

## *Journal-related and Other Special Activities at the 2006 American Society of Anesthesiologists Annual Meeting*

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### **15th Annual Journal Symposium: Postoperative Cognitive Dysfunction**

**Tuesday, October 17, 2006, 8:00 AM to 11:00 AM, in Room E450a, McCormick Place, Chicago, Illinois**

The 15th Annual ANESTHESIOLOGY Journal Symposium examines what has come to be known as "Postoperative Cognitive Dysfunction." The idea that surgery and anesthesia may somehow lead to a deterioration in cognitive function (e.g., memory, executive function, decision making, intelligence?) has attracted a great deal of attention in both the scientific literature and the lay press. Initially thought to be limited to procedures performed with cardiopulmonary bypass, more recent work has suggested that the problem may be much more common, particularly in the elderly, and may occur after a wide variety of surgical procedures. However, there are probably more questions than answers. What constitutes postoperative cognitive dysfunction (POCD)? How do we detect it? Typically, POCD is defined as a postoperative decrease in a patient's score on one or more neuropsychological tests (as compared with scores on the same tests given preoperatively). But what test or tests should be used (there are literally hundreds of different tests available), and how much of a decrease is significant or clinically meaningful? When should testing be done? What represents an appropriate control group? If POCD is "real," what is its etiology? Is it due to anesthesia? Do anesthetics have some persistent effect on the central nervous system? Does the choice of anesthetic or the doses used matter? Might POCD be related to physiologic changes that occur during or after surgery (hypotension, hypoxia) or to the surgical trauma itself (and the subsequent inflammatory changes)? Might it be related to the disease that required surgical treatment in the first place? Does it occur in truly "normal" patients, or only in patients with some underlying but perhaps undetectable cognitive disorder?

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Presentations at the Symposium by our invited lecturers, as well as interactive discussion among authors of the selected scientific posters, will address many of these questions regarding POCD. The Symposium will be facilitated by Drs. Michael Todd, Editor-in-Chief of the Journal, and Mervyn Maze, one of the Journal's Editors. The three invited speakers include

- Lars S. Rasmussen, M.D., Ph.D., Associate Professor, Department of Anesthesia, Centre of Head and Orthopaedics, Copenhagen University Hospital, Copenhagen, Denmark: "An Overview of Postoperative Cognitive Dysfunction in Noncardiac Surgery: An Investigator's Perspective"
- Stanton P. Newman, D.Phil., Professor and Director, Center for Behavioral and Social Science in Medicine, Royal Free and University College of London Medical School, London, England: "Findings and Methods in the Assessment of Postoperative Cognitive Dysfunction in Noncardiac Surgery"
- Mark F. Newman, M.D., Merel H. Harmel Professor of Anesthesiology, Chief, Division of Anesthesiology Cardiac Service, Chair, Department of Anesthesiology, Duke University Medical Center, Durham, North Carolina: "Postoperative Cognitive Dysfunction following Cardiac Surgery: Etiology and a Comparison with Noncardiac Surgery"

These lectures will be accompanied by the presentation of nine posters selected for their relevance to the Symposium topic. The text for each abstract can be found on the American Society of Anesthesiologists (ASA) Abstract Web site or in the CD-ROM that is included with this issue of the Journal.

"17 $\beta$ -Estradiol Fails to Provide Neuroprotection during Cardiac Surgery" by Charles W. Hogue, Kelly Grogan, David Dixon, Betsy Thomas, Kenneth Schechtman. Johns Hopkins University Medical School, Baltimore, Maryland [A1174]

"Postoperative Cognitive Dysfunction: A Role for Cytokine-mediated Inflammation in the Hippocampus" by Jing Xu, Yanje Wen, Mario Cibelli, Daqing Ma, Mervyn Maze. Imperial College London, Chelsea and Westminster Hospital, London, United Kingdom, and Kuli Hospital, Pudong, Shanghai, China [A1175]

