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# ANESTHESIOLOGY

Volume 134

Issue 4

April 2021

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Health care is undergoing transformation with a shift from fee-for-service care to fee-for-value care. Anesthesiologists are in a unique position to improve patient outcomes and manage cost through institution of novel perioperative care programs for the surgical patients.

**Perioperative Medicine**

**CLINICAL SCIENCE**

◆ ◆ **Balanced Opioid-free Anesthesia with Dexmedetomidine *versus* Balanced Anesthesia with Remifentanyl for Major or Intermediate Noncardiac Surgery: The Postoperative and Opioid-free Anesthesia (POFA) Randomized Clinical Trial**  
  
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 E. Futier, B. Laviolle, for the POFA Study Group  
 and the SFAR Research Network* .....541

In a randomized, blinded, multicenter trial, study patients undergoing noncardiac surgery received a standard anesthetic featuring lidocaine and ketamine, plus either remifentanyl or an alternative anesthetic where dexmedetomidine was substituted for remifentanyl. The primary outcome composed of postoperative hypoxemia, ileus, and cognitive dysfunction, was more common among patients receiving opioid-free anesthesia. Importantly, opioid-free anesthesia with dexmedetomidine was associated with severe bradycardia, and the study was terminated early for that reason. **SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT**

◇ Refers to This Month in ANESTHESIOLOGY

◆ Refers to Editorial

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 Part of the Letheron writing competition

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**ON THE COVER:** It has been speculated that opioid-free anesthesia may provide adequate pain control while reducing postoperative opioid consumption; however, there is currently no evidence to support the speculation. In this issue of ANESTHESIOLOGY, Beloeil *et al.* tested the hypothesis that opioid-free balanced anesthetic with dexmedetomidine would reduce postoperative opioid-related adverse events compared to balanced anesthesia with remifentanyl. Also in this issue, Shanthanna *et al.* present a critical review of opioid-free *versus* opioid-sparing approaches. In an accompanying editorial, Kharasch and Clark review the evolution of opioid-free anesthesia and call for a balanced approach to use of opioids in moderation going forward. Cover Illustration: A. Johnson, Vivo Visuals.

- Beloeil *et al.*: Balanced Opioid-free Anesthesia with Dexmedetomidine *versus* Balanced Anesthesia with Remifentanyl for Major or Intermediate Noncardiac Surgery: The Postoperative and Opioid-free Anesthesia (POFA) Randomized Clinical Trial, p. 541
- Shanthanna *et al.*: Perioperative Opioid Administration: A Critical Review of Opioid-free *versus* Opioid-sparing Approaches, p. 645
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A retrospective cohort study evaluated 9,734 patients who had aortic valve, mitral valve, and/or coronary artery bypass graft surgery over 7 yr at a single center. The confounder-adjusted incidence of the composite outcome of in-hospital low cardiac output syndrome or mortality was similar for morning and afternoon surgery. The results do not support selective morning or afternoon scheduling for cardiac surgery. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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D. A. Colquhoun, A. M. Leis, A. M. Shanks, M. R. Mathis, B. I. Naik,  
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This five-center retrospective observational study evaluated records from 3,232 thoracic surgical patients who underwent one-lung ventilation for pneumonectomies, bilobectomies, single lobectomies, segmentectomies, or wedge resections. Patients with tidal volumes 5 ml/kg or lower and positive end-expiratory pressure greater than 5 cm H<sub>2</sub>O did not have significantly different 30-day adverse pulmonary outcomes compared with patients not ventilated with this strategy. Higher mechanical ventilation driving pressures were not associated with composite 30-day adverse pulmonary outcome. The protective ventilation regimen tested was not associated with decreased pulmonary complications. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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In genetically modified mice lacking the vesicular acetylcholine transporter in the forebrain, lower doses of isoflurane and ketamine were necessary to induce the loss of the righting reflex, a surrogate for loss of consciousness, when compared to wild-type counterparts. Hippocampal gamma power was lower in genetically modified mice lacking forebrain acetylcholine than in the wild-type mice during both isoflurane and ketamine anesthesia. These observations suggest that forebrain cholinergic neurons modulate anesthetic sensitivity during isoflurane and ketamine anesthesia. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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