

Anesthesiology

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- 1321 Perioperative Ulnar Neuropathy: Are We Ready for Shortcuts?

Robert A. Caplan, Karen L. Posner, and Frederick W. Cheney

■ CLINICAL INVESTIGATIONS

- 1324 Preoperative Myocardial Cell Damage in Patients with Unstable Angina Undergoing Coronary Artery Bypass Graft Surgery

H. Mächler, H. Metzler, K. Sabin, M. Anelli-Monti, P. Rehak, B. Rigler, and H. Gombotz

Many patients with unstable angina undergoing elective coronary artery bypass graft surgery have increased troponin-T levels preoperatively, indicating some degree of ischemic myocardial cell damage.

- 1332 Ulnar Neuropathy: Incidence, Outcome, and Risk Factors in Sedated or Anesthetized Patients

Mark A. Warner, Mary E. Warner, and John T. Martin

In this 35-yr retrospective study of more than one million surgical patients, persistent ulnar neuropathy occurring in the perioperative period was associated with several patient characteristics, especially male gender and extremes of body habitus, and for more than half of the patients with this problem, symptoms were initially noted more than 24 h after the completion of their procedures.

- 1341 Clonidine and Lidocaine Inhibition of Isoflurane-induced Tachycardia in Humans

Satoru Tanaka, Hideaki Tsuchida, Hitoshi Namba, and Akiyoshi Namiki

Clonidine premedication and nasally administered lidocaine significantly blunt the tachycardia induced during isoflurane anesthesia administered *via* mask.

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- 1350** Fentanyl, Esmolol, and Clonidine Blunt the Transient Cardiovascular Stimulation Induced by Desflurane in Humans
Richard B. Weiskopf, Edmond I. Eger II, Mariam Noorani, and Malcolm Daniel
- Intravenous fentanyl (1.5 and 4.5 $\mu\text{g}/\text{kg}$), intravenous esmolol (0.75 mg/kg), and oral clonidine (4.3 $\mu\text{g}/\text{kg}$) blunt the transient cardiovascular stimulation induced by a rapid increase in desflurane to a concentration greater than 1 MAC.
- 1356** Alterations in Temporal Patterns of Heart Rate Variability after Coronary Artery Bypass Graft Surgery
Charles W. Hogue, Jr., Phyllis K. Stein, Ioanna Apostolidou, Demetrios G. Lappas, and Robert E. Kleiger
- Compared with measurements obtained preoperatively and after induction of anesthesia and compared with those measured postoperatively in nonthoracic vascular surgical patients, heart rate variability is reduced after uncomplicated coronary artery bypass graft surgery.
- 1365** Bispectral Analysis of the Electroencephalogram Correlates with Patient Movement to Skin Incision during Propofol/Nitrous Oxide Anesthesia
Lee A. Kears, Jr., Paul Manberg, Nassib Chamoun, Fred deBros, and Alan Zaslavsky
- Bispectral analysis of the electroencephalogram correlates with patient movement in response to skin incision during propofol/nitrous oxide anesthesia.
- 1371** An Intrathecal Fentanyl Dose-Response Study in Lower Extremity Revascularization Procedures
Scott S. Reuben, Steven M. Dunn, Karen Marie Duprat, and Patricia O'Sullivan
- Intrathecal fentanyl (40 μg) has an onset of 3–4 min and a duration of analgesia of approximately 5 h when given postoperatively to elderly patients undergoing lower extremity revascularization.
- 1376** Postdural Puncture Headache and Spinal Needle Design: Metaanalyses
S. Halpern and R. Preston
- Postdural puncture headache is significantly reduced when noncutting needles are used rather than cutting needles.

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1384 Hemodynamic Response to Induction and Intubation: Propofol/Fentanyl Interaction

V. Billard, F. Moulla, J. L. Bourgain, A. Megnigbeto, and D. R. Stanski

The hemodynamic changes after induction with fentanyl/propofol, before and after intubation, are not modified by a propofol dose range of 2–3.5 mg/kg and are nonlinearly related to fentanyl doses of 2 or 4 µg/kg.

1394 Antagonism of Mivacurium-induced Neuromuscular Blockade in Humans: Edrophonium Dose Requirements at Threshold Train-of-Four Count of 4

Aaron F. Kopman, Moin U. Mallhi, Mona D. Justo, Paul Rodricks, and George G. Neuman

Edrophonium (0.3 mg/kg), administered at a threshold train-of-four (TOF) count of 4, accelerates return to a TOF ratio of ≥ 0.70 by 7–8 min; increasing the dose to 0.75 mg/kg does not significantly improve recovery.

1401 Flow Velocity Measurements as an Index of Cerebral Blood Flow: Validity of Transcranial Doppler Sonographic Monitoring during Cardiac Surgery

Andreas Weyland, Heidrun Stephan, Stephan Kazmaier, Wolfgang Weyland, Bernd Schorn, Frank Grüne, and Hans Sonntag

Transcranial Doppler sonographic measurements of middle cerebral artery flow velocity do not predict individual changes in cerebral blood flow during cardiac surgery; in particular, hypothermic cardiopulmonary bypass seems to alter the relationship between flow and flow velocity in basal cerebral arteries.

1411 Thermoregulatory and Anesthetic-induced Alterations in the Differences among Femoral, Radial, and Oscillometric Blood Pressures

James M. Hynson, Daniel I. Sessler, Azita Moayeri, and Jeffrey A. Katz

Thermoregulatory and anesthetic-induced alterations in upper extremity blood flow produce clinically significant changes in the relationships between femoral, radial, and oscillometric blood pressure measurements.