"Improvement of Cognitive Function and Long-term Potentiation after Isoflurane Anesthesia in Mice" by Laura K. Starker, Rainer Haseneder, Gerhard Rammes, Eberhard F. Kochs, Manfred Blobner. Klinikum Rechts der

Isar, Technische Universitaet Muenchen, Munich, Germany [A1176]

“Is the definition of POCD relevant for patients with mild cognitive impairment?” by Jeffrey H. Silverstein, Abraham Reichenberg, Lars S. Rasmussen, Philip D. Harvey. Mount Sinai School of Medicine, New York, New York [A1177]

“Cerebral Inflammatory Reaction and Neurocognitive Performance after Cardiopulmonary Bypass in Rats” by Kristine Kellermann, Bettina Jungwirth, Manfred Blobner, Burkhard Mackensen, Eberhard F. Kochs. Klinikum Rechts der Isar, TU Muenchen, Munich, Bavaria, Germany [A1178]

“Postoperative Cognitive Dysfunction in Elderly Patients with a History of Alcohol Abuse” by Judith A. Hudetz, Zafar Iqbal, Sweeta D. Gandhi, Kathleen Patterson, David C. Warltier. Medical College of Wisconsin and VA Medical Center, Milwaukee, Wisconsin [A1179]

“Effects of Isoflurane Anesthesia on Cognitive Performance in a Mouse Model of Alzheimer’s Disease” by Jasmin Berkmann, Laura K. Starker, Barbara Eckel, Eberhard F. Kochs, Manfred Blobner. Klinikum Rechts der Isar, TU Muenchen, Muenchen, Germany [A1180]

“Cognitive Deterioration following Major Surgery or Major Illness” by Leif Saager, Kara Barnett, Andrea Vanucci, Ramesh Ramaiah, Michael Avidan. Washington University in St. Louis, St. Louis, Missouri [A1181]

“Nitrous Oxide Decreases Cortical Methionine Synthase and Produces Lasting Memory Impairment in Rats” by Deborah J. Culley, Sumati V. Raghavan, Rustam Y. Yukhananov, Mostafa Waly, Gregory Crosby. Harvard Medical School, Brigham and Women’s Hospital, Boston, Massachusetts [A1182]

### ASCCA/Journal Abstract Session: Critical Care Research

**Monday, October 16, 2006, 9:00 AM to 11:00 AM, in Room E258, McCormick Place, Chicago, Illinois**

The ASA Annual Meeting will again feature a track devoted to critical care medicine. As part of this mini-symposium, the American Society of Critical Care Anesthesiologists (ASCCA) and ANESTHESIOLOGY will jointly sponsor an abstract session. The session will highlight the diverse nature of investigation in critical care and will include clinical and “bench” research studies ranging from innate immunity, resuscitation fluids, and heat shock proteins to delirium in trauma and surgical patients.

A total of eight abstracts will be presented in a 2-h poster discussion format. Each presenter will have 5 min to present the poster; 10 min will then be devoted to questions and discussion. The text for each abstract can be found on the ASA Abstract Web site or in the CD-ROM that is included with this issue of the Journal.

“Cardiomyocyte-Specific Overexpression of eNOS Prevents Myocardial Dysfunction in Murine Sepsis” by Fumito

Ichinose, Emmanuel S. Buys, Thomas G. Neilan, Marielle Scherrer-Crosbie, Kenneth D. Bloch. Massachusetts General Hospital, Boston, Massachusetts. Cardiomyocyte-specific overexpression of eNOS prevented endotoxin-induced myocardial dysfunction and death by enhancing myofilament sensitivity to calcium, possibly *via* reduction of cardiac oxidative stress. [A764]

“Heat Shock Protein 70 Induced by Glutamine Improves Vascular Hyporeactivity in Septic Shock Rats” by Liang Jing, Qiong Wu. Southeast University Affiliated ZhongDa Hospital, Nanjing, Jiangsu, China. The expression of heat shock protein 70 induced by glutamine effectively improves  $\alpha$ -adrenergic receptor-mediated vascular reactivity in LPS shock rats, partially through reducing inflammatory cytokine release and peroxide biosynthesis in LPS shock. [A765]

