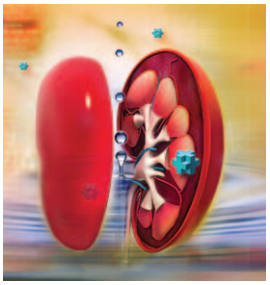
ANESTHESIOLOGY



ON THE COVER:

Acute kidney injury (AKI) remains a major cause of postoperative morbidity and patients with preoperative hypoalbuminemia may be at higher risk. In this issue of ANESTHESIOLOGY, Lee and colleagues demonstrate that immediate preoperative administration of 20% albumin solution reduced the incidence of AKI after off-pump coronary artery bypass surgery.

- Lee *et al.*: Effect of Exogenous Albumin on the Incidence of Postoperative Acute Kidney Injury in Patients Undergoing Off-pump Coronary Artery Bypass Surgery with a Preoperative Albumin Level of Less Than 4.0 g/dl, p. 1001
- Jiang and Shaw: Albumin Supplementation as a Therapeutic Strategy in Cardiac Surgery: Useful Tool or Expensive Hobby?, p. 983

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Effect of Exogenous Albumin on the Incidence of Postoperative Acute Kidney Injury in Patients Undergoing Off-pump Coronary Artery Bypass Surgery with a Preoperative Albumin Level of Less Than 4.0 g/dl 1001
E.-H. Lee, W.-J. Kim, J.-Y. Kim, J.-H. Chin, D.-K. Choi, J.-Y. Sim, S.-J. Choo, C.-H. Chung, J.-W. Lee, and I.-C. Choi

Administration of 20% exogenous albumin immediately before surgery significantly reduces the risk of acute kidney injury after off-pump coronary artery bypass surgery in patients with a preoperative serum albumin level of less than 4.0 g/dl. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

Auscultation *versus* Point-of-care Ultrasound to Determine Endotracheal *versus* Bronchial Intubation: A Diagnostic Accuracy Study 1012
D. Ramsingh, E. Frank, R. Haughton, J. Schilling, K. M. Gimenez, E. Banh, J. Rinehart, and M. Cannesson

This prospective, randomized, double-blinded, crossover trial compared the accuracy of detecting bronchial intubation between point-of-care ultrasound and auscultation in 42 adult subjects. The point-of-care ultrasound was a reliable technique to detect bronchial intubation by demonstrating absent contralateral pleural lung sliding on the unintubated side. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

Fibrin Network Changes in Neonates after Cardiopulmonary Bypass 1021
A. C. Brown, R. H. Hannan, L. H. Timmins, J. D. Fernandez, T. H. Barker, and N. A. Guzzetta

Clots formed from blood samples collected from 10 neonates after cardiopulmonary bypass were more porous than clots formed from samples collected before surgery. Clots formed from purified fibrinogen from neonates alone or mixed with adult fibrinogen were less dense than adult clots, suggesting that transfusion of adult fibrinogen may be less effective in neonates than in adults. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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P. S. Myles, M. T. V. Chan, J. Kasza, M. J. Paech, K. Leslie, P. J. Peyton, D. I. Sessler, G. Haller, W. S. Beattie, C. Osborne, J. R. Sneyd, and A. Forbes

Nitrous oxide increased the risk of severe postoperative nausea and vomiting, more so in Asian subjects; the effect was eliminated by pretreatment with an antiemetic. Severe postoperative nausea and vomiting was associated with fever, poor quality of recovery, and increased hospital stay, indicating that its prevention is clinically important. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

Tapered-cuff Endotracheal Tube Does Not Prevent Early Postoperative Pneumonia Compared with Spherical-cuff Endotracheal Tube after Major Vascular Surgery: A Randomized Controlled Trial 1041
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Polyvinyl chloride tapered-cuff endotracheal tubes did not lower the postoperative pneumonia frequency after major vascular surgery. Higher tapered-cuff–pressure variability and higher percentage of time with cuff overinflation were documented. The potential clinical impact of such findings warrants further evaluation. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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F. W. Abdallah, D. B. Whelan, V. W. Chan, G. A. Prasad, R. V. Endersby, J. Theodoropolous, S. Oldfield, J. Oh, and R. Brull

In a randomized trial of 100 subjects undergoing anterior cruciate ligament, analgesia from adductor canal block was not inferior to that of femoral nerve block, but quadriceps muscle strength was superior.

