

Anesthesiology

The Journal of the American Society of Anesthesiologists, Inc.

CONTENTS

23A ■ HIGHLIGHTS

■ CLINICAL INVESTIGATIONS

813 The Pharmacokinetics and Hemodynamic Effects of Intravenous and Intramuscular Dexmedetomidine Hydrochloride in Adult Human Volunteers

J. B. Dyck, M. Maze, C. Haack, L. Vuorilehto, and S. L. Shafer

Hemodynamic changes are seen acutely following intravenous dexmedetomidine administration but not for several hours after intramuscular injection of the α_2 agonist.

821 Computer-controlled Infusion of Intravenous Dexmedetomidine Hydrochloride in Adult Human Volunteers

J. B. Dyck, M. Maze, C. Haack, D. L. Azarnoff, L. Vuorilehto, and S. L. Shafer

Improvement in the accuracy of computer-controlled infusion of dexmedetomidine requires further study based on targeted concentration.

829 Neurologic Changes during Carotid Endarterectomy under Cervical Block Predict a High Risk of Postoperative Stroke

Michael J. Davies, Patricia H. Mooney, David A. Scott, Brendan S. Silbert, and Russell J. Cook

Patients displaying neurologic changes during carotid endarterectomy under cervical plexus block have a sixfold increase in the chance of developing postoperative stroke.

834 Effect of Phenylephrine Bolus Administration on Global Left Ventricular Function in Patients with Coronary Artery Disease and Patients with Valvular Aortic Stenosis

Axel W. Goertz, Karl H. Lindner, Christian Seefelder, Uwe Schirmer, Michael Beyer, and Michael Georgieff

Bolus administration of phenylephrine to patients with coronary artery disease causes transient impairment of left ventricular global function, but this effect is not seen in patients with valvular aortic stenosis.

CONTENTS

- 842 Plasma Concentration of Fentanyl, with 70% Nitrous Oxide, to Prevent Movement at Skin Incision**
Peter S. A. Glass, Maureen Doherty, James R. Jacobs, David Goodman, and L. Richard Smith
-
- Pharmacodynamic comparisons between opioids can be performed once the Cp50 has been established and effect site equilibration has occurred.
-
- 848 Improved Noninvasive Diagnostic Testing for Malignant Hyperthermia Susceptibility from a Combination of Metabolites Determined *In Vivo* with ³¹P-Magnetic Resonance Spectroscopy**
Jean-François Payen, Jean-Luc Bosson, Lionel Bourdon, Claude Jacquot, Jean-François Le Bas, Paul Stieglitz, and Alim-Louis Benabid
-
- Phosphorus magnetic resonance spectroscopy could be used to screen noninvasively for malignant hyperthermia susceptibility.
-
- 856 Leg Heat Content Continues to Decrease during the Core Temperature Plateau in Humans Anesthetized with Isoflurane**
Kumar Belani, Daniel I. Sessler, Andrew M. Sessler, Marc Schroeder, Joseph McGuire, Benjamin Merrifield, Denna E. Washington, and Azita Moayeri
-
- By assessing leg heat content, this study found that thermoregulatory vasoconstriction produced a reduction in the rate of core cooling and maintenance of core temperature despite a continually decreasing body heat content.
-
- 864 Isoflurane Minimum Alveolar Concentration Reduction by Fentanyl**
A. I. McEwan, C. Smith, O. Dyar, D. Goodman, L. R. Smith, and P. S. A. Glass
-
- The plasma concentrations of fentanyl required to reduce isoflurane MAC by 50%, 63%, and 82% are 1.6 ng/ml, 3 ng/ml, and 10 ng/ml, respectively.
-
- 870 Intrathecal Sufentanil for Labor Analgesia: Effects of Added Epinephrine**
William R. Camann, Beth H. Minzter, Roger A. Denney, and Sanjay Datta
-
- The addition of epinephrine to sufentanil did not prolong the duration of sufentanil analgesia but increased the incidence of nausea and decreased the incidence and severity of pruritis.

Continued on page 13A

CONTENTS

875 Laparoscopy Explosion Hazards with Nitrous Oxide

*George G. Neuman, George Sidebotham, Eduard Negoianu,
Jeffrey Bernstein, Aaron F. Kopman, Robert G. Hicks, Stanley T. West,
and Laurence Haring*

It is possible for sufficient nitrous oxide to diffuse into the peritoneal cavity during laparoscopic surgery to support combustion of bowel gas in the event of a bowel perforation.

880 The Effectiveness of Pressure Support Ventilation for Mechanical Ventilatory Support in Children

Hiroaki Tokioka, Minoru Kinjo, and Masahisa Hirakawa

Pressure support ventilation reduced the work of breathing and was found to be an effective method of postoperative ventilatory support in children.

885 Transmucosal Administration of Midazolam for Premedication of Pediatric Patients: Comparison of the Nasal and Sublingual Routes

Helen W. Karl, James L. Rosenberger, Marilyn G. Larach, and Joan M. Ruffle

Pediatric patients accepted sublingual midazolam better than intranasal midazolam as a preanesthetic sedative.

■ LABORATORY INVESTIGATIONS

892 Effects of General Anesthetics on Intercellular Communications Mediated by Gap Junctions between Astrocytes in Primary Culture

Jean Mantz, Jocelyne Cordier, and Christian Giaume

General anesthetics were found to differentially affect gap junction permeability in cultured mouse striated astrocytes and might contribute to the mechanism of action by altering astrocyte communication.