“Effects of Propofol on Toll like Receptor 4 Signal Pathway in Alveolar Macrophages Induced by LPS” by Yong-wang Li, Shu-qin Gao, Bao-guo Wang. Beijing Tiantan Hospital, Affiliate of Capital University of Medical Sciences, Beijing, China. The exposure of propofol in therapeutic concentrations to alveolar macrophages inhibited the lipopolysaccharide-induced toll like receptor 4 signal pathway. [A766]

“15-Deoxy- $\Delta^{12,14}$ -prostaglandin $_2$  Reduces Pulmonary Inflammation in Endotoxemic Rats” by Dong Liu, Bang Xiong Zeng, Shi Hai Zhang, Shang Long Yao, Zhi Long Geng. Lanzhou General Hospital of P.L.A., Lanzhou, Gansu, China. 15-Deoxy- $\Delta^{12,14}$ -prostaglandin $_2$  (15d-PG $_2$ ) is an agonist of peroxisome proliferator-activated receptor $\gamma$  (PPAR $\gamma$ ) and reduces LPS-induced pulmonary inflammation in rats by inhibiting NF- $\kappa$ B and upregulation of heme oxygenase-1. [A767]

“Hyperthermic Preconditioning Combined with LL-37 Therapy Improves the Outcome in Septic Rats” by Alexander Torossian, Eugeniu Gurschi, Robert Bals, Hinnerk Wulf, Artur Bauhofer. University Hospital Marburg, Marburg, Germany. Hyperthermic preconditioning (41°C) combined with antimicrobial (LL-37) therapy significantly improved survival after abdominal sepsis in the rat. This was associated with significantly reduced pro-inflammatory cytokines. [A768]

“Pro-apoptotic gene silencing in septic mouse aorta by small interfering RNA” by Naoyuki Matsuda, Mitsuaki Yamazaki, Yuichi Hattori. Toyama University School of Medicine, Toyama, Japan. Endothelial injury in sepsis induced by cecal ligation and puncture was significantly improved by gene silencing of caspase-3 and -8 using sirnas. [A769]

“Effects of Ethyl Pyruvate on Intercellular Adhesion Molecule-1 in Sepsis-induced Acute Lung Injury” by Lian Zeng, Jingchen Liu, Jingxi Pan, Yehua Cai. The First Affiliated Hospital, Guangxi Medical University, Nanning, Guangxi, China. Treatment with ethyl pyruvate prevented upregulation of lung ICAM-1 expression and increases in lung leukocyte influx and lung per-

meability. These data suggest that ethyl pyruvate ameliorates sepsis-induced acute lung injury in rats. [A770] "Prevalence, Risk Factors and Outcomes Associated with Delirium in Surgical and Trauma ICU Patients" by Pratik Pandharipande, Sean Costabile, Miranda Fraley, Jennifer Thompson, E. Wesley Ely. Vanderbilt University Medical Center, Nashville, Tennessee. Delirium is present in 70% of ventilated trauma and surgical ICU patients and is associated with worse outcomes. Exposure to sedatives and analgesics appear to be independent risk factors for the development of delirium. [A771]

We believe this is an exciting program that highlights some of the most important aspects of research into critical illness. This session is part of a track devoted to critical care. The entire track, comprising Plenary Lectures, Refresher Courses, Point-Counterpoint Debates, Abstract Presentations, and Panel Discussions, promises to be educational and entertaining.

### **SOAP/Journal Abstract Session: Basic Mechanisms Underlying Our Routine Daily Practices of Obstetric Anesthesia**

**Monday, October 16, 2006, 2:00 PM to 4:00 PM, in Room E258, McCormick Place, Chicago, Illinois**

The 2006 Annual Meeting of the American Society of Anesthesiologists in Chicago, Illinois, will feature the 3rd special research session jointly sponsored by the Society for Obstetric Anesthesia and Perinatology (SOAP) and ANESTHESIOLOGY. ANESTHESIOLOGY has been the official journal of SOAP since 1999, and this special session, held in 2003 and 2005, is one example of the mutually beneficial collaboration between organizations. The early success of these sessions in highlighting important obstetric anesthesia research at the ASA Annual Meeting and rapid publication of several of the presentations in a special section of ANESTHESIOLOGY resulted in the decision to sponsor this special session every year rather than every other year.

