

Anesthesiology

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Tony L. Yaksh

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534 Intrathecal and Epidural Somatostatin for Patients with Cancer: Analgesic Effects and Postmortem Neuropathologic Investigations of Spinal Cord and Nerve Roots

Peter Mollenholt, Narinder Rawal, Torsten Gordh, Jr., and Yngve Olsson

Terminal cancer patients whose pain is not relieved by opioid analgesics can receive effective pain management with intrathecal and epidural somatostatin.

543 Multisite Evaluation of a Continuous Intraarterial Blood Gas Monitoring System

C. Phillip Larson, Jr., Jeffrey Vender, and Adam Seiver

Continuous intraarterial blood gas monitoring provides immediate blood gas results demonstrating sufficient agreement with *in vitro* analyses to be useful for decision-making in most clinical circumstances.

553 Rapid Estimation of Left Ventricular Contractility from End-Systolic Relations by Echocardiographic Automated Border Detection and Femoral Arterial Pressure

John Gorcsan III, Andre Denault, Thomas A. Gasior, William A. Mandarino, Mary Jean Kancel, Lee G. Deneault, Brack G. Hattler, and Michael R. Pinsky

Left ventricular contractility can be estimated rapidly from end-systolic relations using femoral arterial pressure and transesophageal echocardiographic automated border detection measures of ventricular cavity area.

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563 Effects of Halothane and Isoflurane on Ventilation and Occlusion Pressure

Jaume Canet, Joaquín Sanchis, Albert Zegrí, Covadonga Llorente, Daniel Navajas, and Pere Casan

Halothane induces significantly less central ventilatory depression than does isoflurane at 1.2 and 2.0 MAC as reflected by higher values of inspiratory occlusion pressure and minute ventilation and lower end-tidal carbon dioxide.

572 A Single Dose of Morphine Sulfate Increases the Incidence of Vomiting after Outpatient Inguinal Surgery in Children

Michael S. Weinstein, Susan C. Nicolson, and Mark S. Schreiner

Children who received intravenous morphine in a dose of 0.1 mg/kg experienced more than twice the incidence of vomiting in the first 24 h following inguinal hernia repair than did children who received placebo with or without ketorolac rescue.

578 Comparison of Arterial Tonometry with Radial Artery Catheter Measurements of Blood Pressure in Anesthetized Patients

Lawrence C. Siegel, John G. Brock-Utne, and Jay B. Brodsky

When compared with intraarterial blood pressure measurement, the accuracy of arterial tonometry for individual measurement is inferior to oscillometry alone, but the ability to rapidly detect significant changes of blood pressure is enhanced by the reduced interval between measurements.

585 Neuromuscular Effects of Rocuronium on the Diaphragm and Adductor Pollicis Muscles in Anesthetized Patients

Jean Paul Cantineau, Frederic Porte, Gilles d'Honneur, and Philippe Duvaldestin

The ED₉₅ of rocuronium is greater and recovery from neuromuscular block occurs sooner at the diaphragm compared to the adductor pollicis muscle; 0.6 mg/kg rocuronium may not completely paralyze the diaphragm.

591 Hemodynamic and Analgesic Profile after Intrathecal Clonidine in Humans: A Dose-Response Study

Kriton S. Filos, Leonidas C. Goudas, Ourania Patroni, and Vassiliki Polyzou

Intrathecal clonidine at doses of up to 450 µg produces dose-dependent analgesia and sedation in healthy young women following cesarean section, while hemodynamic stability is observed with increasing doses.

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602 Transesophageal Echocardiographic Monitoring of Preoperative Acute Hypervolemic Hemodilution

Marc E. R. M. van Daele, Ad Trouwborst, Liesbeth C. S. M. van Woerkens, Rob Tenbrinck, Alan G. Fraser, and Jos R. T. C. Roelandt

Preoperative acute hypervolemic hemodilution for the reduction of blood cell loss during intraoperative bleeding is well tolerated by patients without heart disease.

610 Analysis of Statistical Tests to Compare Doses of Analgesics among Groups

Franklin Dexter

Mann-Whitney and Kruskal-Wallis are the best statistical tests to determine whether an intervention significantly affects the doses of analgesics given to two or more groups of patients.

616 Pharmacokinetics of Intravenous Milrinone in Patients Undergoing Cardiac Surgery

James M. Bailey, Jerrold H. Levy, Mutsuhito Kikura, Fania Szlam, and Carl C. Hug, Jr.

A milrinone dose of 50 $\mu\text{g}/\text{kg}$ with an infusion of 0.5 $\mu\text{g} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ maintains therapeutic concentrations in excess of 100 ng/ml in patients undergoing cardiac surgery.

623 Effects of Etanolone on Cerebral Blood Flow and Metabolism in Healthy Volunteers

Jørgen Wolff, Peder Carl, Peter Bo Hansen, Steffen Høgskilde, Mogens S. Christensen, and Mogens B. Sørensen

Etanolone, a new steroid anesthetic agent, produces a 34% reduction in cerebral blood flow and a similar decrease in cerebral oxygen consumption when administered to healthy volunteers.

