Research

Sickle Cell Trait and Ischemic Stroke in African Americans 802

Sickle cell trait (SCT) has been thought to be associated with risk of ischemic stroke in African American individuals, but definitive data are unclear. In a meta-analysis using 4 large, prospective population-based studies, Hyacinth and coauthors found that SCT was not an independent risk factor for incident ischemic stroke among 19,464 African American individuals (1520 [7.8%] with SCT; 620 [3.2%] with ischemic stroke). Thorough clinical evaluation of stroke patients with SCT should be performed, and further work is required to understand genetic and other risk factors that account for a higher prevalence of stroke among African American individuals.

Pain Neuroscience Education With Motor Control Training 808

Chronic spinal pain, associated with high rates of disability and health care use, is common; however, nonsurgical treatments show limited benefits and effectiveness. In a multicenter randomized clinical trial, 120 patients (half in experimental group and half in control group) with nonspecific spinal pain were evaluated at 3, 6, and 12 months. Malfliet and coauthors found that pain neuroscience education combined with cognition-targeted motor control training is superior to usual care to reduce pain, improve function, and reduce disability in people with chronic spinal pain. Gray matter morphology did not change in response to treatment.

Hypercapnia and Clinical Outcomes in Cerebral Injury 818

Most studies investigating effects of hypercapnia and hypercapnic acidosis in acute cerebral injury have evaluated the effects of partial pressure of arterial carbon dioxide and pH in isolation instead of in conjunction. In a multicenter retrospective review of 30,742 patients, Tiruvoipati and coauthors classified patients admitted with cerebral injury (ie, traumatic brain injury, cardiac arrest, and stroke) from 167 intensive care units in Australia and New Zealand as either normocapnia and normal pH (n = 13,052), compensated hypercapnia (n = 1338), and hypercapnic acidosis (n = 16,352) during the first 24 hours of intensive care unit stay. In patients with hypercapnic acidosis, mortality increased with increasing partial pressure of carbon dioxide. When compensated to normal pH in the first 24 hours, hypercapnia may not be harmful in mechanically ventilated patients with cerebral injury, setting the stage for additional trials to optimize management of patients in the neurological intensive care unit. Editorial perspective is provided by Hemphill.

Gene Therapy and Alzheimer Disease 834

Currently, there are no successful treatments to stop, slow, or reverse the progression of Alzheimer disease (AD). In a multicenter phase 2 randomized clinical trial, Rafii and coauthors studied gene delivery of nerve growth factor (NGF), a neurotrophic factor that prevents the death of cholinergic neurons of the basal forebrain. The treatment was used in 49 participants with AD to assess the impact of treatment on cognitive decline; a total of 26 patients received adeno-associated viral vector (serotype 2) (AAV2-NGF) treatment and 23 received sham surgery. The study demonstrated the feasibility of sham-surgery-controlled stereotactic gene delivery studies in patients with AD. AAV2-NGF delivery was well tolerated but did not affect clinical outcomes or selected AD biomarkers. Editorial perspective is provided by Honig.

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Author Interview

AUDI Interview with Hyacinth Idu Hyacinth, MD, PhD, MPH, author of “Association of Sickle Cell Trait With Ischemic Stroke Among African Americans: A Meta-analysis”

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