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Identification of Risky Alcohol Consumption in the Preoperative Assessment: Opportunity to Diagnose and Intervene 169
Ellen L. Burnham

■ PERIOPERATIVE MEDICINE

◆◆ **New Strategies to Detect Alcohol Use Disorders in the Preoperative Assessment Clinic of a German University Hospital** 171
Miriam J. Kip, Tim Neumann, Constanze Jugel, Robin Kleinwachter, Edith Weiss-Gerlach, Martin Mac Guill, and Claudia D. Spies

Prevalence rates of alcohol use disorders are underestimated. The computer-based assessment of the Alcohol Use Disorder Identification Test improves the detection of alcohol use disorders in busy settings. Barrier analysis is required.

◇ **Anesthetic Technique for Radical Prostatectomy Surgery Affects Cancer Recurrence: A Retrospective Analysis** 180
Barbara Biki, Edward Mascha, Denis C. Moriarty, John M. Fitzpatrick, Daniel I. Sessler, and Donal J. Buggy

Radical prostatectomy with epidural analgesia was associated with a reduction in biochemical evidence of cancer recurrence, compared with opioid analgesia. This study suggests that prospective trials of regional analgesia on prostate cancer recurrence are warranted.

◇🌐 **Reversal of Profound, High-dose Rocuronium-induced Neuromuscular Blockade by Sugammadex at Two Different Time Points: An International, Multicenter, Randomized, Dose-finding, Safety Assessor-blinded, Phase II Trial** 188
Friedrich K. Pühringer, Christopher Rex, Andreas W. Sielenkämper, Casper Claudius, Per Bo Larsen, Martine E. Prins, Matthias Eikermann, and Karin S. Khuenl-Brady

The efficacy and safety of sugammadex for the reversal of profound, high-dose rocuronium-induced neuromuscular blockade was evaluated in 176 adult patients who were randomized to receive sugammadex (2, 4, 8, 12, or 16 mg/kg) or placebo at 3 or 15 min after high-dose rocuronium (1.0 or 1.2 mg/kg). The results demonstrate that sugammadex provides a rapid and dose-dependent reversal of profound neuromuscular blockade induced by high-dose rocuronium (1.0 or 1.2 mg/kg) in adult surgical patients.

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Remifentanil Modifies the Relation of Electroencephalographic Spectral Changes and Clinical Endpoints in Propofol Anesthesia 198

Jukka Kortelainen, Miika Koskinen, Seppo Mustola, and Tapio Seppänen

This study shows that remifentanil changes the relation of timely occurrence of three different clinical endpoints and the electroencephalographic spectral behavior during propofol-induced anesthesia. The relation changes proportionally to the dose of opioids.

Droperidol and Ondansetron-induced QT Interval Prolongation: A Clinical Drug Interaction Study 206

Beny Charbit, Jean Claude Alvarez, Eric Dasque, Emuri Abe, Jean Louis Démolis, and Christian Funck-Brentano

This study, performed in healthy volunteers, shows greater QT interval prolongation with droperidol than with ondansetron, without a significant additive effect of their combination.

Low-dose Propofol-induced Amnesia Is Not due to a Failure of Encoding: Left Inferior Prefrontal Cortex Is Still Active 213

Robert A. Veselis, Kane O. Pryor, Ruth A. Reinsel, Meghana Mehta, Hong Pan, and Ray Johnson, Jr.

Propofol does not change regional cerebral blood flow measures of deep encoding in the left inferior prefrontal cortex, despite production of long-term memory deficit.

Greater Incidence of Emergence Agitation in Children after Sevoflurane Anesthesia as Compared with Halothane: A Meta-analysis of Randomized Controlled Trials 225

Norifumi Kuratani and Yumiko Oi

A meta-analysis of 23 prospective randomized controlled trials demonstrated that sevoflurane anesthesia resulted in a higher incidence of emergence agitation as compared with halothane anesthesia in children.

Neural Mechanisms of Sevoflurane-induced Respiratory Depression in Newborn Rats 233

Junya Kuribayashi, Shigeki Sakuraba, Masanori Kashiwagi, Eiki Hatori, Miki Tsujita, Yuki Hosokawa, Junzo Takeda, and Shun-ichi Kuwana

Sevoflurane decreases respiratory rate by inhibiting medullary respiratory neurons and decreases C4 burst amplitude by inhibiting phrenic motor neurons.

