

Nature Reviews Neurology 9, 184 (2013); published online 26 March 2013;
 doi:10.1038/nrneurol.2013.50;
 doi:10.1038/nrneurol.2013.51;
 doi:10.1038/nrneurol.2013.52;
 doi:10.1038/nrneurol.2013.53

IN BRIEF

STROKE

Questions raised over safety of prophylactic paracetamol use in acute phase of ischaemic stroke

Prophylactic use of paracetamol should be discouraged in patients in the acute phase of ischaemic stroke who do not experience stroke-associated pain or fever, according to a new retrospective study. The findings—based on data from 6,015 patients with ischaemic stroke, 2,435 of whom had received paracetamol—show that paracetamol treatment within 3 days of stroke was associated with poor functional outcome at 90 days in patients without fever or pain. However, paracetamol use had no effect on stroke outcome in individuals who did experience pain and/or fever.

Original article Frank, B. *et al.* Use of paracetamol in ischaemic stroke patients: evidence from VISTA. *Acta Neurol. Scand.* doi:10.1111/ane.12094

ALZHEIMER DISEASE

Whole-brain imaging of the glymphatic system—a new strategy to investigate amyloid clearance in AD

The glymphatic pathway has recently been identified as a route through which waste and solutes—including amyloid- β , thought to be a key pathological substrate of Alzheimer disease (AD)—are cleared from the brain. Iliff *et al.* hypothesized that failure of this pathway contributes to AD pathology, and so developed a novel MRI technique that enables measurement of glymphatic pathway function in the live brain. Following their study in rats, Iliff and colleagues suggest that the technique will provide a novel approach to assess AD susceptibility and progression in the human brain.

Original article Iliff, J. J. *et al.* Brain-wide pathway for waste clearance captured by contrast-enhanced MRI. *J. Clin. Invest.* 123, 1299–1309 (2013)

NEURO-ONCOLOGY

Study reveals extent of intratumour heterogeneity in patients with glioblastoma

In glioblastoma, tumour heterogeneity is thought to underlie the poor efficacy of treatments. Now, using a novel surgical multisampling scheme, Sottoriva *et al.* have revealed the true extent of intratumoural heterogeneity. Numerous subtypes of glioblastoma were uncovered in each of the 11 individuals studied, and various regions of the tumour were at different stages of progression. The findings suggest that novel treatment strategies for glioblastoma are needed.

Original article Sottoriva, A. *et al.* Intratumor heterogeneity in human glioblastoma reflects cancer evolutionary dynamics. *Proc. Natl Acad. Sci. USA* 110, 4009–4014 (2013)

MULTIPLE SCLEROSIS

Fatigue—a warning sign for multiple sclerosis?

Fatigue is a common symptom of multiple sclerosis (MS), but researchers now suggest that fatigue is a diagnostic sign of this disease in some individuals. In a study of 5,305 patients with newly diagnosed MS and with 3 years of prediagnosis health-care coverage, 1,534 (28.9%) had a fatigue-related disorder in the 2 years preceding diagnosis of MS. The researchers suggest careful history-taking and physical examination in patients who present with fatigue could identify transient neurological conditions that may herald MS.

Original article Berger, J. R. *et al.* Fatigue heralding multiple sclerosis. *Mult. Scler. J.* doi:10.1177/1352458513477924