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Parental Presence and a Sedative Premedicant for Children Undergoing Surgery: A Hierarchical Study

Zeev N. Kain, Linda C. Mayes, Shu-Ming Wang, Lisa A. Caramico, Dawn M. Krivutza, and Maura B. Hofstadter

Parental presence during induction of anesthesia has no additive anxiolytic effects for children who receive a sedative preoperatively. Parents who accompany their sedated children into the operating room, however, are less anxious and more satisfied with the separation process and the overall anesthetic, nursing, and surgical care provided.

The Effect of Anesthetic Technique on Postoperative Outcomes in Hip Fracture Repair

Dorene A. O'Hara, Amy Duff, Jesse A. Berlin, Roy M. Poses, Valerie A. Lawrence, Elizabeth C. Huber, Helaine Noveck, Brian L. Strom, and Jeffrey L. Carson

The authors evaluated the impact of anesthetic choice on 6,206 patients undergoing general anesthesia and on 3,219 patients undergoing regional anesthesia for hip fracture repair and found no difference in postoperative mortality and morbidity.

Cost-effectiveness of Prophylactic Antiemetic Therapy with Ondansetron, Droperidol, or Placebo

Robert P. Hill, David A. Lubarsky, Barbara Phillips-Bute, Jennifer T. Fortney, Mary R. Creed, Peter S. A. Glass, and Tong J. Gan

It is less costly to administer a prophylactic antiemetic to patients at high risk for postoperative nausea and vomiting undergoing day surgery compared with placebo, followed by rescue antiemetic therapy, if needed.

α2-Adrenergic Receptors in Human Dorsal Root Ganglia: Predominance of α2β and α2c Subtype mRNAs

Rita R. S. Ongjoco, Charlene D. Richardson, Xiaowen L. Rudner, Mark Stafford-Smith, and Debra A. Schwinn

The authors evaluated α2AR subtype expression in human dorsal root ganglia using competitive RT-PCR and found that α2β and α2c subtype mRNAs predominate.
The Incidence and Mechanisms of Pharyngeal and Upper Esophageal Dysfunction in Partially Paralyzed Humans: Pharyngeal Videoradiography and Simultaneous Manometry after Atracurium

Eva Sundman, Hanne Witt, Rolf Olsson, Olle Ekberg, Richard Kuylenstierna, and Lars I. Eriksson

Partial paralysis causes delayed initiation of the swallowing reflex and impaired pharyngeal muscle function and coordination, leading to a four- to fivefold increase in the incidence of pharyngeal dysfunction and penetration of bolus to the larynx.

Reliability of Pharmacodynamic Analysis by Logistic Regression: A Computer Simulation Study

Wei Lu and James M. Bailey

The error in estimation of C50 in typical anesthesia studies may be as high as 30–40%, and the estimation of the slope of the concentration-effect relation may be much higher, when data from multiple patients is naively pooled.

Pharmacokinetics and Arteriovenous Differences in Clevidipine Concentration following a Short- and a Long-term Intravenous Infusion in Healthy Volunteers

Hans Ericsson, Ulf Bredberg, Ulf Eriksson, Åse Jolin-Meilgård, Margareta Nordlander, and Carl G. Regårdh

Clevidipine is a high-clearance drug with a small volume of distribution, resulting in short half-lives in healthy subjects. During ongoing infusion, the arterial clevidipine concentration remains approximately twice as high as the venous level after attainment of steady states in the two blood pools.

A Dose-ranging Study of Rapacuronium in Pediatric Patients

George H. Meakin, Olli A. Meretoja, Johann Motsch, Tomi Taivainen, Kari Wirtavuori, Rüdiger Schönstedt, Russell Perkins, and Anthony McCluskey

Rapacuronium can produce satisfactory conditions for intubation at 60 s in infants and children when given in doses of 1.5 and 2.0 mg/kg, respectively. It is an effective and well-tolerated short-duration nondepolarizing muscle relaxant in infants and children.
Maximum Tolerated Dose of Nalmefene in Patients Receiving Epidural Fentanyl and Dilute Bupivacaine for Postoperative Analgesia

Thomas B. Dougherty, Vivian H. Porche, and Peter F. Thall

The maximum tolerated dose of nalmefene was determined by the recently developed modified continuous reassessment method to be 0.50 μg/kg in patients receiving epidural fentanyl and 0.075% bupivacaine for postoperative analgesia.

Investigation of Effective Anesthesia Induction Doses Using a Wide Range of Infusion Rates with Undiluted and Diluted Propofol

Tomiei Kazama, Kazuyuki Ikeda, Koji Morita, Mutsuhito Kikura, Takehiko Ikeda, Tadayoshi Kurita, and Shigehito Sato

There is a lag between the injection of propofol and loss of consciousness, and, depending on the rate of administration, excess drug may be present in the peripheral and central circulation when induction is complete. This study evaluated the effects of different infusion rates and concentrations of propofol on time to unconsciousness and hemodynamic side effects. The relation between induction dose and infusion rate is complex, but hypotension could be attenuated by the use of diluted propofol.