The session this year will focus on clinical studies that underline the routine practice of obstetric anesthesia and its scientific basis. Six excellent clinical studies will be featured that have the potential to impact the routine practice of obstetric anesthesiology.

Imaging is moving to the forefront in teaching and performance of regional anesthesia as well as advancing our understanding of neural and cardiovascular physiology, and obstetric anesthesia is no exception. The first two abstracts utilize imaging, one using ultrasound to help determine landmarks for epidural needle insertion and the other using magnetic resonance imaging to define the degree of uterine displacement required to minimize aortocaval compression. Although current ultrasound technology does not allow for precise visualization of the epidural space such as it does for many peripheral nerves for regional anesthesia, this ab-

stract demonstrates its utility in defining dorsal spinous processes, the midline, and location of interspaces. As our patients continue to grow in size, palpation for these structures becomes less reliable, and it is quite conceivable that we may be sharing the obstetricians' machines in the future! The other imaging study provides important and confirmatory evidence that more than just a little tilt is necessary to treat aortocaval compression.

Two studies examine pain medicine, one defining a novel pain scale for use during labor and the other describing the effect of spinal drug treatment on hypersensitivity after cesarean section. John Farrar, M.D. (Department of Neurology, University of Pennsylvania, Philadelphia, Pennsylvania), has been at the forefront of redefining the utility of pain scales and change in their values with treatment in acute, perioperative, and chronic pain patients. The presentation in this session describes a new pain scale that may more accurately reflect the unique pain characteristics of labor pain, with the hope to provide a more useful measure of efficacy of various treatments. Chronic pain after surgery is emerging as a major public health concern and research focus, and the presentation in this session uses the provocative surrogate endpoint of area of hyperalgesia after surgery (cesarean delivery) as a tool to monitor efficacy of intraoperative and postoperative treatment to reduce such chronic pain. Perhaps we are moving to a preemptive approach to chronic, rather than acute pain!

The last two studies examine labor analgesia, one comparing efficacy of combined spinal-epidural and epidural techniques, and the other defining the effects of genetic differences in opioid receptors which affect the potency of spinal fentanyl for labor analgesia. The role of analgesic technique on the rate of cervical dilatation and progress of labor is a recent research focus, and the presentation in this session examines the effect of combined spinal-epidural with epidural analgesia on the labor process. Finally, in the latest of a series of groundbreaking studies from the Landau-Smiley team, common differences in gene expression for the  $\mu$ -opioid receptor explain a remarkable large difference in the effective dose of intrathecal fentanyl for labor analgesia.

The SOAP/ANESTHESIOLOGY session will consist of oral presentations followed by questions and discussions, led by a distinguished panel of moderators. Following are the titles, authors, and a brief description of each presentation. Please join us for what should prove to be a fascinating session.

"Ultrasound and the Identification of Lumbar Intervertebral Spaces in the Parturient" by Robert J. Whitty, Michael F. Moore, Alison Macarthur. Mount Sinai, Toronto, Ontario, Canada. Because the fetus precludes the use of radiologic assistance to identify bony structures during epidural and spinal placement, anesthesiologists perform these techniques simply by "feel



and experience.” Technological advances in ultrasound, however, offer a potential tool to safely visualize the structures of the lumbar spine. The current study examines the success rate of identifying lumbar interspaces during lumbar epidural catheter placement utilizing ultrasound technology. [A994]

