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◆ Survey Research

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In this Readers' Toolbox review, we aim to discuss the elements of good survey research and clarify some of the pitfalls to help readers conduct and analyze survey research.

Perioperative Medicine

CLINICAL SCIENCE

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

A. S. Habib, P. Kranke, S. D. Bergese, F. Chung, S. Ayad, N. Siddiqui, J. Motsch, D. G. Leiman, T. I. Melson, P. Diemunsch, G. M. Fox, and K. A. Candiotti.....203

Ten milligrams of intravenous amisulpride, a dopamine D₂/D₃-antagonist, is superior to placebo at treating established postoperative nausea or vomiting after failed prophylaxis, whereas 5 mg was not superior to placebo.

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

A. G. Doufas, S. L. Shafer, N. H. A. Rashid, C. A. Kushida, and R. Capasso..... 213

The hypothesis that patients with moderate-to-severe obstructive sleep apnea are more sensitive to remifentanyl-induced ventilatory depression was tested in 20 control patients with mild or no obstructive sleep apnea and 30 patients with moderate-to-severe obstructive sleep apnea, 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 µg · kg⁻¹ of ideal body weight per minute did not differ between control patients and patients with moderate-to-severe obstructive sleep apnea. This does not support the notion that adults with moderate-to-severe obstructive sleep apnea have increased sensitivity to opioid-induced ventilatory depression.

◇ Refers to This Month in ANESTHESIOLOGY

◆ Refers to Editorial Views

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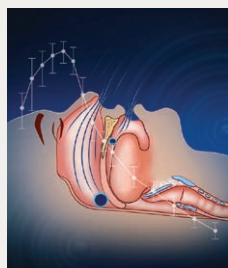
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 Part of the Letheon writing competition


 This article has a Visual Abstract

 Readers' Toolbox



ON THE COVER: Patients with obstructive sleep apnea are often said to have increased sensitivity to opioid-induced ventilatory depression. In this issue of ANESTHESIOLOGY, Doufas *et al.* compared minute ventilation in 30 patients with moderate-to-severe obstructive sleep apnea and 20 controls with no to mild obstructive sleep apnea who received a brief remifentanyl infusion during continuous monitoring of ventilation. Obstructive sleep apnea status did not influence the sensitivity to remifentanyl-induced ventilatory depression in awake patients. In an accompanying Editorial View, Henthorn and Olofsen discuss the limitations that can be drawn from this economized pharmacokinetic–pharmacodynamic study.

- Doufas *et al.*: Non-steady State Modeling of the Ventilatory Depressant Effect of Remifentanyl in Awake Patients Experiencing Moderate-to-severe Obstructive Sleep Apnea, p. 213
- Henthorn and Olofsen: Where's the Beef? How Much Can We Skimp on Pharmacokinetic–Pharmacodynamic Data? p. 186

-  **Long-term Impact of Crystalloid versus Colloid Solutions on Renal Function and Disability-free Survival after Major Abdominal Surgery**
A. Joosten, A. Delaporte, J. Mortier, B. Ickx, L. Van Obbergh, J.-L. Vincent, M. Cannesson, J. Rinehart, and P. Van der Linden227

In a long-term follow-up of a previous trial comparing hydroxyethyl starch solution and balanced crystalloid used as part of intraoperative goal directed fluid therapy in patients undergoing major open abdominal surgery, there was no evidence that one therapy had superior renal function; however, limited power tempers any ability to completely rule out a difference. Disability-free survival was higher in the colloid than in the crystalloid group.

- Anesthesiologist Specialization and Use of General Anesthesia for Cesarean Delivery**
B. T. Cobb, M. B. Lane-Fall, R. C. Month, O. C. Onuoha, S. K. Srinivas, and M. D. Neuman.....237

Maternal and provider factors are strongly associated with use of general anesthesia for cesarean delivery. Patients receiving care from obstetric-specialized anesthesiologists are 29% less likely to receive general anesthesia for cesarean delivery.