Memory Formation during General Anesthesia for Emergency Cesarean Sections

Gitta H. Lubke, Chantal Kerssens, Raphael Y. Gershon, and Peter S. Sebel

Explicit and implicit memory was investigated in patients undergoing emergency cesarean sections. Hypnotic state was monitored using the bispectral index (BIS) during word presentation. Memory performance was tested with a word-stem completion test using the process dissociation procedure.

Prophylactic Ondansetron in Prevention of Postoperative Nausea and Vomiting following Pediatric Strabismus Surgery: A Dose–Response Study

Senthilkumar Sadhasivam, Dilip Shende, and Rashmi Madan

The clinical usefulness of prophylactic ondansetron in the prevention of postoperative nausea and vomiting in children after strabismus repair was evaluated in this dose–response study using therapeutic and true outcome measures. Prophylactic ondansetron at a dose of 75 μg/kg is as effective as 150 μg/kg, and its routine use is justified in solving this “big little” problem.
Plasma Concentration of Fentanyl with Xenon to Block Somatic and Hemodynamic Responses to Surgical Incision

Yoshinori Nakata, Takahisa Goto, Hayato Saito, Yoshihiko Ishiguro, Katsuo Terui, Hiromasa Kawakami, Yoshihiko Tsuruta, Yoshinari Niimi, and Shigeho Morita

The concentration of fentanyl to prevent a somatic response to skin incision in 50% of patients in the presence of 0.7 minimum alveolar concentration xenon was 0.72 ± 0.07 ng/ml, and to prevent a hemodynamic response was 0.94 ± 0.06 ng/ml (mean ± SD).

Both EMLA and Placebo Cream Reduced Pain during Extracorporeal Piezoelectric Shock Wave Lithotripsy with the Piezolith 2300

Thara Tritrakarn, Jariya Lertakyamanee, Pisamorn Koompong, Suchai Soontrapa, Pradit Somprakit, Anupan Tantiwong, and Sunee Jittapapai

Eutectic mixture of local anesthetic and placebo creams under occlusive dressing functioned as a coupling medium and reduced pain during extracorporeal piezoelectric shock wave lithotripsy.

LABORATORY INVESTIGATIONS

Contrasting Synaptic Actions of the Inhalational General Anesthetics Isoflurane and Xenon

Sara L. M. de Sousa, Robert Dickinson, William R. Lieb, and Nicholas P. Franks

Isoflurane and xenon have very different effects on γ-aminobutyric acid-mediated (GABAergic) and glutamatergic synaptic transmission. Isoflurane affects both inhibitory and excitatory synapses; xenon only affects the N-methyl-D-aspartate receptor component of excitatory synapses.

Effects of Intravenous Anesthetic Agents on Glutamate Release: A Role for GABAergic Receptor-Mediated Inhibition

Donal J. Buggy, Beverley Nicol, David J. Rowbotham, and David G. Lambert

Thiopental, propofol and ketamine inhibit K⁺-evoked glutamate release. The inhibition produced by thiopental and propofol is reversed by bicuculline, suggesting an interaction of GABAergic and glutamatergic transmission in anesthesia.

Continued on page 19A
Mechanisms of Nonimmunological Histamine and Tryptase Release from Human Cutaneous Mast Cells

Mette Veien, Fania Szlam, Jeannine T. Holden, Koji Yamaguchi, Donald D. Denson, and Jerrold H. Levy

Tryptase and histamine both are released during nonimmunologic cutaneous mast cell activation.

Attenuation of Ascending Nociceptive Signals to the Rostroventromedial Medulla Induced by a Novel α\textsubscript{2}-Adrenoceptor Agonist, MPV-2426, following Intrathecal Application in Neuropathic Rats

Antti Pertovaara and Hong Wei

A novel α\textsubscript{2}-adrenoceptor agonist, MPV-2426, attenuated ascending nociceptive signals in neuropathic and non-neuropathic animals as a result of action on spinal α\textsubscript{2} adrenoceptors. The antinociceptive effect of MPV-2426 was spatially more restricted than that of dexmedetomidine, the reference α\textsubscript{2} adrenoceptor agonist of this study.

Volatile Anesthetics Differentially Affect Immunostimulated Expression of Inducible Nitric Oxide Synthase: Role of Intracellular Calcium

Klaus Tschaikowsky, Jörg Ritter, Klaus Schröppel, and Matthias Kühn

Halothane, enflurane, isoflurane, and desflurane time- and dose-dependently modulate gene expressions of inducible nitric oxide synthase in macrophages stimulated by lipopolysaccharide and γ-interferon. Evidence for the involvement of intracellular calcium mobilization in the expression of inducible nitric oxide synthase and the inhibitory effect of volatile anesthetics is presented.

