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On the web:

- Literature Reviews with full references
- 2008 SPA Supporters and Exhibitors

www.pedsanesthesia.org

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Allison Kinder Ross, MD

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Allison Kinder Ross, MD

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Riva Ackerman, MD
Robert S. Greenberg, MD
Athina Kakavouli, MD
Paul Reynolds, MD



Dr. Robert Greenberg has started a new online "club", where the community of pediatric anesthesia, critical care, and pain specialists can share and extend their experience.

A Pediatric Anesthesia Discussion List

An argument for the next step in community dialog

By Robert S. Greenberg, M.D.

Pediatric anesthesia as a specialty is an ever-changing exposure to ideas, questions, solutions, and new challenges. These must be negotiated amongst the members of the community of specialists – managing these hurdles shoulder to shoulder with our colleagues.

We can't work in a vacuum; the answers are embedded in the conversation, whether as a participant or merely an observer – but one must be present to hear it.

The creation and development of the electronic world has provided an opportunity to respond to the evolving pressure on each of our lives. There once was a time that, for instance, a monthly meeting of our Division to ponder the latest writing of our colleagues (known as Journal Club) permitted us to consider the merits and failings

of new techniques, research directions, and solutions to our clinical, research, and education challenges (Even the word "club" suggested a sort of social aspect of the interaction).

But today, with real limits on time, space, and interest, it's frankly impossible to assemble enough participants to merit a quorum, much less a consensus. There just isn't the time allotted to make it happen. Likewise, the breadth of practice has required some definition of focus areas of expertise: General, Cardiac, Pain, Outpatient. Besides, because of their extemporaneous nature these discussions inevitably devolved into "how I do it" (and so it is right) from the "elders" revealing more anecdote than scientific evidence - to say nothing of how this might intimidate or stifle the "un-initiated."

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FROM THE EDITOR

Summer is over and the Fall season begins. Most people may think of this time of year as the season of cool weather, football games and falling leaves, but it is also the time of elections. Although the election for the SPA Board of Directors and Officers does not get the media attention that other elections may warrant, it is an opportunity to read about the candidates and vote for members who will work their way through the Society to positions of responsibility that ultimately may affect our everyday lives. Members of the Board of Directors typically take on positions in chairing the various committees and move up to officer status. One of the members whom you vote for today may very well be a SPA President within the next ten years.

The members who run for these positions dedicate themselves to years of service to the Society that includes time commitments not only to meetings and conference calls, but also in helping to make decisions regarding the future of the Society so that our many missions may remain viable. Discussions with the Board members include finances, education, and directions of research. Most recently there has been much activity around the Society's position

regarding the effects of anesthetics on the developing brain (as presented in this issue), as well as the Society's part in separate certification for the specialty.

It is important for the members to know that the Board of Directors is rotated so that there is representation from a variety of regions, hospitals, and backgrounds. The ideas are to remain fresh and the growth is to be fair. I would encourage anyone who is interested in becoming a part of the Society at this level to volunteer for a committee. This will allow you to interact with many of the members and see first hand what type of time commitment and what type of dedication is needed to move to the next level. Alternatively, there is always the opportunity to get your name out there by contributing an interesting piece to this Newsletter (apologizing in advance for the shameless solicitation). Just contact me at allison.ross@duke.edu.

In the meantime, please vote. That is always the first step. Happy Fall.

— Allison Kinder Ross, MD

ANNUAL MEETING

SPA 22nd ANNUAL MEETING • OCTOBER 17, 2008 • THE ROSEN SHINGLE CREEK • ORLANDO, FLORIDA

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Society for Pediatric Anesthesia



PRESIDENT'S MESSAGE

Dear colleagues, as the summer draws to a close I am reminded of all the work that Members have been doing throughout the year on behalf of the Society. The Communications Committee continues to produce excellent newsletters. The SPA website contains information of importance to all Members, including an expanding CME section that provides opportunities for ongoing learning. The Program Directors for the Annual Meeting in October 2008 (Dr. Valerie Armstead) and the Winter 2009 meeting (Drs. Linda Mason, Mary Ellen McCann and Julie Niezgoda) have worked diligently to put together excellent meetings (please see the SPA website, www.pedsanesthesia.org, for more information). The Congenital Cardiac Anesthesia Society (CCAS) continues to grow (currently numbering over 300 members), and the organization has already put on 2 successful educational programs in conjunction with the SPA Winter meeting. We look forward to another rewarding CCAS educational program (Program Directors - Drs. Emad B. Mossad and James A. DiNardo) on March 18, 2009 in Jacksonville, Florida.

