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<i>Nina C. Weber, Jennis Kandler, Wolfgang Schlack, Yvonne Grueber, Jan Fräßdorf, and Benedikt Preckel</i>	
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<i>Ayuk A. Anderson, Rosemary L. Brown, Brenda Polster, Neil Pollock, and Kathryn M. Stowell</i>	
A novel mutation in the type 1 ryanodine receptor gene was identified in postmortem tissue from individuals with anesthesia-induced malignant hyperthermia crises causing death. This mutation was biochemically characterized using B lymphocytes from family members.	

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- ◇ Refers to This Month in Anesthesiology
- ◆ Refers to Editorial Views

- See Web Site enhancement
- CME** CME Article

Desflurane but Not Sevoflurane Impairs Airway and Respiratory Tissue Mechanics in Children with Susceptible Airways

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Britta S. von Ungern-Sternberg, Sonja Saudan, Ferenc Petak, Zoltan Hantos, and Walid Habre

Sevoflurane exerted mild bronchodilation in children with and without bronchial hyperreactivity, whereas desflurane markedly impaired airway and tissue mechanics, particularly in children with airway susceptibilities.

Effect of Dexmedetomidine on Cerebral Blood Flow Velocity, Cerebral Metabolic Rate, and Carbon Dioxide Response in Normal Humans

225

John C. Drummond, Andrew V. Dao, David M. Roth, Ching-Rong Cheng, Benjamin I. Atwater, Anushirvan Minokadeh, Leonardo C. Pasco, and Piyush M. Patel

In healthy volunteers, dexmedetomidine reduced cerebral blood flow and cerebral metabolic rate with preservation of their ratio, suggesting intact coupling. The slope of the arterial carbon dioxide tension–cerebral blood flow relation was reduced.

Attenuation of the 40-Hertz Auditory Steady State Response by Propofol Involves the Cortical and Subcortical Generators

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Gilles Plourde, Alfonso Garcia-Asensi, Steven Backman, Alain Deschamps, Daniel Chartrand, Pierre Fiset, and Terence W. Picton

The cortical and brainstem cerebral generators of the 40-Hz auditory steady state response are similarly attenuated during propofol anesthesia. This suggests that the response depends on reciprocal excitation between cortical and subcortical sources.

LABORATORY INVESTIGATIONS

Postconditioning Prevents Reperfusion Injury by Activating δ -Opioid Receptors

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Youngho Jang, Jinkun Xi, Huihua Wang, Robert A. Mueller, Edward A. Norfleet, and Zhelong Xu

Postconditioning protects rat hearts from reperfusion injury by modulating the mitochondria permeability transition pore opening through activation of δ -opioid receptors.

The Common Inhalational Anesthetic Isoflurane Induces Apoptosis *via* Activation of Inositol 1,4,5-Trisphosphate Receptors

251

Huafeng Wei, Ge Liang, Hui Yang, Qiujun Wang, Brian Hawkins, Muniswamy Madesh, Shouping Wang, and Roderic G. Eckenhoﬀ

Isoflurane induced apoptosis by causing excessive calcium release from the endoplasmic reticulum *via* overactivation of inositol 1,4,5-trisphosphate receptors. Neurons with a presenilin-1 mutation and knocked-in Q111-Huntingtin were vulnerable to isoflurane cytotoxicity.

Inhibition of Poly(Adenosine Diphosphate–Ribose) Polymerase Attenuates Ventilator-induced Lung Injury

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Rosanna Vaschetto, Jan W. Kuiper, Shyh Ren Chiang, Jack J. Haitsma, Jonathan W. Juco, Stefan Uhlig, Frans B. Plötz, Francesco Della Corte, Haibo Zhang, and Arthur S. Slutsky

Mechanical ventilation after acute respiratory distress syndrome is associated with inflammatory responses, and inhibition of poly(adenosine diphosphate–ribose) polymerase enzyme attenuated ventilator-induced lung injury and kidney failure by reducing inflammation.

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Propofol Restores Brain Microvascular Function Impaired by High Glucose *via* the Decrease in Oxidative Stress

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Katsutoshi Nakahata, Hiroyuki Kinoshita, Toshiharu Azma, Naoyuki Matsuda, Keiko Hama-Tomioka, Masanori Haba, and Yoshio Hatano

Clinically relevant concentrations of propofol ameliorate neuronal nitric oxide synthase-dependent dilation impaired by high glucose in the cerebral parenchymal arterioles *via* the decrease in superoxide levels.

Concentration–Effect Relations, Prediction Probabilities (P_k), and Signal-to-noise Ratios of Different Electroencephalographic Parameters during Administration of Desflurane, Isoflurane, and Sevoflurane in Rats

276

Harald Ihmsen, Michael Schywalsky, Regina Plettke, Michael Priller, Florian Walz, and Helmut Schwilden

If modified for spikes and burst suppression, median frequency and spectral edge frequency as well as the unmodified approximate entropy were able to assess the anesthetic effect of desflurane, isoflurane, and sevoflurane in rats.

■ PAIN AND REGIONAL ANESTHESIA

◆ A Randomized, Double-masked, Multicenter Comparison of the Safety of Continuous Intrathecal Labor Analgesia Using a 28-Gauge Catheter *versus* Continuous Epidural Labor Analgesia

286

Valerie A. Arkoosh, Craig M. Palmer, Esther M. Yun, Shiv K. Sharma, James N. Bates, Richard N. Wissler, Jodie L. Buxbaum, Wallace M. Nogami, and Edward J. Gracely

Intrathecal labor analgesia *via* a 28-gauge catheter produces an incidence of neurologic complication less than 1%, and better initial pain relief and maternal satisfaction, but more technical difficulties and catheter failures compared with epidural analgesia.

◇ Quantitative Architecture of the Brachial Plexus and Surrounding Compartments, and Their Possible Significance for Plexus Blocks

299

Nizar Moayeri, Paul E. Bigeleisen, and Gerbrand J. Groen

Recent studies have shown that intraneural injection does not invariably cause neural injury. To study the brachial plexus architecture, a quantitative study of the neural components and the compartment outside the brachial plexus was made from frozen cadaver shoulders with high-resolution sagittal images using a cryomicrotome. The nonneural tissue (stroma and connective tissue) inside and outside the brachial plexus increased from proximal to distal in the shoulder. Marked differences in neural architecture and the size of surrounding adipose tissue compartments may explain why some intraneural injections do not result in neural injury.

Enhanced Peripheral Analgesia Using Virally Mediated Gene Transfer of the μ -Opioid Receptor in Mice

305

Guohua Zhang, Husam Mohammad, Brad D. Peper, Srinivasa Raja, Steven P. Wilson, and Sarah M. Sweitzer

Herpes simplex virus can be used as a strategy to increase or decrease μ -opioid receptors in primary afferent neurons, resulting in a decrease or increase in the EC_{50} for loperamide analgesia, respectively.

■ REVIEW ARTICLE

Proteomics in Neuropathic Pain Research

314

Ellen Niederberger and Gerd Geisslinger

Neuropathic pain is associated with protein modifications in the nervous system. Investigation of these changes by proteomics might deliver important information about signal transduction in neuropathy and therefore facilitate the development of novel pain therapies.

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■ CASE REPORTS

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