

# THIS WEEK in the JOURNAL

## ORIGINAL ARTICLE

### Machine Perfusion or Cold Storage in Deceased-Donor Kidney Transplantation

In this international randomized, controlled trial, one kidney from each pair from 336 consecutive deceased donors was randomly assigned to machine perfusion and the other to cold storage. All recipients were followed for 1 year. Hypothermic machine perfusion was associated with a reduced risk of the primary end point — delayed graft function — and improved graft survival in the first year after transplantation.

SEE P. 7; EDITORIAL, P. 78

## ORIGINAL ARTICLE

### Decontamination of the Digestive Tract and Oropharynx in ICU Patients

Infection is a major cause of death in the intensive care unit (ICU). Strategies to reduce rates of infection in ICUs include selective digestive tract decontamination (SDD), in which cefotaxime and topical antimicrobial agents are administered for 4 days, and selective oropharyngeal decontamination (SOD), in which only topical antimicrobial agents are administered. In this cluster-randomization study involving 13 ICUs in the Netherlands, SOD and SDD did not affect crude mortality but did appear to reduce mortality slightly at day 28, with adjustment for covariates.

SEE P. 20; CME, P. 99

## ORIGINAL ARTICLE

### A Syndrome with Congenital Neutropenia and Mutations in *G6PC3*

Five children from two consanguineous families were born with severe congenital neutropenia, prominent venous angiectasia, and congenital heart defects, urogenital abnormalities, or both. All five children had the same mutation in the gene for glucose-6-phosphatase, catalytic subunit 3 (*G6PC3*). Their neutrophils had increased susceptibility to apoptosis, and the mutation abolished the enzymatic activity of glucose-6-phosphatase.

SEE P. 32; PERSPECTIVE, P. 3

## ORIGINAL ARTICLE

### Modulation of Blood Pressure by Central Melanocortineric Pathways

This study shows that the prevalence of hypertension in subjects carrying a loss-of-function mutation in

*MC4R* is less than that in overweight or obese control subjects. Metabolic measurements and results of a clinical trial testing an *MC4R* agonist suggest that melanocortineric signaling influences blood pressure through an insulin-independent mechanism.

SEE P. 44

## ORIGINAL ARTICLE

### Giant Osteoclasts and Alendronate

This study examined bone-biopsy specimens obtained after a 3-year, double-blind, randomized, placebo-controlled, dose-ranging trial of oral alendronate to prevent bone resorption in healthy postmenopausal women. Long-term alendronate treatment was associated with an increase in the number of osteoclasts, which include distinctive giant, hypernucleated, detached osteoclasts that undergo protracted apoptosis. The finding of such cells, despite decreased resorption after long-term therapy with oral nitrogen-containing bisphosphonate, may have clinical implications.

SEE P. 53; EDITORIAL, P. 80

## CLINICAL THERAPEUTICS

### Radiation Therapy after Breast-Conserving Surgery

A 45-year-old woman is found to have invasive breast cancer and undergoes lumpectomy with dissection of the sentinel lymph nodes. After 6 months of adjuvant chemotherapy, radiation therapy is recommended. Radiation therapy has been shown to reduce the risk of local recurrence after breast-conserving surgery. The most serious complications include lung and heart injury and secondary cancers.

SEE P. 63; CME, P. 97

## CLINICAL PROBLEM-SOLVING

### Keeping an Open Mind

A 67-year-old man presented with a 3-month history of fatigue and fever. He had undergone heart transplantation 6 years earlier for idiopathic cardiomyopathy. He reported no weight loss, night sweats, or chills. He also reported no headache, rash, joint swelling, dysuria, or abdominal or respiratory problems.

SEE P. 72; CME, P. 98

## CLINICAL IMPLICATIONS OF BASIC RESEARCH

### Bacterial Virulence and the Living System

Blocking a bacterial sensor that is activated in vivo suppresses the bacterial virulence of *Salmonella typhimurium* and *Francisella tularensis* in mice.

SEE P. 83