinflammatory cytokines in the cerebrospinal fluid. Significant reductions in anxiety and depression were associated with reduced levels of intrathecal inflammation and proinflammatory cytokines. This finding suggests that fluctuations in mood could reflect subclinical neuroinflammation before relapse occurs.

ORIGINAL ARTICLE Rossi, S. *et al.* Neuroinflammation drives anxiety and depression in relapsing–remitting multiple sclerosis. *Neurology* http://dx.doi.org/10.1212/WNL.0000000000004411 (2017)

PARKINSON DISEASE

CSMD1 gene mutations can lead to familial Parkinson disease

Mutation of the *CSMD1* gene, which encodes a protein that participates in complement activation and inflammation in the CNS, leads to familial Parkinson disease (PD) in the absence of other gene mutations, new research published in *Neurology: Genetics* suggests. Whole-exome sequencing was performed in two unrelated Spanish families with PD, in which the presence of other gene mutations known to cause PD had been ruled out. From this sequencing study, the investigators identified two possible PD-causing mutations in the *CSMD1* gene, which were both located in complement control domains within the translated CSMD1 protein. As mutations in *CSMD1* have already been implicated in schizophrenia and Alzheimer disease, the researchers suggest that the complement pathway could offer an important therapeutic target in PD and other neurodegenerative conditions.

ORIGINAL ARTICLE Ruiz-Martinez, J. *et al.* Whole-exome sequencing associates novel CSMD1 gene mutations with familial Parkinson disease. *Neurol. Genet.* **3**, e177 (2017)

NEURAL REPAIR AND REHABILITATION

Prolonged neural stem cell maturation restores motor function in spinal cord-lesioned rats

The success of human neural stem cell (NSC) implantation in spinal cord injury is time-dependent, according to a new study published in *The Journal of Clinical Investigation*. Researchers at the University of California examined markers of neuronal maturity and motor recovery in immunodeficient rats after NSC implantation. Human NSCs grafted into spinal cord injuries of adult rats differentiated, matured and integrated into the rodents' spinal cords after 12 months — a time frame typically associated with normal development of these cells in humans — and coincided with recovery of forelimb function. The results indicate that NSC implantation could offer therapeutic benefits following CNS injury, but the process might take some time. These finding could be of considerable importance for the design of future human trials.

ORIGINAL ARTICLE Lu, P. *et al.* Prolonged human neural stem cell maturation supports recovery in injured rodent CNS. *J. Clin. Invest.* https://dx.doi.org/10.1172/JCI92955 (2017)