



Anesthesiology

The Journal of the American Society of Anesthesiologists, Inc.

American Society of Critical Care Anesthesiologists

Society for Obstetric Anesthesia and Perinatology



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■ CLINICAL INVESTIGATIONS

- ◆ **Intravenous Lidocaine Infusion Facilitates Acute Rehabilitation after Laparoscopic Colectomy** **11**

Abdourahamane Kaba, Stanislas R. Laurent, Bernard J. Detroz, Daniel I. Sessler, Marcel E. Durieux, Maurice L. Lamy, and Jean L. Joris

Patients receiving perioperative intravenous lidocaine had improved postoperative analgesia, fatigue, and bowel function after laparoscopic colectomy, and shorter hospital stays.

- ◆ **Racial Differences in the Use of Epidural Analgesia for Labor** **19**

Laurent G. Glance, Richard Wissler, Christopher Glantz, Turner M. Osler, Dana B. Mukamel, and Andrew W. Dick

Black and Hispanic women in labor are less likely than non-Hispanic white women to receive epidural analgesia. These differences remain after accounting for differences in insurance coverage, provider practice, and clinical characteristics.

- Late Psychological Symptoms after Awareness among Consecutively Included Surgical Patients** **26**

Peter Samuelsson, Lars Brudin, and Rolf H. Sandin

Only one patient with a diagnosis of post-traumatic stress disorder after awareness was found, despite average initial problems comparable with previous studies. The method for recruiting awareness cases may affect the apparent severity of late psychological symptoms significantly.

- Dreaming during Anesthesia and Anesthetic Depth in Elective Surgery Patients: A Prospective Cohort Study** **33**

Kate Leslie, Hannah Skrzypek, Michael J. Paech, Irina Kurowski, and Tracey Whybrow

The relation between dreaming during anesthesia and anesthetic depth has not been clarified. In this study, depth of anesthesia during maintenance was similar among patients reporting and not reporting dreaming. Dreaming patients tended to be younger and were more likely to be male, to have high home dream recall frequency, to receive propofol for maintenance of anesthesia, and to respond to command rapidly after anesthesia.

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Mika J. Jokinen, Pertti J. Neuvonen, Leena Lindgren, Krister Höckerstedt, Jan Sjövall, Olof Breuer, Yvonne Askemark, Jouni Ahonen, and Klaus T. Olkkola

Chronic end-stage liver disease decreases mean ropivacaine clearance by 60%. This should be considered if repeated doses or continuous infusion is to be used.

A Randomized Crossover Comparison of the Effects of Propofol and Sevoflurane on Cerebral Hemodynamics during Carotid Endarterectomy **56**

Timothy J. McCulloch, Christopher L. Thompson, and Martin J. Turner

Compared with sevoflurane, propofol resulted in an increased internal carotid artery pressure and decreased middle cerebral artery blood velocity during carotid clamping. Changing from propofol to sevoflurane led to intracerebral steal in one patient.

◇ **Family-centered Preparation for Surgery Improves Perioperative Outcomes in Children: A Randomized Controlled Trial** **65**

Zeev N. Kain, Alison A. Caldwell-Andrews, Linda C. Mayes, Megan E. Weinberg, Shu-Ming Wang, Jill E. MacLaren, and Ronald L. Blount

A family-centered behavioral preoperative preparation program decreases children's anxiety during induction of anesthesia, reduces the incidence of emergence delirium, shortens the time to discharge, and reduces analgesic requirements in the postanesthesia care unit.

Influence of "Liberal" versus "Restrictive" Intraoperative Fluid Administration on Elimination of a Postoperative Fluid Load **75**

Kathrine Holte, Robert G. Hahn, Lisbet Ravn, Kasper G. Bertelsen, Stinus Hansen, and Henrik Kehlet

Elimination of an intravenous fluid load was increased after laparoscopic cholecystectomy but independent of the amount of fluid administered intraoperatively.

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Effect of a 0.5% Dilution of Propofol on Pain on Injection during Induction of Anesthesia in Children 80

Stefan Soltész, Malte Silomon, Gerhard Gräf, Thomas Mencke, Sabiha Boulaadass, and Gerd P. Molter

Dilution of propofol to 0.5% in a medium-chain-triglyceride/long-chain-triglyceride emulsion reduces pain on injection effectively in children aged 2–6 yr.

Influence of Different Strategies of Volume Replacement on the Activity of Matrix Metalloproteinases: An *In Vitro* and *In Vivo* Study 85

Carlo A. Volta, Valentina Alvisi, Matilde Campi, Elisabetta Marangoni, Raffaele Alvisi, Massimiliano Castellazzi, Enrico Fainardi, Maria C. Manfrinato, Franco Dallochio, and Tiziana Bellini

This article describes the influence of various volume replacement solutions on metalloproteinase activity.

■ LABORATORY INVESTIGATIONS

◆ Isoflurane Provides Long-term Protection against Focal Cerebral Ischemia in the Rat 92

Hiroaki Sakai, Huaxin Sheng, Robert B. Yates, Kazuyoshi Ishida, Robert D. Pearlstein, and David S. Warner

Isoflurane, present during a severe focal ischemic injury, improved both neurologic and histologic outcome over both 2- and 8-week observation intervals, independent of ischemia duration, intraintraischemic mean arterial pressure, or treatment with mitochondrial adenosine triphosphate-sensitive K⁺ channel antagonist.

