



ON THE COVER:

The American College of Surgeons and the American Geriatrics Society have suggested that preoperative cognitive screening should be performed in older surgical patients. In this issue of *ANESTHESIOLOGY*, Culley *et al.* cognitively screened 211 patients aged 65 yr old or older without a diagnosis of dementia who were scheduled for an elective hip or knee replacement. Many older elective orthopedic surgical patients were found to have probable cognitive impairment preoperatively. This impairment was associated with development of delirium postoperatively, a longer hospital stay, and lower likelihood of going home upon hospital discharge.

- Culley *et al.*: Poor Performance on a Preoperative Cognitive Screening Test Predicts Postoperative Complications in Older Orthopedic Surgical Patients, p. 765

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The earliest identified English definition of <i>anaesthesia</i> is in a medical dictionary published in 1684.	

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■ PERIOPERATIVE MEDICINE

CLINICAL SCIENCE

◆ ◆  **Implementing a Health System–wide Patient Blood Management Program with a Clinical Community Approach** 754

S. M. Frank, R. N. Thakkar, S. J. Podlasek, K. H. Ken Lee, T. L. Wintermeyer, W. W. Yang, J. Liu, L. C. Rotello, T. A. Fleury, P. A. Wachter, L. E. Ishii, R. Demski, P. J. Pronovost, and P. M. Ness

Methods are described for implementing a patient blood management program across a multiinstitutional healthcare system as a quality improvement and patient safety effort. Promoting best practices for patient blood management across a health system can reduce unnecessary transfusions, overall blood utilization, and costs, with a 400% return on financial investment.

OME ◆  **Poor Performance on a Preoperative Cognitive Screening Test Predicts Postoperative Complications in Older Orthopedic Surgical Patients** 765

D. J. Culley, D. Flaherty, M. C. Fahey, J. L. Rudolph, H. Javedan, C.-C. Huang, J. Wright, A. M. Bader, B. T. Hyman, D. Blacker, and G. Crosby

In a prospective clinical investigation of patients 65 yr or older without dementia having elective hip or knee replacement, screened preoperatively with the Mini-Cog, 24% were found to have probable cognitive impairment. Patients with probable preoperative cognitive impairment, compared to those patients without, were more likely to be discharged to a place other than home, develop postoperative delirium, and have a longer hospital length of stay. Preoperative cognitive screening of older surgical patients may be valuable for risk assessment and risk stratification in older surgical patients.

◆ **Clinical Effectiveness of Intravenous Exenatide Infusion in Perioperative Glycemic Control after Coronary Artery Bypass Graft Surgery: A Phase II/III Randomized Trial** 775

G. Besch, A. Perrotti, F. Mauny, M. Puyraveau, M. Baltres, G. Flicoteaux, L. S. du Mont, B. Barrucand, E. Samain, S. Chocron, and S. Pili-Floury

Exenatide alone at the dose used was not enough to achieve adequate blood glucose control in coronary artery bypass grafting patients, but it reduced overall consumption of insulin and increased the time to initiation of insulin.

◆  **Are Anesthesia and Surgery during Infancy Associated with Decreased White Matter Integrity and Volume during Childhood?** 788

R. I. Block, V. A. Magnotta, E. O. Bayman, J. Y. Choi, J. J. Thomas, and K. K. Kimble

Children exposed to anesthesia and surgery during infancy had lower whole brain white matter volumes than control subjects. Regional white matter volumes and integrity were also reduced in the exposed children. Although white matter volumes and integrity were reduced in exposed children, no inference about causality can be made, and comorbid conditions may well have contributed to the structural changes that were observed on magnetic resonance imaging.

BASIC SCIENCE

◆ ◆  **Effect of Bronchoconstriction-induced Ventilation–Perfusion Mismatch on Uptake and Elimination of Isoflurane and Desflurane** 800

M. Kretzschmar, A. Kozian, J. E. Baumgardner, J. B. Borges, G. Hedenstierna, A. Larsson, T. Hachenberg, and T. Schilling

Compared with the fairly insoluble desflurane, the uptake and elimination of the more soluble isoflurane in piglets was less affected by methacholine-induced bronchoconstriction and ventilation/perfusion scatter.

