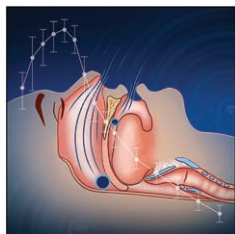


THIS MONTH IN ANESTHESIOLOGY



213 Non-steady State Modeling of the Ventilatory Depressant Effect of Remifentanyl in Awake Patients Experiencing Moderate-to-severe Obstructive Sleep Apnea

Patients with obstructive sleep apnea (OSA) are often reported to have increased sensitivity to opioid-induced ventilatory depression. The hypothesis that patients with moderate-to-severe OSA are more sensitive to remifentanyl-induced ventilatory depression was tested in 20 control patients with mild or no OSA and 30 patients with moderate-to-severe OSA, defined as an apnea/hypopnea index of 15 or more episodes per hour of sleep. The predicted remifentanyl effect site concentration at which half-maximal depression of minute ventilation occurred in awake patients receiving a remifentanyl infusion of $0.2 \text{ mcg} \cdot \text{kg}^{-1}$ of ideal body weight per minute did not differ between control patients and patients with moderate-to-severe OSA. Thus, among surgical patients, those who suffer from moderate-to-severe OSA were not more sensitive to the ventilatory depressant effect of remifentanyl than non-OSA patients or patients with mild OSA. See the accompanying Editorial View on [page 186](#).

(Summary: M. J. Avram. Image: S. Jarrett.)



203 Amisulpride for the Rescue Treatment of Postoperative Nausea or Vomiting in Patients Failing Prophylaxis: A Randomized, Placebo-controlled Phase III Trial

Prophylaxis for postoperative nausea and/or vomiting commonly involves 5HT₃-antagonists, such as ondansetron, often in combination with dexamethasone. The failure rate for postoperative nausea and/or vomiting prophylaxis exceeds 30%. The hypothesis that amisulpride, a dopamine D₂/D₃ antagonist, would be more effective than placebo as rescue treatment of postoperative nausea and/or vomiting for the 24-h after administration was tested in a randomized, double-blind, placebo-controlled trial of 702 patients scheduled to undergo open or laparoscopic elective surgery under general inhalational anesthesia expected to last at least 1 h who had failed standard prophylaxis involving antiemetics from other pharmacologic classes. Patients were randomized to receive a single dose of 5 or 10 mg intravenous amisulpride or matching placebo. Complete response occurred in 67/235 patients in the placebo group (28.5%), 80/237 in the 5 mg amisulpride group (33.8%), and 96/230 in the 10 mg amisulpride group (41.7%). The adjusted odds ratio for occurrence of complete response for 10 mg amisulpride versus placebo using logistic regression analysis was 1.85 (95% CI, 1.23 to 2.76). See the accompanying Editorial View on [page 183](#).

(Summary: M. J. Avram. Image: ©ThinkStock.)



227 Long-term Impact of Crystalloid versus Colloid Solutions on Renal Function and Disability-free Survival after Major Abdominal Surgery

In a study of 160 patients having major open abdominal surgery who were randomized to receive boluses of either a balanced crystalloid solution or a balanced colloid (hydroxyethyl starch) solution as part of intraoperative goal-directed fluid therapy, administration of balanced hydroxyethyl starch solution was associated with better short-term outcomes than administration of a balanced crystalloid solution. A follow-up study 1 yr after surgery evaluated renal function based on serum creatinine concentration and estimated glomerular filtration rate in 129 patients and the disability score using the World Health Organization Disability Assessment Schedule 2.0 (WHODAS) in 114 patients. There were no differences between groups in serum creatinine concentrations or estimated glomerular filtration rates at both 6-month and 12-month follow-ups. The 1-yr disability score was lower in the colloid group (2.7) than it was in the crystalloid group (7.6). Disability-free survival was higher in the colloid group (79%) than in the crystalloid group (60%) at 1 yr, as well.

(Summary: M. J. Avram. Image: J. P. Rathmell.)



263 Outcomes of Patients Presenting with Mild Acute Respiratory Distress Syndrome: Insights from the LUNG SAFE Study

Patients with initial mild acute respiratory distress syndrome (ARDS) represent a relatively poorly characterized population that was only classified as having ARDS in the most recent definition. The hypothesis that patients presenting with mild ARDS constitute a heterogeneous group with diverse evolutions was tested in 580 patients with mild ARDS from the Large Observational Study to Understand the Global Impact of Severe Acute Respiratory Failure (LUNG SAFE) who were intubated on the first day they fulfilled ARDS criteria. In the first 7 days following the onset of mild ARDS, 18% of the patients only improved, 36% remained stable, and 46% worsened. In a multivariable logistic regression only admission for trauma or pneumonia, higher nonpulmonary sequential organ failure assessment score, lower initial $\text{Pao}_2/\text{Fio}_2$, and higher peak inspiratory pressures were independently associated with higher risk of worsening in the 7 days after mild ARDS onset. The in-hospital mortality of all patients with initial mild ARDS was 30%; mortality in the patients in whom ARDS worsened was 37%. See the accompanying Editorial View on [page 190](#).

