THIS MONTH IN
Anesthesiology

Pathophysiology and Treatment of Coagulopathy in Massive Hemorrhage and Hemodilution (Review Article) 1205

Multifactorial coagulopathy after fluid resuscitation with massive hemorrhage is reviewed. *See the accompanying Editorial View on* **page 1016**

Emergency Reversal of Oral Anticoagulation (Case Scenario) 1192

Prothrombin complex concentrate was administered for correction in a patient treated with coumadin.

Femoral Nerve Block Improves Analgesia Outcomes after Total Knee Arthroplasty: A Meta-analysis of Randomized Controlled Trials 1144

Femoral nerve block was found to be superior to patient-controlled analgesia alone for postoperative analgesia in patients having total knee arthroplasty. *See the accompanying Editorial View on* **page 1014**

Regional Anesthesia and Eye Surgery (Clinical Concepts and Commentary) 1236

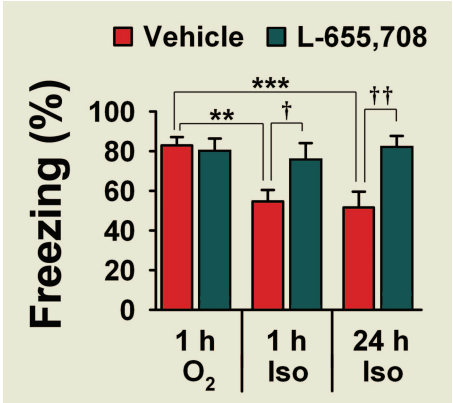
Improving safety during eye blocks has resulted in the development of several alternative techniques.

Minimally Invasive Measurement of Cardiac Output during Surgery and Critical Care: A Meta-analysis of Accuracy and Precision (Review Article) 1220

Four different minimally invasive methods adapted for use during surgery and critical care are reviewed.

Short-term Memory Impairment after Isoflurane in Mice Is Prevented by the $\alpha 5$ γ-Aminobutyric Acid Type A Receptor Inverse Agonist L-655,708 1061

Memory impairment may occur at hospital discharge in up to 47% of patients who received general anesthetics for surgery. This short-term impairment may involve inhibitory $\alpha 5$ subunit–containing γ-aminobutyric acid subtype A receptors ($\alpha 5GABA_A$). The current *in vivo* mouse study examined $\alpha 5GABA_A$ receptor inhibition during isoflurane anesthesia on memory deficits in the early postanesthetic period. Mice were pretreated with an $\alpha 5GABA_A$ receptor-selective inverse agonist (L-655,708), or vehicle, and then exposed to 1.3% isoflurane or air/oxygen (control) for 1 h. Mice were conditioned in fear-associated contextual and cued learning paradigms 1 or 24 h after anesthesia exposure. Although motor and sensory function recovered within minutes after termination of isoflurane administration, short-term and long-term memory deficits were observed for at least 24 h. This deficit was prevented with L-655,708 pretreatment. This study suggests that $\alpha 5GABA_A$ receptors contribute to the memory deficits observed after isoflurane administration in the postanesthesia period.



Broadly Applicable Risk Stratification System for Predicting Duration of Hospitalization and Mortality 1026

Interpretation of publicly reported hospital outcomes is challenging because of a lack of standardized presentation and evaluation of individual patient risk across centers. This study aimed to develop a risk adjustment methodology utilizing the national administrative database, Medicare Provider Analysis and Review (MEDPAR). Then the authors validated the model based on the Medicare database and in a large single-center electronic surgical patient registry database. A total of 35,179,507 patient stay records from MEDPAR files and 103,324 adult surgical patients were used. Risk stratification indices (RSI) for length-of-stay and mortality endpoints were derived from aggregate risk associated with individual diagnostic and procedure codes. A single risk stratification model predicted 30-day and 1-yr mortality; separate risk stratification models predicted length-of-stay and in-hospital mortality. The RSI performed well on the national dataset and significantly better than the Charlson Comorbidity Index on the single-center registry for all outcomes. RSI may be used to assess hospital length-of-stay and mortality for groups of surgical patients across centers. *See the accompanying Editorial Views on* **page 1001** *and* **page 1004**

Does Erythrocyte Blood Transfusion Prevent Acute Kidney Injury? A Propensity-matched Case Control Analysis 1126

Red blood cell transfusion has been associated with acute kidney injury (AKI). Although AKI occurs in 11% to 67% of patients in the intensive care unit, the role of erythrocyte transfusion in this population is not known. This retrospective analysis of prospectively collected data used propensity-matched transfused and nontransfused patients to assess a potential interaction. Of 402 patients with acute lung injury, creatinine levels were elevated in transfused patients (38%) the day after transfusion and in nontransfused patients (33%). On day 7, creatinine increased in 51% and 52% of transfused and nontransfused patients, respectively. The incidences of renal risk, renal injury, and renal failure were also similar between groups. Overall, there was no evidence that transfusion of erythrocytes to patients with acute lung injury affected the development of AKI. *See the accompanying Editorial View on* **page 1012**