Direct Coronary Vasomotor Effects of Sevoflurane and Desflurane in In Situ Canine Hearts

George J. Crystal, Xiping Zhou, Juozas Gurevicius, Edward A. Czinn, M. Ramez Salem, Syed Alam, Agnieszka Piotrowski, and Guochang Hu

Intracoronary administration of sevoflurane and desflurane have comparable coronary vasodilative effect in in situ canine hearts. The ATP-sensitive potassium channels play a prominent role in these effects.
Comparison of Volatile Anesthetic Effects on Actin-Myosin Cross-bridge Cycling in Neonatal versus Adult Cardiac Muscle

Yedatore S. Prakash, Mark J. Cody, James D. Hannon, Philippe R. Housmans, and Gary C. Sieck

The greater sensitivity of the neonatal rat myocardium to volatile anesthetics is found to be partly attributable to an interference with actin-myosin cross-bridge interactions, the effects being more pronounced with halothane, compared with sevoflurane.

Antiallodynic Effect of Intrathecal Gabapentin and Its Interaction with Clonidine in a Rat Model of Postoperative Pain

Jen-Kun Cheng, Hui-Lin Pan, and James C. Eisenach

Intrathecal gabapentin produces dose-dependent antiallodynia in a rat model of postoperative hypersensitivity and interacts synergistically with intrathecal clonidine in this action. Unlike studies in cell culture, intrathecal gabapentin in vivo does not depend on \textit{l}-amino acid transporters for its effect.

Mechanisms of Ventricular Arrhythmias Induced by Myocardial Contusion: A High-resolution Mapping Study in Left Ventricular Rabbit Heart

Emmanuelle Robert, Jean E. de La Coussaye, Antoine G. M. Aya, Jean-Pierre Bertinchant, Anne Polge, Pascale Fabbro-Pèray, Christine Pignodel, and Jean-Jacques Elejajm

Direct myocardial contusion of isolated rabbit heart is responsible for arrhythmia. The main mechanism of arrhythmia is based on reentrant circuit around a fixed obstacle induced by the impact.

Subunit-dependent Inhibition of Human Neuronal Nicotinic Acetylcholine Receptors and Other Ligand-gated Ion Channels by Dissociative Anesthetics Ketamine and Dizocilpine

Tomohiro Yamakura, Laura E. Chavez-Noriega, and R. Adron Harris

Human neuronal nicotinic acetylcholine receptors expressed in Xenopus oocytes are inhibited by anesthetic concentrations of dissociative anesthetics ketamine and dizocilpine in a subunit-dependent manner.
Blockade of Adenosine Triphosphate-sensitive Potassium Channels by Thiamylal in Rat Ventricular Myocytes

Yasuo Tsutsumi, Shuzo Oshita, Hiroshi Kitahata, Yasuhiro Kuroda, Takashi Kawano, and Yutaka Nakaya

Thiamylal inhibits the adenosine triphosphate-sensitive potassium channel activities without affecting channel conductances in cell-attached and inside-out patch-clamp configurations in single rat myocytes during simulated ischemia.

ECONOMICS

Modeling the Uncertainty of Surgical Procedure Times: Comparison of Log-normal and Normal Models

David P. Strum, Jerrold H. May, and Luis G. Vargas

It is shown empirically that the log-normal distribution is superior to the normal for estimating surgical procedure times and current reasons goodness-of-fit tests might reject the log-normal model when, in fact, it should be retained.

SPECIAL ARTICLE


The American Society of Anesthesiologists present a practice advisory for the prevention of perioperative peripheral neuropathies.

CLINICAL CONCEPTS AND COMMENTARY

Real-time Intraoperative Monitoring of Myocardial Ischemia in Noncardiac Surgery

Lee A. Fleisher

Electrocardiography, echocardiography, and pulmonary pressure monitoring all offer means of detecting myocardial ischemia in real time. The sensitivity and specificity of each of these monitoring methods are discussed, with an emphasis on the appropriate application of technology.

CASE REPORTS

Bilateral Lower Extremity Compartment Syndromes following Prolonged Surgery in the Low Lithotomy Position with Serial Compression Stockings

Michael H. Verdolin, Arthur S. Toth, and Rebecca Schroeder

Pregnant Patient with Primary Pulmonary Hypertension: Inhaled Pulmonary Vasodilators and Epidural Anesthesia for Cesarean Delivery

Branko M. Weiss, Marco Maggiorini, Rolf Jenni, Urs Lauper, Vladimir Popov, Thomas Bombeli, and Donat R. Spahn

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GUIDE FOR AUTHORS

The Guide for Authors is published in the January, April, July, and October issues. It may be found on page 1216 of this issue.

WEB SITE ANNOUNCEMENT

Full-text articles are now available on-line at www.anesthesiology.org

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