◇ Milrinone Combined with Vasopressin Improves Cardiac Index after Cardiopulmonary Resuscitation in a Pig Model of Myocardial Infarction 100

Thomas Palmaers, Sven Albrecht, Fabian Heuser, Christian Leuthold, Juergen Schuettler, and Bernd Schmitz

Milrinone and vasopressin during and after cardiopulmonary resuscitation improve cardiac index in pigs with myocardial infarction.

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- ◇ Effect of Isoflurane and Other Potent Inhaled Anesthetics on Minimum Alveolar Concentration, Learning, and the Righting Reflex in Mice Engineered to Express α_1 γ -Aminobutyric Acid Type A Receptors Unresponsive to Isoflurane **107**

James M. Sonner, David F. Werner, Frank P. Elsen, Yilei Xing, Mark Liao, R. Adron Harris, Neil L. Harrison, Michael S. Fanselow, Edmond I Eger II, and Gregg E. Homanics

α_1 -Containing γ -aminobutyric acid type A receptors are involved in the righting reflexes but do not seem to contribute to minimum alveolar concentration or amnesia.

- Determination of the EC₅₀ Amnesic Concentration of Etomidate and Its Diffusion Profile in Brain Tissue: Implications for *In Vitro* Studies **114**

Claudia Benkwitz, Mark Liao, Michael J. Laster, James M. Sonner, Edmond I Eger II, and Robert A. Pearce

Etomidate impairs contextual fear conditioning, a hippocampal-dependent learning paradigm, with an effective concentration EC_{50,amnesia} of 0.25 μ M. Corresponding concentrations are achieved in 400- μ m-thick brain slices by equilibrating for more than an hour.

- Inhalation of the Phosphodiesterase-3 Inhibitor Milrinone Attenuates Pulmonary Hypertension in a Rat Model of Congestive Heart Failure **124**

Thomas Hentschel, Ning Yin, Alexander Riad, Helmut Habbazettl, Jörg Weimann, Andreas Koster, Carsten Tschöpe, Hermann Kuppe, and Wolfgang M. Kuebler

This study evaluates the use of inhaled milrinone, a phosphodiesterase-3 inhibitor, in an experimental rat model of hypertensive heart failure. Inhaled milrinone selectively decreased right ventricular afterload and may therefore present a new treatment strategy in pulmonary venous hypertension.

- Novel Starches: Single-dose Pharmacokinetics and Effects on Blood Coagulation **132**

Caveh Madjdpour, Caroline Thyges, Thierry Buclin, Philippe Frascarolo, Inès von Roten, Andreas Fisch, Marc Burmeister, Thomas Bombeli, and Donat R. Spahn

Carboxymethylated starches exhibit longer intravascular persistence and slower fragmentation compared with conventional hydroxyethyl starch. This is associated with a stronger impairment of blood coagulation.

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Sevoflurane Breakdown Produces Flammable Concentrations of Hydrogen 144

Marshall B. Dunning III, Lynn E. Bretscher, Shahbaz R. Arain, Yanina Symkowski, and Harvey J. Woehlck

Up to 3 moles of hydrogen can be produced from each mole of sevoflurane that is broken down by desiccated absorbent. Maximal production occurs at or above 300°C.

■ PAIN AND REGIONAL ANESTHESIA

Determination of the Full Dose-Response Relation of Intrathecal Bupivacaine, Levobupivacaine, and Ropivacaine, Combined with Sufentanil, for Labor Analgesia 149

Marc Van de Velde, Rebekka Dreelinck, Jasperina Dubois, Ariane Kumar, Jan Depreest, Liesbeth Lewi, and Eugene Vandermeersch

The current study compared the full dose-response curves of intrathecal bupivacaine, levobupivacaine, and ropivacaine, all combined with sufentanil, for analgesia during labor. Bupivacaine was found to be significantly more potent than both S-enantiomer drugs, which were found to be equipotent.

■ ECONOMICS

Automated Documentation Error Detection and Notification Improves Anesthesia Billing Performance 157

Stephen F. Spring, Warren S. Sandberg, Shaji Anupama, John L. Walsh, William D. Driscoll, and Douglas E. Raines

The authors developed computer software to automatically detect and alert clinicians to documentation errors in their electronic anesthesia records that prevented submitting a bill for their work. This software significantly reduced both the time required to correct documentation errors and the number of records that could never be billed because documentation errors remained uncorrected beyond the contractual time limits.

■ REVIEW ARTICLE

CME Diagnosis and Treatment of Vascular Air Embolism 164

Marek A. Mirski, Abhijit Vijay Lele, Lunei Fitzsimmons, and Thomas J. K. Toung

This review of vascular air embolism provides a summary of the etiologies of, risk factors for, and treatment options for this paroxysmal event. An algorithmic approach is presented for assessing the relative risk of vascular air embolism, and logical suggestions for the appropriate level of monitoring and possible preventive and therapeutic strategies are detailed.

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Japanese Anesthesiology** **178**
Shigemasa Ikeda

The Unitarian Service Committee's Medical Mission to Japan in 1950 fostered the development of modern anesthesiology in Japan. The impact of the program on Japanese anesthesiology is the subject of this article.

■ CLASSIC PAPERS REVISITED

- 🌐 An Early Example of Evidence-based Medicine: Hypoxemia
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Frederick W. Cheney

This article is a revisiting of original material published as: Fink BR: Diffusion anoxia. ANESTHESIOLOGY 1955; 16:511-4.

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