Inhalational Anesthetics Induce Cell Damage by Disruption of Intracellular Calcium Homeostasis with Different Potencies 243

Hui Yang, Ge Liang, Brian J. Hawkins, Muniswamy Madesh, Andrew Pierwola, and Huafeng Wei

Inhalational anesthetics induced apoptosis by transferring calcium from the endoplasmic reticulum into mitochondria *via* the cytosolic space by excessive activation of inositol 1,4,5-trisphosphate receptors on the endoplasmic reticulum membrane, but with significantly different potencies.

■ **CRITICAL CARE MEDICINE**

Successful Transtracheal Lung Ventilation Using a Manual Respiration Valve: An *In Vitro* and *In Vivo* Study 251

Konrad Meissner, Thomas Iber, Jan-Patrick Roesner, Christian Mutz, Hans-Erich Wagner, Christina Layher, Utz Bartels, Matthias Gründling, Taras I. Usichenko, Michael Wendt, Christian Lehmann, and Dragan Pavlovic

In this study, the Venturi effect was applied to transtracheal ventilation using a simple bidirectional manual respiration valve and a 16-gauge cannula *in vitro* and in an animal model with obstructed upper airway.

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Effects of Heme Oxygenase 1 on Brain Edema and Neurologic Outcome after Cardiopulmonary Resuscitation in Rats 260

Bing Zhang, Xia Wei, Xiaoguang Cui, Tsutomu Kobayashi, and Wenzhi Li

Induction of heme oxygenase 1 by hemin reduces brain edema in the early phases, improves neurologic function, and protects neurons against apoptosis in the hippocampal CA1 region in an asphyxial cardiac arrest model in rats.

Lung Injury after *In Vivo* Reperfusion: Outcome at 27 Hours after Reperfusion 269

Idit Matot, Sharon Einav, Carolyn F. Weiniger, Ron G. Pearl, Rinat Abramovitch, Balachandra V. Joshi, and Kenneth A. Jacobson

Apoptosis is an early and short-term event that occurs only in the reperfused lung. Reperfusion for longer periods is characterized by sustained inflammation and worsening of edema formation; both occur also in the nonischemic lung.

■ **PAIN MEDICINE**

◆ **Randomized Placebo-controlled Study Evaluating Lateral Branch Radiofrequency Denervation for Sacroiliac Joint Pain** 279

Steven P. Cohen, Robert W. Hurley, Chester C. Buckenmaier III, Connie Kurihara, Benny Morlando, and Anthony Dragovich

This randomized controlled study evaluating sacroiliac joint radiofrequency denervation provides preliminary evidence that the procedure may provide intermediate-term pain relief and functional improvement in carefully selected patients.

◆ **Morphine *versus* Mexiletine for Treatment of Postamputation Pain: A Randomized, Placebo-controlled, Crossover Trial** 289

Christopher L. Wu, Shefali Agarwal, Prabhav K. Tella, Brendan Klick, Michael R. Clark, Jennifer A. Haythornthwaite, Mitchell B. Max, and Srinivasa N. Raja

Sustained-release morphine, but not mexiletine, attenuated postamputation pain and was associated with a higher incidence of side effects.

Experimental Forearm Immobilization in Humans Induces Cold and Mechanical Hyperalgesia 297

Astrid J. Terkelsen, Flemming W. Bach, and Troels S. Jensen

Four weeks of forearm immobilization caused transient changes in skin temperature, mechanosensitivity, and thermosensitivity, without alteration in sympathetically mediated vascular tone.

⊕ **Enhancement of Spinal *N*-Methyl-D-aspartate Receptor Function by Remifentanil Action at δ -Opioid Receptors as a Mechanism for Acute Opioid-induced Hyperalgesia or Tolerance** 308

Min Zhao and Daisy T. Joo

Electrophysiologic studies show a rapid prolonged enhancement of *N*-methyl-D-aspartate receptor responses during and after remifentanil exposure that is concentration dependent at a clinically relevant range and due to the activation of δ -opioid receptors.

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■ REVIEW ARTICLES

Temperature Monitoring and Perioperative Thermoregulation 318

Daniel I. Sessler

This article reviews perioperative temperature monitoring and the effects of anesthetic drugs on body temperature control.

◇ **Regulation of Apoptotic and Inflammatory Cell Signaling in Cerebral Ischemia: The Complex Roles of Heat Shock Protein 70** 339

Rona G. Giffard, Ru-Quan Han, John F. Emery, Melissa Duan, and Jean Francois Pittet

Heat shock protein 70 is induced in cells by stress but is also released from cells. Intracellular and extracellular heat shock protein 70 have distinct roles as survival proteins and modulators of the immune response.

■ CASE REPORT

Procaine Spinal Neurotoxicity 349

Michael E. Johnson and Jerry W. Swanson

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