The newly chartered Quality and Safety Committee has been actively working to complete the first phase of the SPA Wake up Safe® initiative. "Wake up Safe®" is our quality improvement initiative which is designed to collect and analyze causes of adverse outcomes that occur during anesthesia in children in the United States. The project is within several months of beginning data collection initially at approximately 10 founding centers, with the goal to expand to other institutions.

I am delighted to announce that the Anesthesia Patient Safety Foundation (APSF) Board was extremely supportive of this work and has awarded us a grant of \$60K for the pilot phase. We look forward to working with APSF on this and other efforts to make

pediatric perioperative care safer.

This is the year for electing new members of the SPA Board. The Nominating Committee has put forth a slate of excellent candidates. These are individuals who have been quite active in the Society and diligently worked to advance the Society's missions. I urge each Member to cast your vote on the website at (www.pedsanesthesia.org)

Finally, I want to thank the members of the Board who are completing their terms this year.

Drs. Frank H. Kern, Shobha Malviya and Stephen Stayer, have made major contributions to the Society as Members and leaders of SPA. It's been a pleasure to work with them. Even though they complete their terms in October 2008, they will continue to play an important role in the Society.

I also want to thank Dr. Francis X. McGowan – who is completing his term as Immediate Past President of SPA in October 2008. Frank has been a longstanding, tireless and devoted supporter and leader of the SPA and its mission. There is not enough space in this column for me to detail all of the work Frank has done and the valuable frank and forthright counsel he has provided to me and others on the Board. Frank, I thank you very much for all of your help and guidance.

In closing, I wish you well for the rest of the summer and look forward to seeing you in Orlando for the SPA Annual Meeting.



Jayant Deshpande, MD
Vanderbilt Children's Hospital,
Nashville, TN

SPA awarded grant to assist with "Wake Up Safe" initiative

The Anesthesia Patient Safety Foundation has awarded a grant to the Society for Pediatric Anesthesia to assist in the development of "Wake Up Safe", a quality improvement initiative to collect and analyze causes of adverse outcomes that occur during anesthesia in children in the United States.

The beginning phase involves representatives from 10 major pediatric institutions: Children's Hospital Boston, The Children's Hospital of Philadelphia, Children's Hospital Los Angeles, Children's Hospital of New York, Children's Hospital and Regional Medical Center Seattle, Cincinnati Children's Hospital Medical Center, Emory Children's Center, Johns Hopkins Children's Center, Texas Children's Hospital, and Vanderbilt Children's Hospital, in association with The Society for Pediatric Anesthesia (SPA). The group is developing a standard method for Event Analysis to assess serious perioperative adverse events, which can be used as part of the peer review process in each hospital. Analysis of the data from these events will permit the SPA "Wake up Safe" steering group to make recommendations for practice changes designed reduce the frequency of these untoward events and improve patient safety.

Although great strides have been made in safety since the discovery of anesthesia 160 years ago, patients continue to experience harm related to anesthesia and surgical care. Despite the millions of anesthetics delivered each year to children and the years that

anesthesia has been used in children, the incidence and etiology of these serious events remain uncertain and not well studied, in large part because these events are relatively rare today and an integrated system to report and analyze these events does not exist. The SPA Wake up Safe Initiative should allow us to learn from the adverse events to improve care. After the initial phase, the goal is to make the Event Analysis and the related learning opportunity available to all children's hospitals and pediatric anesthesia programs around the country.

The Society of Pediatric Anesthesia is the largest professional group for Pediatric Anesthesiologists in the United States. The mission of the SPA is to "foster quality anesthesia and perioperative care, and to alleviate pain in children". The Society has approximately 1700 active members in the United States, including most pediatric anesthesiologists in the country, as well as members from other countries.

Initially the events to be studied include death, cardiac arrest, serious bodily injury, unanticipated major escalation of care, surgery on the wrong patient or body part, fire, awareness under anesthesia, and medication error resulting in serious injury. As the participating institutions and the Wake up Safe steering committee gather experience, additional events and other expected and unexpected outcomes will be added.

Preoperative dosing of ACE Inhibitors and ARA in Children: Guidelines for Management

By **Paul Reynolds, MD**

Uma and Sujit Pandit Professor and Chief
Pediatric Anesthesiology, University of Michigan

Angiotensin Converting Enzyme Inhibitors (ACEI) and Angiotensin Receptor Antagonists (ARA) are commonly used in adults to treat hypertension and congestive heart failure. It is well known that chronic administration of these medications, if not discontinued immediately prior to surgery, can lead to post induction and intraoperative hypotension which can be refractory to standard therapy (1-5).

These same drugs are used with increasing frequency in children for the treatment of primary hypertension, secondary hypertension due to chronic renal disease, congestive heart failure, and afterload reduction following cavopulmonary shunts for single ventricle repair (6, 7).

