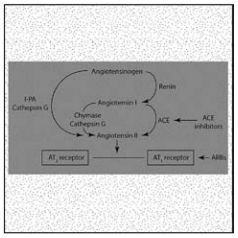
THIS MONTH IN

ANESTHESIOLOGY

253 Identifying Obstructive Sleep Apnea in Administrative Data: A Study of Diagnostic Accuracy

Studies of obstructive sleep apnea (OSA) using health administrative data have used single diagnostic codes to identify people with, or without, OSA. To determine the accuracy of methods used to identify patients with OSA in health administrative data and to assess the accuracy of other case ascertainment algorithms, records of 4,353 patients who had preoperative polysomnograms and underwent surgery between 2003 and 2012 were reviewed. Although the specificities of single diagnostic codes identified in hospital discharge abstracts, as well as the combination of a polysomnogram followed by receipt of a positive airway pressure device before surgery, were high, sensitivities were low and false positive results were identified. *See the accompanying Editorial View on* ***page 243***. *(Summary: M.J. Avram. Image: A. Johnson, Vivo Visuals.)*



288 Association between Withholding Angiotensin Receptor Blockers in the Early Postoperative Period and 30-day Mortality: A Cohort Study of the Veterans Affairs Healthcare System

Angiotensin receptor blockers (ARBs), which are prescribed for chronic hypertension, heart failure, and chronic renal failure, may be withheld on the morning of surgery to reduce episodes of intraoperative hypotension and improve responsiveness to ephedrine and phenylephrine. How often patients with regular preoperative ARB prescriptions, who presented for any inpatient noncardiac surgery in the Veterans Affairs Healthcare system between 1999 and 2011, had ARBs restarted within the first 2 postoperative days was determined as was the association of withholding ARBs with postoperative mortality. ARBs were not resumed by postoperative day 2 in 33.8% of 30,173 surgical admissions of 25,663 patients. Nonresumption of ARBs by postoperative day 2 was independently associated with increased 30-day mortality, even after adjusting for potential confounders. *(Summary: M.J. Avram. Illustration: J.P. Rathmell.)*

307 Association between Intraoperative Hypotension and Hypertension and 30-day Postoperative Mortality in Noncardiac Surgery

This retrospective study combined intraoperative blood pressure data from 18,756 patients undergoing noncardiac surgery at six Veterans Affairs medical centers from 2001 to 2008 with 30-day mortality data to test the hypotheses that adverse effects from hypotension and from hypertension are due to both the magnitude and the duration of deviations from defined thresholds. Thresholds for hypotension and hypertension were defined as two standard deviations below or above the population mean, respectively. Absolute thresholds were also used. Systolic pressure less than 67 to 70 mmHg for more than 5 to 8 min, mean pressure less than 50 mmHg for more than 4 to 5 min, and diastolic pressure less than 30 to 33 mmHg for more than 4 to 5 min were associated with increased mortality. *(Summary: M.J. Avram. Image: J.P. Rathmell.)*

434 Sufentanil Sublingual Tablet System for the Management of Postoperative Pain after Knee or Hip Arthroplasty: A Randomized, Placebo-controlled Study

The sufentanil sublingual tablet system (SSTS) is an investigational, preprogrammed, noninvasive, patient-activated bedside system that enables patient management of their moderate-to-severe acute pain in a hospital setting. The efficacy and safety of the SSTS was evaluated in 419 patients who had undergone total knee or hip replacement surgery under general anesthesia or with spinal anesthesia that did not include intrathecal opioids randomized 3:1 to receive SSTS 15 μg or an identical system containing placebo tablets for postoperative analgesia. The primary outcome, time-weighted summed pain intensity difference to baseline over 48 h, was significantly higher in the SSTS group. The incidence of nausea and pruritus was higher in the SSTS group. *(Summary: M.J. Avram. Image:©2013 AcelRx Pharmaceuticals, Inc.)*

444 Discharge Readiness after Tricompartment Knee Arthroplasty: Adductor Canal *versus* Femoral Continuous Nerve Blocks—A Dual-center, Randomized Trial

