In Focus

Spotlight on the July 16 Issue

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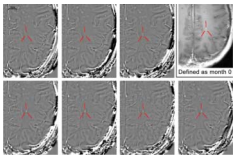
Evaluation of an albumin-binding gadolinium contrast agent in multiple sclerosis

Gadofosveset trisodium is a contrast agent that reversibly binds to albumin. This agent increased the number of enhancing MS lesions detected compared to gadolinium, possibly allowing an earlier diagnosis based on McDonald 2010 criteria, even though the injected dose of gadolinium was two-thirds lower.

See p. 206; Editorial, p. 202; see also p. 211

Magnetic resonance frequency shifts during acute MS lesion formation



The authors studied new MS lesions using magnetic resonance frequency maps acquired monthly over 6 months in 20 people with relapsing-remitting MS. The frequency changes due to lesion formation agree with theoretical models of myelin damage, suggesting that this technique will be useful in clinical trials of therapies on repair and neuroprotection.

See p. 211; Editorial, p. 202; see also p. 206

Genetic risk variants in African Americans with multiple sclerosis

Single nucleotide polymorphism (SNP) genotyping was conducted for 76 multiple sclerosis (MS)-associated SNPs and 52 ancestry informative marker SNPs selected throughout the genome. MS genetic risk in 3,254 African Americans (1,162 cases and 2,092 controls) only partially overlapped with Europeans, explaining the difference of MS prevalence between populations.

See p. 219

Dementia and lower blood pressure in Latin America, India, and China: A 10/66 cross-cohort study

The authors measured systolic and diastolic blood pressure (BP) to adjudicate dementia diagnosis and quantify dementia severity in adults over 65 years of age. The association between dementia and lower BP was heterogeneous across geographically diverse samples, strongest where prevalent hypertension was highest (in Cuba), and relatively small compared with that found in Western settings.

See p. 228

Brain injury and development in newborns with critical congenital heart disease

The authors found that brain injuries in 120 preoperative and 104 postoperative newborns with congenital heart disease were strongly related to abnormalities of brain development suggested by diffusion and spectroscopic MRI. These findings point to the need for strategies to promote optimal brain development before and after birth.

See p. 241

From editorialists Algra & de Vries: "…in order to reduce brain injury preoperatively and postoperatively in these infants with complex CHD, there is a need for optimal in utero brain development."

See p. 204

Using iron oxide nanoparticles to diagnose CNS inflammatory diseases and PCNSL

Iron oxide nanoparticle MRI contrast agents, like ferumoxytol, may help discriminate CNS lymphoma and other tumors from CNS inflammation. Ferumoxytol-contrasted MRI in 20 patients was safe, even with renal insufficiency, and clarifies current FDA drug insert concerns. Combining post-ferumoxytol perfusion MRI and a delayed anatomic scan may further aid diagnoses.

See p. 256

SPECIAL ARTICLE

Mitochondrial encephalomyopathies—Fifty years on: The Robert Wartenberg Lecture

The author proposes a rational genetic classification of the mitochondrial diseases, subdividing the 2 major groups—defects of mitochondrial DNA and defects of nuclear DNA—into subgroups defined by major functional or biochemical defects.

See p. 281

NB: "Expanding the clinical phenotype of DYT5 mutations: Is multiple system atrophy a possible one?" p. 301. To check out other Clinical/Scientific Notes, point your browser to www.neurology.org.

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