902 Effect of Intracerebroventricular Picrotoxin and Muscimol on Intravenous Bupivacaine Toxicity: Evidence Supporting Central Nervous System Involvement in Bupivacaine Cardiovascular Toxicity

Christopher M. Bernards and Alan A. Artru

Bupivacaine cardiovascular toxicity is caused partially by the actions of the drug on the central nervous system.

911 Inhibitory Effects of Bupivacaine and Lidocaine on Adrenergic Neuroeffector Junctions in Rat Tail Artery

James F. Szocik, Charles A. Gardner, and R. Clinton Webb

In adult rat tail arteries, lidocaine and bupivacaine depress adrenergic transmission; bupivacaine is the more potent inhibitor of the two anesthetics.

CONTENTS

- 918 Anesthetic Cutoff in Cycloalkanemethanols: A Test of Current Theories**
Douglas E. Raines, Santiago E. Korten, W. Adam G. Hill, and Keith W. Miller
 Using cycloalkanemethanols to produce anesthesia in tadpoles, molecular length does not correlate with anesthetic cutoff.
- 928 Inhibition by Enflurane of Baroreflex Mediated Mesenteric Venoconstriction in the Rabbit Ileum**
Anna Stadnicka, Thomas A. Stekiel, Zeljko J. Bosnjak, and John P. Kampine
 Enflurane affects reflex control of capacitance veins by inhibition of sympathetic efferent activity.
- 937 The Influence of Cryogenic Brain Injury on Nociception in the Rat**
David P. Archer and Naaznin Samanani
 Reductions in anesthetic requirements in the brain-injured rat may be caused by alterations in nociception.
- 945 The Influence of Intravascular Volume Expansion on Cerebral Blood Flow and Blood Volume in Normal Rats**
Michael M. Todd, Julie B. Weeks, and David S. Warner
 In normal rats, acute nondilutional volume expansion does not affect cerebral blood flow but does cause increases in cardiac output, central venous pressure, and cerebral blood volume.
- 954 Effects of Lidocaine on Intracellular Ca^{2+} and Tension in Airway Smooth Muscle**
Tetsuya Kai, Junji Nishimura, Sei Kobayashi, Shosuke Takahashi, Jun-ichi Yoshitake, and Hideo Kanaide
 Lidocaine directly relaxes airway smooth muscle by decreasing intracellular Ca^{2+} concentration.
- 966 Effect of Vecuronium-induced Neuromuscular Blockade on Cortical Motor Evoked Potentials**
Tod B. Sloan and Ralph Erian
 Neuromuscular blockade does not significantly affect the evoked muscle response to transcranial magnetic stimulation if the degree of blockade is not extreme.

Continued on page 17A

CONTENTS

■ LABORATORY REPORT

974 Evaluation of a New Fluid Warmer Effective at Low to Moderate Flow Rates

Robert G. Presson, Jr., Alexander P. Bezruczko, Simon C. Hillier, and William L. McNiece

A new fluid warmer, the Hotline[®], is more effective than conventional dry-wall warmers at flow rates of less than 6,000 ml/h for saline and 3,000 ml/h for blood.

■ CASE REPORTS

981 Motor Paralysis of the Lower Extremities Following Lumbar Sympathetic Block

Winston C. V. Parris and Howard S. Kirshner

983 Digitally Assisted Tracheal Intubation in a Neonate with Pierre Robin Syndrome

Paul T. Sutura and Gregory J. Gordon

985 Tolerance to Isoflurane during Prolonged Administration

John H. Arnold, Robert D. Truog, and Joyce A. Molengraft

■ CORRESPONDENCE

989 Safe Nasogastric Tube Placement in a Patient with a Basal Skull Fracture

Eugene G. Lipov and Mitchel B. Sosis

989 Epidural *Versus* Intravenous Fentanyl

Raymer P. Grant, Jon A. Harper, and David G. Parsons

990 Reply *Alan N. Sandler and Joel Katz*

991 The Lazarus Phenomenon Revisited

Jack G. Bray, Jr.

991 Is Nitroglycerin a Myocardial Depressant?

Tai-Shion Lee, Yishan Xie, and Yue-Ping Fan

992 Reply *Michael K. Cahalan and Michel Balea*

993 Regional Anesthesia for Arteriovenous Fistula

David O. Yablok

994 Laryngeal Mask Airway and Difficult Intubation

J. R. Maltby and S. G. Neil

995 Reply *Jonathan L. Benumof*

Continued on page 19A

CONTENTS

- 995 Left Bronchial Intubation by the Laryngectomy Tube
Anis Baraka, Samar Jabbour, and Paula Rizkallah
- 996 Heart Block after Methylmethacrylate Cementing
Joseph Mirenda and Gregory Broyles
- 996 Reply *Charles B. Hantler and David W. Learned*
- 997 Electrocardiographic Changes during Cesarean Section
Bruce Kleinman
- 998 Reply *Joseph P. Mathew and Lee A. Fleisher*
- 999 ■ BOOK REVIEWS

GUIDE FOR AUTHORS

The Guide for Authors is published in the January and July issues. Please refer to the Guide for the preparation of any material for submission to ANESTHESIOLOGY.

ANESAV is a code word ("coden") used by the Chemical Abstract Service to identify the journal.