BASIC SCIENCE

- Nitric Oxide Donor Prevents Neonatal Isoflurane-induced Impairments in Synaptic Plasticity and Memory**
M. L. Schaefer, M. Wang, P. J. Perez, W. C. Peralta, J. Xu, and R. A. Johns.....247

Neonatal postsynaptic density-95 PDZ2WT peptide treatment mimics the effects of isoflurane (~1 minimum alveolar concentration) by altering dendritic spine morphology, neural plasticity, and memory without inducing detectable increases in apoptosis or changes in synaptic density. These results indicate that a single dose of isoflurane (~1 minimum alveolar concentration) or post-synaptic density-95 PDZ2WT peptide alters dendritic spine architecture and functions important for cognition in the developing brain. This impairment can be prevented by administration of the NO donor molsidomine.

Critical Care Medicine

CLINICAL SCIENCE

-  **Outcomes of Patients Presenting with Mild Acute Respiratory Distress Syndrome: Insights from the LUNG SAFE Study**
T. Pham, A. S. Neto, P. Pelosi, J. G. Laffey, C. De Haro, J. A. Lorente, G. Bellani, E. Fan, L. J. Brochard, A. Pesenti, M. J. Schultz, and A. Artigas, on behalf of the LUNG SAFE Investigators and the European Society of Intensive Care Medicine Trials Group.....263

Approximately 80% of cases of mild adult respiratory distress syndrome persist or worsen in the first week; in all cases, the mortality is substantial (30%) and is higher (37%) in those in whom the adult respiratory distress syndrome progresses.

- Low Incidence of Biphasic Allergic Reactions in Patients Admitted to Intensive Care after Anaphylaxis**
S. Højlund, P. Søre-Jensen, A. Perner, M. H. Bestle, P. Carl, K. Thormar, S. Viggers, S. Elberling, and L. H. Garvey.....284

In 83 cases of patients admitted to intensive care units in Denmark after anaphylaxis, suspected biphasic reactions occurred in 4 (4.8%) of patients. The incidence of biphasic reactions was low, 3 out of 4 were considered possible, and only 1 considered a probable biphasic allergic reaction.

Pain Medicine



BASIC SCIENCE

-  **Morphine Exacerbates Postfracture Nociceptive Sensitization, Functional Impairment, and Microglial Activation in Mice**
W.-W. Li, K.-A. Irvine, P. Sahbaie, T.-Z. Guo, X.-Y. Shi, V. L. Tawfik, W. S. Kingery, and J. D. Clark.....292


In a mouse tibia fracture and intramedullary pinning model, injury-induced allodynia and neuroinflammation, in particular microglial activation, were significantly increased by morphine. Reduction of microglial activation by an antagonist of the Toll-like receptor 4 attenuated the adverse effects of morphine. The data are consistent with the premise that morphine increases nociceptive sensitization, functional impairment, and prolongs recovery; suppression of neuroinflammation, and in particular microglial activation, can mitigate the adverse effects of morphine.

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-  **Influence of Sex and Body Language on Patient Perceptions of Anesthesiologists**
K. T. Forkin, L. K. Dunn, C. J. Kaperak, J. F. Potter, A. J. Bechtel, A. M. Kleiman, J. L. Huffmyer, S. R. Collins, G. R. Lyons, J. Z. Ma, and E. C. Nemergut.....314

Actor anesthesiologists who maintained confident, high-power poses were considered smarter, more competent, more likely to be seen as leaders, and preferred by patients to care for a family member. Sex of the actor did not alter perceptions of competence.

CLINICAL FOCUS REVIEW

Quadratus Lumborum Block: Anatomical Concepts, Mechanisms, and Techniques

H. Elsharkawy, K. El-Boghdady, and M. Barrington322

A review of anatomy, potential mechanisms of action, and techniques and summary of clinical evidence for quadratus lumborum block.

REVIEW ARTICLE

Measuring Clinical Productivity of Anesthesiology Groups: Surgical Anesthesia at the Facility Level

A. E. Abouleish, M. E. Hudson, and C. W. Whitten336

To have meaningful conclusions, benchmarking (external comparisons) is done at the facility level using per anesthetizing site and per case measurements. For internal comparisons of facilities covered by one group, group-specific measurements can be developed.

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