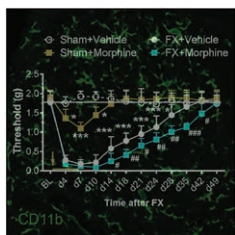
(Summary: M. J. Avram. Image: J. P. Rathmell.)



314 Influence of Sex and Body Language on Patient Perceptions of Anesthesiologists

Patient perception of physician competence may play a role in establishing a positive relationship between patients and their physicians. The hypotheses that patients perceive male anesthesiologists and anesthesiologists who display confident body language to be more intelligent, more confident, and more competent than female anesthesiologists and anesthesiologists who do not display confident body language, respectively, were tested in 200 patients presenting to a pre-anesthesia evaluation center who viewed four videos depicting male and female nonphysician actors playing the role of an anesthesiologist in a random order. Body language that incorporated confident, "high power" posing improved patient perception of the actor anesthesiologists' intelligence (odds ratio for confident vs. unconfident postures, 1.69) and confidence (odds ratio, 2.27) as well as the patients' willingness to have the actor anesthesiologist care for a family member (odds ratio, 2.34). The sex of the anesthesiologist alone did not significantly affect patient perceptions (respective odds ratios for male vs. female: 0.84, 1.11, and 1.18).

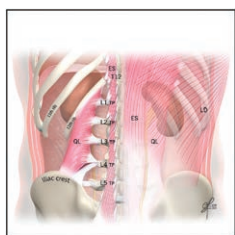
(Summary: M. J. Avram. Image: J. P. Rathmell.)



292 Morphine Exacerbates Postfracture Nociceptive Sensitization, Functional Impairment, and Microglial Activation in Mice

Animals administered opioids, particularly morphine, near the time of incision, peripheral nerve injury, or spinal cord injury recover normal nociceptive sensitivity more slowly than opioid naïve animals. The hypothesis that persistent changes in the spinal expression of pain-related genes might contribute to impairment of both nociceptive and functional recovery was tested in male mice administered a week-long course of opioid treatment beginning at the time of tibial fracture and surgical pinning. Morphine treatment exacerbated nociceptive sensitization and functional impairment. Spinal Toll-like receptor 4 (TLR4), a key innate immunity receptor and mediator of microglia activation, was up-regulated for at least 2 weeks after tibial fracture and morphine treatment greatly enhanced TLR4 expression at the messenger RNA and protein levels. Spinal expression of TLR4 overlapped strongly with microglia that also showed enhanced expression of the CD11b and Iba1 marker proteins after fracture and morphine treatment. Co-treatment of mice with the TLR4 antagonist TAK-242 during morphine administration reduced hind paw allodynia and unweighting but did not normalize gait dysfunction.

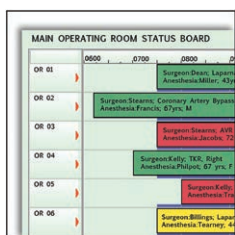
(Summary: M. J. Avram. Image: Adapted from original article.)



322 Quadratus Lumborum Block: Anatomical Concepts, Mechanisms, and Techniques (Clinical Focus Review)

Ultrasound-guided quadratus lumborum block is a recently described fascial plane block in which local anesthetic is injected adjacent to the quadratus lumborum muscle with the goal of anesthetizing the thoracolumbar nerves. The quadratus lumborum block is named on the basis of the anatomical location of the needle tip placement relative to the quadratus lumborum muscle: lateral, posterior, or anterior. The relevant anatomy, lateral, posterior, and anterior approaches, as well as sonography and technical performance are reviewed as are the spread of the injectate and potential mechanisms of action. Indications, absolute and relative contraindications, and complications are also considered. The limited clinical evidence summarized in this review suggests that quadratus lumborum blocks may result in sensory blockade that includes the T7 to L2 dermatomes.

(Summary: M. J. Avram. Image: From original article.)



336 Measuring Clinical Productivity of Anesthesiology Groups: Surgical Anesthesia at the Facility Level (Review Article)

Benchmarking and comparing group productivity is an essential activity of data-driven management. As the number of facilities covered by an anesthesiology group expands, understanding surgical anesthesia activity and productivity at each facility can no longer be done by intuition and impressions but must include data-driven decision-making and use of dashboards to follow trends and identify opportunities. For anesthesiology groups, productivity must be done at the facility level to reduce some of the confounding factors. Group measurements are used to evaluate how the group (at a facility level) is performing compared to the previous year, how it is doing compared to another group of a similar facility, and how it is doing compared to an industry benchmark. When industry or external comparisons are done, use of total anesthesia (ASA) units per anesthetizing site allows for overall productivity comparisons. Large groups can invest more effort in collecting data and comparing facility productivity internally with group defined measurements including total ASA units billed per full time equivalent.

(Summary: M. J. Avram. Image: J. P. Rathmell.)