628 End-tidal Sevoflurane Concentrations for Laryngeal Mask Airway Insertion and for Tracheal Intubation in Children

Masakazu Taguchi, Seiji Watanabe, Nobuaki Asakura, and Shinichi Inomata

End-tidal concentrations of sevoflurane for laryngeal mask insertion and tracheal intubation were $2.00 \pm 0.28\%$ and $2.83 \pm 0.34\%$, respectively, in children.

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■ LABORATORY INVESTIGATIONS

632 Pulmonary Vasoregulation by Arginine Vasopressin in Conscious, Halothane-anesthetized, and Pentobarbital-anesthetized Dogs with Increased Vasomotor Tone

Gregory A. Trempey, Daniel P. Nyhan, and Paul A. Murray

The pulmonary vasodilator response to arginine vasopressin measured in chronically instrumented conscious dogs with elevated vasomotor tone is reversed to vasoconstriction or abolished during halothane and pentobarbital anesthesia.

641 Interaction between Halothane and the Nonadrenergic, Noncholinergic Inhibitory System in Porcine Trachealis Muscle

Karen S. Lindeman, Stuart G. Baker, and Carol A. Hirshman

Halothane ($\leq 1.0\%$) neither enhanced nor attenuated nonadrenergic, noncholinergic inhibitory responses in airway smooth muscle *in vitro*.

649 Effect of Halothane on Large-conductance Calcium-dependent Potassium Channels in Cerebrovascular Smooth Muscle Cells of the Rat

Yan Hong, Ernest Pull, and David A. Mathers

Halothane in clinically relevant concentrations suppresses the open probability of large-conductance, calcium-dependent K^+ channels in rat cerebrovascular smooth muscle cells.

657 Concentration Dependence of Lidocaine-induced Irreversible Conduction Loss in Frog Nerve

Cedric R. Bainton and Gary R. Strichartz

Lidocaine induces an irreversible loss of impulse activity in frog nerve in a progressive fashion with increasing drug concentration, beginning at about 40 mM ($\sim 1.0\%$).

668 Effects of Halothane on Surfactant Biosynthesis by Rat Alveolar Type II Cells in Primary Culture

Serge Mollieux, Bruno Crestani, Bertrand Dureuil, Jean Bastin, Corinne Rolland, Michel Aubier, and Jean-Marie Desmonts

Halothane decreases the biosynthesis of pulmonary surfactant by ATII cells in primary culture and alters the high-energy phosphate metabolism of these cells.

677 Potentiation of the Analgesic Properties of Fentanyl-like Opioids with α_2 -Adrenoceptor Agonists in Rats

Theo F. Meert and Marc De Kock

α_2 Agonists potentiate fentanyl-like opioid in rats relatively independently of the route of administration.

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Katsuya Mikawa, Nobuhiro Maekawa, Kahoru Nishina, Yumiko Takao, Hideaki Yaku, and Hidefumi Obara
 Intravenous lidocaine had a prophylactic effect on endotoxin-induced lung injury in rabbits.
- 700** **Mechanisms of Action of Enflurane on Vascular Smooth Muscle: Comparison of Rabbit Aorta and Femoral Artery**
J. Y. Su, Y. I. Chang, and L. J. Tang
 Enflurane enhances tension development in aorta and relaxes it in femoral artery precontracted with norepinephrine; however, enflurane has similar cellular mechanisms of action: decreased Ca^{2+} influx *via* the sarcolemma, decreased Ca^{2+} uptake, and increased Ca^{2+} release from the sarcoplasmic reticulum.
- 710** **Clonidine Has Comparable Effects on Spontaneous Sympathetic Activity and Afferent A δ - and C-Fiber-mediated Somatosympathetic Reflexes in Dogs**
Chen Wang, Michael G. Knowles, Mihir K. Chakrabarti, and James G. Whitwam
 Clonidine administered intrathecally and intravenously depresses spontaneous sympathetic outflow and evoked nociceptive reflexes, but intrathecal clonidine has little effect on reflexes evoked *via* descending efferent pathways.
- 718** **Direct Myocardial Effects of Halothane and Isoflurane: Comparison between Adult and Infant Rabbits**
Barbara W. Palmisano, Robert W. Mehner, David F. Stowe, Zeljko J. Bosnjak, and John P. Kampine
 The newborn heart is less sensitive to direct depression of heart rate by halothane and isoflurane but more sensitive to depression of contraction/relaxation and AV conduction by halothane.
- 730** **The Neurophysiologic Mechanisms of Tourniquet Pain: The Activity of Neurons in the Rostroventral Medulla in the Rat**
James C. Crews, Mark Cahall, and Michael M. Behbehani
 A nociceptive response to maintenance of tourniquet inflation in the rat is characterized by changes in cell firing rate in rostroventral medullary neurons independent of changes in blood pressure, supporting the utility of this model in the investigation of the neurophysiologic and neuropharmacologic mechanisms of tourniquet pain.

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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.

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