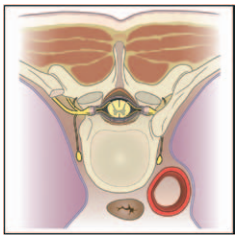
Continuous femoral nerve blocks provide analgesia after knee arthroplasty but induce quadriceps weakness and are associated with an increased risk of falling. The reduced motor block induced by continuous adductor canal blocks may decrease the risk of falls. Eighty patients were randomly assigned to adductor canal or femoral perineural catheter treatment groups to test the hypothesis that a continuous adductor canal block decreases the time to attain four specific discharge criteria after tricompartment knee arthroplasty: adequate analgesia; independence from intravenous opioids; ability to independently stand and sit down; and unassisted ambulation of at least 30 m. A continuous adductor canal block did not decrease the time to overall discharge readiness, but decreased the time until adequate mobilization. *(Summary: M.J. Avram. Image: J.P. Rathmell.)*

272 Hyperinsulinemic Normoglycemia Does Not Meaningfully Improve Myocardial Performance during Cardiac Surgery: A Randomized Trial

Hypertrophied hearts experience exaggerated contractile dysfunction from ischemia and reperfusion injury. To test the hypothesis that treatment with hyperinsulinemic normoglycemic clamp improves intraoperative left ventricular function in patients with aortic stenosis, 97 patients undergoing aortic valve replacement surgery for aortic stenosis were randomly assigned to hyperinsulinemic normoglycemic clamp (high-dose insulin with concomitant glucose infusion titrated to normoglycemia) or standard therapy (insulin treatment if glucose concentration was more than 150 mg/dl). Use of intraoperative high-dose insulin with exogenous dextrose in high-risk cardiac surgical patients did not provide clinically meaningful improvements in myocardial contractility as measured by left ventricular longitudinal strain and strain rate. There was also no reduction in myocardial enzyme release or other hemodynamic benefit. *See the accompanying Editorial View on* **page 249**. *(Summary: M.J. Avram. Image: J.P. Rathmell.)*

423 Biological Impact of Transpulmonary Driving Pressure in Experimental Acute Respiratory Distress Syndrome

Ventilator-induced lung injury (VILI) may be promoted by different mechanical factors, including tidal volume (V_T), positive end-expiratory pressure (PEEP), respiratory system plateau pressure, and transpulmonary driving pressure (ΔP_L). In a rat model of acute respiratory distress syndrome, endotoxin was instilled intratracheally to induce lung inflammation. After 24 h, animals were randomized to receive different combinations of V_T and PEEP to create a range of ΔP_L. A ventilation strategy combining low V_T (6 ml/kg) and the lowest PEEP and ΔP_L to maintain oxygenation in a normal range minimized VILI even in the presence of alveolar collapse. VILI was also reduced by a VT of 6 ml/kg combined with PEEP at the highest level to open the lungs, despite allowing hyperinflation. *(Summary: M.J. Avram. Illustration: J.P. Rathmell.)*



459 Different Approaches to Ultrasound-guided Thoracic Paravertebral Block: An Illustrated Review (Review Article)

Thoracic paravertebral (TPV) nerve block, which produces ipsilateral, segmental, somatic, and sympathetic nerve blockade in contiguous thoracic dermatomes, has become increasingly popular for treating acute and chronic pain of thorax, abdomen, and pelvis. The current literature on ultrasound-guided TPV blocks is limited to description of techniques in small numbers of patients or cadavers. In this review, this information has been brought together and arranged clearly to facilitate decision making among practitioners wanting to use ultrasound guidance for TPV blockade. Comprehensive information on TPV anatomy is provided, ultrasound images of the TPV space are interpreted using cross-sectional anatomical images that are matched in location and plane, and different ultrasound-guided approaches to TPV blockade are briefly described and discussed. *(Summary: M.J. Avram. Illustration: G. Nelson/J.P. Rathmell.)*