The Renin Angiotensin System (RAS) is a biochemical cascade that regulates the production of angiotensin II (AT II), a peptide that is involved in short term regulation of blood pressure, intravascular fluid volume, and vasoconstriction.

Renin, produced in the kidney, converts angiotensinogen to angiotensin I, which is then converted to AT II by angiotensin converting enzyme (ACE). ACEI inhibit ACE, thus decreasing the amount of AT II, while ARA competitively block the AT receptors. A decrease in blood pressure after RAS blockade is a



Dr. Reynolds

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Discussion List, from page 1

Likewise, such conversations were inevitably limited to the local community, without the frequent cross-fertilization of thought and insight afforded by [inter-]national meetings (which are too infrequent to manage the exponential growth of ideas and solutions in any meaningful way), and all too often muffle the individual voice with the momentum of the masses.

The good news is that most of us have the fundamental skills to participate in basic email and web browsing. And this skill set – combined with the advancing technology cascade – can take our experience to the next level, for ourselves and our patients.

The beauty of the internet is that it offers instantaneous communication (when you want it, where you want it). It not only can detach the time/space constraint, but can permit reflective time to consider the issues, experience, and resources enabling one to compose a truly constructive response – perhaps including a reference to a supporting article, paper, or picture. In fact, the broadening technologies suggest an ever-widening opportunity for creative and productive communication.

Here's the Vision: to leverage the power of the internet and our common computing expertise to create a framework that will enable a community of pediatric anesthesia, critical care, and pain specialists to embrace and extend their academic experience. A

new Club!

Here's how it starts: point your web browser to <http://pdg.accm.jhmi.edu> and register. Since this is a world-wide community, full real names are used. Once validated (a step to minimize issues

with spam artists) you'll be able to see two main areas for discussion: The Community and Journal Club that each have sections to help organize the discussion. (See table).

There's more, but that will get you started. Have an idea for research? Consider it with your colleagues in "Eureka". Need a creative method to meet an educational goal? Seek it out in Left Seat / Right Seat. Just put down this month's journal and wonder what other's think of the cover article? Consider it in one of the sections of "Journal Club".

Clearly we are at a turning point in how we will participate in the dialog, and while this isn't

the only way to join in on the conversation to discuss those ideas, questions, solutions, and new challenges, it is a next step. Join in and say something.

From the editor: Dr. Greenberg has done a stellar job with putting this website together and offering its benefits of discussion to the members of SPA. I encourage everyone to take this opportunity to join in and start the thread of professional interaction. AKR

Community	A World of Work (Humanitarian Opportunities/Experience/Contacts)
	Eureka (Research and Investigation)
	I was Wondering (Engage others in Anesthesia Thoughts)
	Left Seat/ Right Seat (Teaching/ Learning and Education)
	Never Again (Experience that others can learn from)
Journal Club	The Podium
	Cardiac Anesthesia
	Critical Care
	Pain Management
	Peds Anesthesia

ACE Inhibitors, from page 4

result of a decrease in systemic vascular resistance and impaired cardiac output adaptation to ventricular loading changes (4). General anesthetics are known to block the sympathetic nervous system, another regulator of blood pressure.

The combined effects of RAS and sympathetic blockade have a propensity to cause hypotension during general anesthesia. In a large, retrospective observational study, Kheterpal et al noted that even when ACEI and ARA were withheld the day of surgery, adults who received concomitant diuretic therapy (and therefore were volume depleted) still developed intraoperative hypotension (5).

Although not reported in the literature, we have observed that several children receiving these medications developed severe post induction hypotension, with symptoms similar to those described in the adult literature. Moreover, the hypotension failed to respond to standard measures like volume loading, reduction of volatile anesthetic and phenylephrine boluses. The hypotension resolved in some of these children with vasopressin bolus doses.

Table 1: Commonly used ACE Inhibitors

TRADE NAME	GENERIC NAME
Capoten	Captopril
Lotensin	Benazepril
Vasotec	Enalapril
Prinivil	Zestril lisinopril
Monopril	Fosinopril
Altace	Ramipril
Aceon	Perindopril
Accupril	Quinapril
Univasc	Moexipril
Mavik	Trandopril

Table 2: Commonly used ARA

TRADE NAME	GENERIC NAME
Atacand, Amias, Ratacand, Blopress	Candasartan
Teveten	Eprosartan
Aprovel, Carvea, Avapro	Irbesartan
Cozaar	Losartan
Benicar	Olmesartan
Pritor	Telmisartan
Diovan	Valsartan

These episodes and a detailed review of the literature led us to develop a policy related to the preoperative use of ACEI and ARA. Patients scheduled for elective surgery who are receiving chronic ACEI (table 1) or ARA (table 2), are instructed to hold their dose on the day of surgery. If the patient has taken these medications on the day of an elective procedure, surgery will be cancelled, or delayed for 12 hours. In the case of emergency surgery, the anesthetic will proceed, with the anesthetist prepared to deal with potential hypotension.