■ LABORATORY INVESTIGATIONS

1422 Dexmedetomidine Decreases Seizure Threshold in a Rat Model of Experimental Generalized Epilepsy

Marek A. Z. Mirski, Lisa Ann Rossell, Robert W. McPherson, and Richard J. Traystman

Dexmedetomidine decreases the seizure threshold in the pentylenetetrazol chemical model of generalized seizures *via* its agonist action at the α_2 -receptor.

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1429 Electrophysiologic Analysis of Preemptive Effects of Spinal Opioids on N-methyl-D-aspartate Receptor-mediated Events

Victoria Chapman, Jane E. Haley, and Anthony H. Dickenson

Preemptive administration of intrathecal opioids partially inhibited NMDA receptor-mediated response to peripheral formalin injection in rats.

1436 Isoflurane Inhibits Hypoxic Pulmonary Vasoconstriction: An *In Vivo* Fluorescence Microscopic Study in Rabbits

Joachim Groh, Gerhard E. H. Kuhnle, Axel Sckell, Ludwig Ney, and Alwin E. Goetz

Isoflurane inhibits constriction of pulmonary arterioles and reduction of microvascular blood flow in response to hypoxia.

1445 Hyperventilation in the Treatment of Metabolic Acidosis Does Not Adversely Affect Pulmonary Gas Exchange

Karen B. Domino and Michael P. Hlastala

Hyperventilation to restore blood pH to normal during metabolic acidosis did not adversely affect pulmonary gas exchange in dogs with permeability pulmonary edema.

1454 Epidural Anesthesia Modifies the Cardiovascular Response to Marked Hypercapnia in Dogs

Keizo Shibata, Akira Futagami, Yasunori Taki, and Tsutomu Kobayashi

The increase in cardiac output associated with marked hypercapnia was abolished by lumbar epidural anesthesia, whereas with thoracic or thoracolumbar epidural anesthesia, hypercapnia depressed cardiac output as well as the mean arterial blood pressure.

1461 Effects of Isoflurane and Hypothermia on Glutamate Receptor-mediated Calcium Influx in Brain Slices

Phillip E. Bickler, Leslie T. Buck, and Bonnie M. Hansen

Isoflurane, at clinically relevant concentrations, reduces the activity of cortical glutamate receptors and the severity of key pathologic events during simulated ischemia.

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- 1470** Dose-dependent Effects of Halothane on the Carbon Dioxide Responses of Expiratory and Inspiratory Bulbospinal Neurons and the Phrenic Nerve Activities in Dogs
Eckehard A. E. Stuth, Mislav Tonkovic-Capin, John P. Kampine, Jurica Bajic, and Edward J. Zuperku
 Central carbon dioxide drive for breathing is depressed by halothane to a much greater degree at the level of the phrenic motor neurons than at the level of the inspiratory and expiratory brain stem premotor neurons, where it is relatively well preserved.
- 1484** Anesthetic Depression of Spinal Motor Neurons May Contribute to Lack of Movement in Response to Noxious Stimuli
Bryan S. King and Ira J. Rampil
 Surgical immobility, a component of the general anesthetic state, may be mediated by spinal motor neuron depression.
- 1493** Intrathecal Magnesium Sulfate Protects the Spinal Cord from Ischemic Injury during Thoracic Aortic Cross-clamping
Joseph I. Simpson, Thomas R. Eide, Gerald A. Schiff, John F. Clagnaz, Imtiaz Hossain, Alex Tverskoy, and Greg Koski
 Intrathecal magnesium given before thoracic aortic cross-clamping protects against spinal cord ischemia in a canine model.
- 1500** Effects of Isoflurane on Ouabain Toxicity in Canine Purkinje Fibers: Comparison with Halothane
John D. Gallagher
 In canine cardiac Purkinje fibers, isoflurane and halothane were equally effective at reducing delayed afterdepolarizations and abolishing triggered activity after intracellular Na^+ and Ca^{2+} overload was induced by ouabain poisoning.
- 1511** Does the Brain Influence Somatic Responses to Noxious Stimuli during Isoflurane Anesthesia?
Michael Borges and Joseph F. Antognini
 Selective delivery of isoflurane to the torso while brain isoflurane is 0.2–0.3% results in a 40% reduction in minimum alveolar concentration.

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- 1516** Metabolism of Glucose, Glycogen, and High-energy Phosphates during Complete Cerebral Ischemia: A Comparison of Normoglycemic, Chronically Hyperglycemic Diabetic, and Acutely Hyperglycemic Nondiabetic Rats

Stephen R. Wagner IV and William L. Lanier

During complete cerebral ischemia, diabetic and glucose-infused hyperglycemic rats had similar patterns of glucose and glycogen consumption and lactate accumulation; however, in both groups, lactate accumulation was greater and high-energy phosphate depletion was less than in normoglycemic rats.

- 1527** Perturbation of Ion Channel Conductance Alters the Hypnotic Response to the α_2 -Adrenergic Agonist Dexmedetomidine in the Locus Coeruleus of the Rat

Carla Nacif-Coelho, Christiane Correa-Sales, Louise Lenoir Chang, and Mervyn Maze

Alterations in conductance through voltage-gated calcium and potassium channels in the locus coeruleus play a role in the hypnotic response to the α_2 -adrenergic agonist dexmedetomidine.

■ CASE REPORTS

- 1535** Electrical Seizures during Sevoflurane Anesthesia in Two Pediatric Patients with Epilepsy

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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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