 **Transient Receptor Potential Vanilloid 1 Antagonists Prevent Anesthesia-induced Hypothermia and Decrease Postincisional Opioid Dose Requirements in Rodents** 813

A. Garami, M. Ibrahim, K. Gilbraith, R. Khanna, E. Pakai, A. Miko, E. Pinter, A. A. Romanovsky, F. Porreca, and A. M. Patwardhan

The selective transient receptor potential vanilloid 1 antagonists AMG 517 and ABT-102 dose-dependently prevented hypothermia during general anesthesia in rats. These same drugs reduced incisional nociceptive sensitization.

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C. Ma, E. Pejo, M. McGrath, S. S. Jayakar, X. Zhou, K. W. Miller, J. B. Cohen, and D. E. Raines

Naphthalene–etomidate only weakly potentiated γ -aminobutyric acid–evoked currents. However, it significantly decreased the positive modulatory effects of etomidate, propofol, and pentobarbital at the γ -aminobutyric acid type A receptor. The results suggest that naphthalene–etomidate acts as a competitive antagonist of anesthetics at the γ -aminobutyric acid type A receptor.

- Disruption of Hippocampal Multisynaptic Networks by General Anesthetics** 838

M.-C. Kuo and L. S. Leung

Monosynaptic and multisynaptic excitatory postsynaptic potentials, and spontaneous local field potentials, in the CA1 sector of the hippocampus were significantly suppressed by isoflurane at low doses and in a dose-dependent manner. The results, which confirm previous *in vitro* work, are consistent with the premise that hippocampal network disruption may underlie isoflurane-induced, hippocampal-dependent cognitive function.

■ CRITICAL CARE MEDICINE

BASIC SCIENCE

- ◇ ◆ **Reversing Dabigatran Anticoagulation with Prothrombin Complex Concentrate *versus* Idarucizumab as Part of Multimodal Hemostatic Intervention in an Animal Model of Polytrauma** 852

M. Honickel, T. Braunschweig, R. Rossaint, C. Stoppe, H. ten Cate, and O. Grottke

In a porcine polytrauma injury model, blood loss was lower with idarucizumab than with prothrombin complex concentrate (PCC) when administered for dabigatran reversal as part of multimodal therapy. However, survival was 100% in both groups. There were no hypercoagulability effects with idarucizumab, while PCC increased thrombin generation. Without idarucizumab or PCC, tranexamic acid and fibrinogen concentrate were ineffective at reducing bleeding in this model.

■ PAIN MEDICINE

BASIC SCIENCE

- ◆ **Bromodomain-containing Protein 4 Activates Voltage-gated Sodium Channel 1.7 Transcription in Dorsal Root Ganglia Neurons to Mediate Thermal Hyperalgesia in Rats** 862

M.-C. Hsieh, Y.-C. Ho, C.-Y. Lai, H.-H. Wang, A.-S. Lee, J.-K. Cheng, Y.-P. Chau, and H.-Y. Peng

Using a rat model of inflammatory pain, it was observed that bromodomain-containing protein 4 expression was increased in dorsal root ganglia. Higher levels of bromodomain-containing protein 4 were associated with the increased expression of voltage-gated sodium channel 1.7, larger transmembrane sodium currents, and more profound hyperalgesia.

- ◇ **Src Kinase Inhibition Attenuates Morphine Tolerance without Affecting Reinforcement or Psychomotor Stimulation** 878

F. A. Bull, D. T. Baptista-Hon, C. Sneddon, L. Wright, W. Walwyn, and T. G. Hales

The c-Src inhibitor dasatinib attenuated and reversed morphine-induced tolerance in mice. Dasatinib did not alter the locomotor or use reinforcing effects of morphine in mice.

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