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A. P. Wojtovich, C. O. Smith, W. R. Urciuoli, Y. T. Wang, X.-M. Xia, P. S. Brookes, and K. Nehrke

The authors have used novel gene-deleted mice to demonstrate that K^+ flux *via* the K_{Na} Slick channel encoded by the *Slo2.1* gene is required for anesthetic preconditioning in mice. The identification of the role for Slick in anesthetic preconditioning will drive further development of novel cardiac-protective strategies and drugs for the clinical setting. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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Infusion System Architecture Impacts the Ability of Intensive Care Nurses to Maintain Hemodynamic Stability in a Living Swine Simulator 1077
M. J. Pezone, R. A. Peterfreund, M. Y. Maslov, R. R. Govindaswamy, and M. A. Lovich

We investigated the ability of skilled intensive care unit registered nurses to overcome pharmacologic delays caused by large infusion system common volumes in a swine model. The data suggest that smaller common volume leads to better hemodynamic control.

BASIC SCIENCE

🌐 **Classically Activated Macrophages Protect against Lipopolysaccharide-induced Acute Lung Injury by Expressing Amphiregulin in Mice** 1086
Y. Xu, C. Meng, G. Liu, D. Yang, L. Fu, M. Zhang, Z. Zhang, H. Xia, S. Yao, and S. Zhang

Amphiregulin was expressed in alveolar macrophages after acute lung injury. Exogenous amphiregulin protected, whereas amphiregulin antibodies exacerbated lung injury. The results are consistent with the notion up-regulation of amphiregulin in activated alveolar macrophages can exert a protective effect on the lung tissue in a model of acute lung injury. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

🌐 **Mechanical Power and Development of Ventilator-induced Lung Injury** 1100
M. Cressoni, M. Gotti, C. Chiurazzi, D. Massari, I. Algieri, M. Amini, A. Cammaroto, M. Brioni, C. Montaruli, K. Nikolla, M. Guanziroli, D. Dondossola, S. Gatti, V. Valerio, G. L. Vergani, P. Pugni, P. Cadringher, N. Gagliano, and L. Gattinoni

Twenty-four anesthetized piglets ventilated with a range of tidal volume and respiratory rate developed widespread lung injury above a threshold of 12 J/min. This finding suggests that mechanical power applied may be taken into account for ventilator-induced lung injury prevention. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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The administration of oxaliplatin to rats leads to nociceptive sensitization and the accumulation of the drug in cerebrospinal fluid. Oxaliplatin may support sensitization of spinal cord neurons through an epigenetic mechanism resulting in the up-regulation of CX3CL1.

◆ 🌐 **Persistent Catechol-*O*-methyltransferase–dependent Pain Is Initiated by Peripheral β-Adrenergic Receptors** 1122
B. P. Ciszek, S. C. O'Buckley, and A. G. Nackley

In rats, sustained administration of a catecholamine-*O*-methyltransferase inhibitor produces hypersensitivity to mechanical and thermal stimuli, which is prevented by peripheral, but not spinal or supraspinal, administration of β-adrenoceptor antagonists, suggesting a peripheral site of action. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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P. Toledo, S. McLean, L. Duce, C. A. Wong, A. Schubert, and D. S. Ward

Thirty percent of all the Medical Student Anesthesia Research Fellowship participants were authors on a subsequent publication. Among participants for whom residency information was available, 58% matched into an anesthesiology program.

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