“Effects of Lateral Tilt on Caval Compression during Pregnancy: An MRI Study” by Jerome Giwer, Malek Tebach, Pierre-Yves Dewandre, Jean-Pierre Schaaps, Jean François Brichant. CHR de la Citadelle, CHU Liege, Liege, Belgium. Although lateral tilt is almost universally recommended in an attempt to minimize compression in the inferior vena cava by the uterus when a parturient lies in the recumbent position, the ideal degree of tilt remains unknown. The current study documents MRI estimations of inferior vena caval cross-sectional area in four positions: supine, 16° tilt, 26° tilt, and left lateral positioning. [A995]

“The New Labor Pain Scale: Description & Properties” by Pamela J. Angle, Alexander Kiss, Jennifer Yee, Rose Kung, David Streiner. Sunnybrook and Women’s College Health Sciences Center, Toronto, Ontario, Canada. Parturients typically rate labor pain using an 11-point verbal or visual scale anchored by 0 = no pain and 10 = the worst pain imaginable. The current study explores the use of a patient questionnaire to establish a novel 26-item scale based on the New Labor Pain Scale. [A996]

“Postoperative Analgesic and Antihyperalgesic Effects of Spinal Clonidine for Cesarean Section” by Patricia M. Lavand’homme, Fabienne Roelants, Valérie Fuzier-Mercier, Hilde Waterloos. St. Luc Hospital-UCL, Brussels, Belgium. Although the mechanisms for the development of chronic pain following cesarean section remain poorly understood, ongoing studies are attempting to identify potential risk factors. The current study examines the role of intrathecal clonidine in preventing the development of mechanical hyperalgesia and residual pain following cesarean section. [A997]

“Combined Spinal-Epidural *versus* Epidural Analgesia in Multiparous Women” by Stephanie R. Goodman, Richard M. Smiley, Maria A. Negron, Paula A. Freedman, Ruth Landau. Columbia University, New York, New York. Whether parturients receiving CSE analgesia require fewer anesthesia administered top-up boluses or have a reduction in the length of labor from spinal injection until delivery remains controversial. The current study examines the use of top-up boluses and the duration of labor in multiparous patients administered CSE analgesia in early labor. [A998]

“Effect of  $\mu$ OR A118G Polymorphism on ED<sub>50</sub> of Spinal Fentanyl: A Random Allocation Dose-finding Study” by Ruth Landau, Christian Kern, Richard M. Smiley, Malachy O. Columb, Jean-Louis Blouin. University Hospital of Geneva, Geneva, Switzerland. Estimations of the ED<sub>50</sub> of intrathecal fentanyl that produce labor anal-

gesia vary, and the ideal methodology to make these estimations remains controversial. The current study explores the possibility that genetic variations significantly affect the amount of intrathecal fentanyl required to produce 60 min of labor analgesia. [A999]

### **3rd Annual Plenary Lecture: John B. West, M.D., Ph.D., Distinguished Professor of Medicine and Physiology, University of California, San Diego School of Medicine, San Diego, California, “Vulnerability of Pulmonary Capillaries in Health and Disease”**

**Tuesday, October 17, 2006, 11:30 AM to 12:20 PM, in Room 354a, McCormick Place, Chicago, Illinois**

Immediately after the Journal Symposium, everyone is invited to attend the 3rd Annual ASA Plenary Lecture. This year, the speaker will be Dr. John West. Everyone in our specialty knows of Dr. West’s fundamental work on the matching of ventilation and perfusion in the lung.

### **4th Annual Celebration of Research**

**Monday, October 16, 2006, 12:30 PM to 2:00 PM, in Room E450a–b, McCormick Place, Chicago, Illinois. Lunch provided!**

We would also like to call readers attention to the Celebration of Research that will take place on Monday during the ASA Annual Meeting, with Michael M. Todd, M.D., Editor-in-Chief of ANESTHESIOLOGY, as the moderator. The featured speaker will be this year’s recipient of the ASA Excellence in Research Award, Nicholas P. Franks, Ph.D., Professor of Biophysics, the Blakett Laboratory, Imperial College of Science, Technology and Medicine, London. Dr. Franks has devoted much of his professional life to understanding the mechanisms of anesthetic actions on the central nervous system and has contributed enormously to our knowledge in an area that is obviously crucial to our specialty.

