

## ◆ THIS MONTH IN ANESTHESIOLOGY

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- ◆◆ **Anesthetic Management and Surgical Site Infections in Total Hip or Knee Replacement: A Population-based Study** 279  
Chuen-Chau Chang, Hsiu-Chen Lin, Hui-Wen Lin, and Heng-Ching Lin  
*The odds of surgical site infections in patients receiving total hip or knee replacement under general anesthesia are 2.21 times higher than for those under epidural/spinal anesthesia, after adjusting for patient, surgeon, and hospital characteristics.*
- ◆ **Preoperative Prolonged Steroid Use Is Not Associated with Intraoperative Blood Transfusion in Noncardiac Surgical Patients** 285  
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*Prolonged steroid use was not associated with increased intraoperative transfusion requirements and thromboembolic events; however, risk of systemic and wound infections was increased.*
- ◆ **Propofol and Remifentanyl Differentially Modulate Frontal Electroencephalographic Activity** 292  
David T. J. Liley, Nicholas C. Sinclair, Tarmo Lipping, Bjorn Heyse, Hugo E. M. Vereecke, and Michel M. R. F. Struys  
*On the basis of fixed-order time series modeling, remifentanyl and propofol are shown to differentially modulate frontal electroencephalographic activity. This dissociation in activity may enable the independent monitoring of hypnotic and analgesic drug action.*

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- Intraoperative Systolic Blood Pressure Variability Predicts 30-day Mortality in Aortocoronary Bypass Surgery Patients** 305  
 Solomon Aronson, Mark Stafford-Smith, Barbara Phillips-Bute, Andrew Shaw, Jeffrey Gaca, and Mark Newman; for members of the Cardiothoracic Anesthesiology Research Endeavors  
*Intraoperative blood pressure data from 7,504 patients having coronary bypass surgery demonstrated an association between mean duration of systolic blood pressure excursions—outside a target threshold—and 30-day mortality.*
- Visual P2–N2 Complex and Arousal at the Time of Encoding Predict the Time Domain Characteristics of Amnesia for Multiple Intravenous Anesthetic Drugs in Humans** 313  
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- Perioperative Hypothermia (33°C) Does Not Increase the Occurrence of Cardiovascular Events in Patients Undergoing Cerebral Aneurysm Surgery: Findings from the Intraoperative Hypothermia for Aneurysm Surgery Trial** 327  
 Hoang P. Nguyen, Jonathan G. Zaroff, Emine O. Bayman, Adrian W. Gelb, Michael M. Todd, and Bradley J. Hindman; on behalf of the IHAST-MIDS and IHAST Investigators  
*In 1,000 patients undergoing cerebral aneurysm surgery, randomization to intraoperative hypothermia (33.3° ± 0.8°C) was not associated with an increased occurrence of cardiovascular events when compared with intraoperative normothermia (36.7° ± 0.5°C).*
- Pharmacokinetic–Pharmacodynamic Modeling of Propofol in Children** 343  
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- Feasibility and Efficacy of Preoperative Epidural Catheter Placement for Anterior Scoliosis Surgery** 353  
 Manuel Wenk, Christian Ertmer, Thomas P. Weber, Ulf R. Liljenqvist, Daniel M. Pöpping, Michael Möllmann, and Viola Bullmann  
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- Xenon Pretreatment Attenuates Anesthetic-induced Apoptosis in the Developing Brain in Comparison with Nitrous Oxide and Hypoxia** 360  
 Yi Shu, Shivali M. Patel, Chen Pac-Soo, António Rei Fidalgo, Yanjie Wan, Mervyn Maze, and Daqing Ma  
*Although xenon pretreatment protects against general anesthetic-induced neuroapoptosis, the opposite was evident after hypoxic pretreatment. If extrapolated to the human setting, this could have clinical benefits (xenon pretreatment) or adverse consequences (hypoxic event).*
- Oxygen and Surgical Site Infection: A Study of Underlying Immunologic Mechanisms** 369  
 Motaz Qadan, Christopher Battista, Sarah A. Gardner, Gary Anderson, Ozan Akca, and Hiram C. Polk, Jr.  
*Clinical trials investigating the role of perioperative hyperoxia in decreasing surgical site infection have reported conflicting results. This study explores potential underlying cellular mechanisms through which supplemental oxygen could act.*

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- ◆◆◆ **Increase of Oxygen Consumption during a Progressive Decrease of Ventilatory Support Is Lower in Patients Failing the Trial in Comparison with Those Who Succeed** 378  
Giacomo Bellani, Giuseppe Foti, Ester Spagnoli, Manuela Milan, Alberto Zanella, Massimiliano Greco, Nicolò Patroniti, and Antonio Pesenti  
*The aim of this study was to test the hypothesis that, during weaning from mechanical ventilation, oxygen consumption increases more in patients who fail to wean. Patients judged eligible for weaning were enrolled in a protocol that used decreasing levels of pressure support. Patients were defined as belonging to the failure group if they developed signs of respiratory distress according to standard criteria, or to the success group if they did not. Sixteen patients were able to complete successfully the trial. Twelve patients failed the protocol; the success group had a minimum oxygen consumption lower than the failure group. Patients failing a decremental pressure support trial, in comparison with those who succeed, had a higher baseline oxygen consumption and were not able to increase their oxygen consumption in response to an increased demand.*  
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- Dexmedetomidine in the Care of Critically Ill Patients from 2001 to 2007: An Observational Cohort Study** 386  
Hannah Wunsch, Jeremy M. Kahn, Andrew A. Kramer, Gebhard Wagener, Guohua Li, Robert N. Sladen, and Gordon D. Rubenfeld  
*Dexmedetomidine remains an uncommon sedative choice in critically ill patients, with much greater use among cardiac surgery patients compared with other critically ill patients. A substantial portion of dexmedetomidine was administered outside regulatory approval guidelines.*

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Oliver Bandschapp, Joerg Filitz, Harald Ihmsen, Andreas Berset, Albert Urwyler, Wolfgang Koppert, and Wilhelm Ruppen  
*Propofol (Disoprivan<sup>®</sup>; AstraZeneca AG, Zug, Switzerland) showed short-lasting analgesic effects, whereas 10% Intralipid<sup>®</sup> (Fresenius Kabi, Stans, Switzerland), the solvent of propofol, was free of pain modulatory action.*

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Aiko Maeda, Toshihiko Katafuchi, Yugo Oba, Hiroaki Shiokawa, and Megumu Yoshimura  
*Midazolam produces extrasynaptic  $\gamma$ -aminobutyric acid currents in the substantia gelatinosa neurons, which may explain the midazolam-induced analgesia. Simultaneous application of noradrenaline further enhances midazolam-induced extrasynaptic currents by increasing extracellular  $\gamma$ -aminobutyric acid concentration.*

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Warwick D. Ngan Kee, Floria F. Ng, Kim S. Khaw, Anna Lee, and Tony Gin  
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**Anemia and Patient Blood Management in Hip and Knee Surgery: A Systematic Review of the Literature** 482

Donat R. Spahn

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