

THIS WEEK in the JOURNAL

ORIGINAL ARTICLE

Magnesium Sulfate for the Prevention of Cerebral Palsy

In this multicenter, placebo-controlled, randomized trial of intravenous magnesium sulfate in women at imminent risk for delivery between 24 and 31 weeks of gestation, magnesium sulfate did not significantly reduce the primary composite outcome of moderate or severe cerebral palsy or death. However, it did result in a reduced rate of cerebral palsy among survivors (a prespecified secondary outcome), which may suggest the possibility of benefit.

SEE P. 895; EDITORIAL, P. 962

ORIGINAL ARTICLE

Bortezomib plus Melphalan and Prednisone for Initial Treatment of Multiple Myeloma

Patients with newly diagnosed multiple myeloma who were ineligible for treatment with high-dose chemotherapy plus hematopoietic stem-cell transplantation were randomly assigned to receive either melphalan and prednisone alone or melphalan and prednisone plus bortezomib. The time to disease progression (the primary outcome) was longer in the bortezomib group. The combination of bortezomib, melphalan, and prednisone appears to be effective as initial treatment in patients with multiple myeloma who cannot withstand high-dose therapy.

SEE P. 906; EDITORIAL, P. 964; CME, P. 987

ORIGINAL ARTICLE

Brain-Derived Neurotrophic Factor and Obesity in WAGR Syndrome

This study examined genotype and body-mass index in patients with the Wilms' tumor, aniridia, genitourinary anomalies, and mental retardation (WAGR) syndrome. The related genes *WT1* and *PAX6* are on chromosome 11p13, centromeric to brain-derived neurotrophic factor (*BDNF*), an important gene in energy homeostasis. *BDNF* haploinsufficiency was linked to childhood-onset obesity and reduced levels of serum *BDNF*, suggesting a role of *BDNF* in energy homeostasis.

SEE P. 918; PERSPECTIVE, P. 891

CURRENT CONCEPTS

Acute Bleeding from a Peptic Ulcer

The mortality associated with acute bleeding from a peptic ulcer remains high (5 to 10%), and the condition accounts for more than 400,000 hospital admissions per year in the United States. This review summarizes the approach to patient triage and risk stratification, the goals of early endoscopy, the options for medical therapy, and the role of surgery and interventional radiology.

SEE P. 928; CME, P. 985

MECHANISMS OF DISEASE

Mechanisms of Thrombus Formation

This review is an account of recent advances in our understanding of the mechanisms of thrombus formation, with emphasis on two independent pathways: one involving primarily platelets, and the other initiated by tissue factor. The review includes information from new studies of microparticles in the circulation that display tissue derived from injured cells, cancer cells, and inflammatory cells. It ends with a discussion of the clinical implications for prevention and management of thrombosis. A video showing thrombus formation in vivo is available at www.nejm.org.

SEE P. 938

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

A Man with Abdominal Pain, Nausea, and an Elevated Level of Serum Creatinine

A 64-year-old man was admitted to the hospital because of abdominal pain, nausea, and an elevated serum creatinine level. He had a history of recurrent epigastric pain, which had been attributed to pancreatitis and gastroesophageal reflux disease. One week before admission, epigastric pain recurred, with nausea and vomiting; 3 days before admission, he stopped all oral intake, but symptoms worsened. On admission, the serum creatinine level was 3.5 mg per deciliter, and the urea nitrogen level was 28 mg per deciliter. Intravenous fluids were administered, without improvement. A diagnostic procedure was performed.

SEE P. 951; CME, P. 986

CLINICAL IMPLICATIONS OF BASIC RESEARCH

Intraocular Neovascularization and Edema

Topical application of inhibitors of growth factor receptors or their signaling pathways protects against choroidal neovascularization, vascular leakage, and retinal edema in mice.

SEE P. 967