The recipients of the 2006 Residents’ Research Awards will be introduced during this Celebration event. The First Prize recipient is Christiane Frick, M.D., Massachusetts General Hospital, Boston, Massachusetts, for “Long-term Effects of Botulinum Toxin on Neuromuscular Function” [A391]. The Second Prize recipient is Long T. Nguyen, M.D., State University of New York at Stonybrook, Stonybrook, New York, for “Attenuation of Anesthetic Preconditioning and Reactive Oxygen Species Production in the Aged Heart” [A1219]. The Third Prize recipient is Hannah Wunsch, M.D., Columbia University, New York, New York, for “Increased Mortality Associated with Acute Respiratory Failure of Extra-pulmonary Origin” [A1729]. The three winners will present their papers at the awards ceremony and oral scientific presentation on Sunday October, 15, at 9:00

AM at the House of Delegates meeting at the Chicago Marriott Downtown.

**6th Annual Foundation for Anesthesia Education and Research Honorary Lecture: Paul D. Allen, M.D., Ph.D., Professor, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts**

**Monday, October 16, 2006, 2:00 PM to 3:00 PM, in Room E450a–b, McCormick Place, Chicago, Illinois**

The Foundation for Anesthesia Education and Research (FAER) will present its 6th annual FAER Honorary Research Lecture. FAER has created this annual lectureship as a means of recognizing outstanding scholarship by an anesthesiologist in an effort to encourage young anesthesiologists to consider careers in research and teaching, which are crucial if anesthesiology is to maintain its reputation as a medical specialty continuously striving for excellence in patient care. For more than 30 yr, Dr. Allen has made novel and important contributions in several areas of basic science investigation, most notably in the area of calcium metabolism of striated muscle. Most recently, he has assembled a second multi-institutional, multidisciplinary group of investigators to define the mechanisms of malignant hyperthermia using newly created MH mouse models created in his laboratory. Dr. Allen's discoveries are superb examples of proving fundamental research findings to the resolution of important clinical problems.

**The 2006 FAER Panel: "Translating Future Paradigms to Reality: Anesthesia Research and Education in the Next Decade"**

**Monday, October 16, 3:00 PM to 5:00 PM, in the Lakeside Building, Room E450, McCormick Place, Chicago, Illinois**

Participants will discuss evolving paradigms for research and education in anesthesia advances in stem cells and tissue engineering, new roles for simulation-based learning, and new concepts in the drug discovery process.

Moderator: Ronald G. Pearl, M.D., Ph.D., Professor and Chair of Anesthesia, Stanford University Medical Center, Stanford, California

"The Use of Stem Cells in Tissue Engineering," Charles A. Vacanti, M.D., Vandam/Covino Professor of Anesthesia, Harvard Medical School, Anesthesiologist-in-Chief, Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital, Boston, Massachusetts.

"The Future of Immersive and Simulation-based Learning," David M. Gaba, M.D., Associate Dean for Immersive and Simulation-based Learning and Professor of Anesthesia, Stanford University School of Medicine, and Director Patient Simulation Center of Innovation, VA Palo Alto Health Care System, Palo Alto, California

"New Approaches to Drug Development," Kazimierz Babinski, VP Drug Development, Paineceptor Pharma Corporation, St-Laurent, Québec, Canada

"Computational Genomics: Toward Understanding Our Drugs and Our Diseases," Gary Peltz, M.D., Ph.D., Head, Department of Genetics and Genomics, Roche Palo Alto, Palo Alto, California

Interested readers should also not overlook the myriad other science-related presentations at this year's Annual Meeting. One such event is the Rovenstine Lecture, to be delivered by Jerry Reves, M.D., Vice-President for Medical Affairs, and Dean, College of Medicine, Medical University of South Carolina, Charleston, South Carolina, on Monday, October 16, 2006, 11:15 AM to 12:20 PM, in Room E354b, McCormick Place. There will also be many excellent posters presented throughout the 2006 ASA Annual Meeting.