The effects of ACEI and ARA on perioperative hemodynamics in children may warrant further investigation.

Bibliography:

1. Comfere T, Sprung J, Kuma MM, Draper M, Wilson DP, Williams BA, Danielson DR, Liedl L, Warner DO. Angiotensin system inhibitors in a general surgical population. *Anesthesiology Analg* 2005;100:636-44.
2. Bertrand M, Godet G, Meersschaert K, Brun L, Salcedo E, Coriat P. Should the angiotensin II antagonists be discontinued before surgery? *Anesthesiology Analg* 200a;92:26-30.
3. Oh YJ, Lee JH, Nam SB, Shim JK, S JH, Kwak YL. Effects of chronic angiotensin II receptor antagonist and angiotensin-converting enzyme inhibitor treatments on neurohormonal levels and haemodynamics during cardiopulmonary bypass. *British Journal Anaesthesia* 97(6):792-98 (2006).
4. Colson P, Ryckwaert F, Coriat P. Renin angiotensin system antagonists and anesthesia. *Anesthesiology Analg* 1999;89:1143-55.
5. Kheterpal S, Khodaparast O, Shanks A, O'Reilly M, Tremper KK. Chronic angiotensin-converting enzyme inhibitor or angiotensin receptor blocker therapy combined with diuretic therapy is associated with increased episodes of hypotension in noncardiac surgery. *Journal of Cardiothoracic and Vascular Anesthesia*, Vol 22, No 2 (April), 2008:pp180-186.
6. Silverstein DM, Champoux E, Aviles DH, Vehaskari MV. Treatment of primary and secondary hypertension in children. *Pediatric Nephrology* (2006) 21:820-827.
7. Kay JD, Colan SD, Jr Graham TP. Congestive heart failure in pediatric patients. *American Heart J* 2001;142:923-8.

From the Editor: Dr. Reynolds has described the reasoning behind the need for guidelines for ACEI and ARA. Although this practice is just emerging in children, hopefully the sharing of these experiences from University of Michigan will prompt others to follow these or similar guidelines at their own institutions. AKR

Nominations for the SPA Board of Directors

Submitted by the Nominations Committee

Francis X. McGowan, Jr., MD - Chair
Randall M. Clark, MD
Peter J. Davis, MD

Steven C. Hall, MD
Anne M. Lynn, MD

Thomas J. Mancuso, MD, FAAP
Mark A. Rockoff, MD

LEGEND

1. Full Name
2. Name and City/State of Hospital for which you work.
3. Hospital and University Titles
4. Name and City/State of College attended; degree and year obtained.
5. Name and City/State of Medical School attended; degree and year obtained.
6. Name and City/State of Hospital where internship was done; type and dates attended; degree and year obtained.
7. Name and City/State of Hospital where Anesthesiology Residency done; dates of training.
8. Name and City/State of Hospital where Fellowship training was done (if applicable); type and dates of Fellowship.
9. Name and City/State of Hospital/University where additional training was done (if applicable); type and dates of training.
10. Prior involvement with SPA (if applicable); describe briefly.
11. Involvement with other national/international (pediatric) anesthesia organizations (if applicable); describe briefly.

ADVANCING TO VICE PRESIDENT/PRESIDENT-ELECT

Lynn D. Martin, MD, FAAP, FCCM

Children's Hospital & Regional Medical Center
Seattle, WA

ADVANCING TO TREASURER

Nancy L. Glass, MD, MBA, FAAP

Texas Children's Hospital
Houston, TX

NOMINATED TO THE OFFICE OF SECRETARY

1. Shobha Malviya, MD

2. C.S. Mott Children's Hospital, University of Michigan, Ann Arbor, MI
3. Professor of Anesthesiology
Associate Director, Division of Pediatric Anesthesiology
Director of Pediatric Anesthesia Research
Director of Pediatric Pain and Sedation
4. Jai Hind College, Bombay University, Bombay India, 1975
5. Topiwala National Medical College, Bombay India, MBBS, 1981
6. Pediatric internship - St Luke's Roosevelt Hospital, New York, NY, July 1981 through June 1982
7. University of Michigan, Ann Arbor, MI
July 1985 through June 1987
8. Hospital for Sick Children, Toronto Ontario, August 1987 through July 1988
9. Pediatric residency - Rainbow Babies and Children's Hospital, Cleveland, OH July 1982 through June 1984

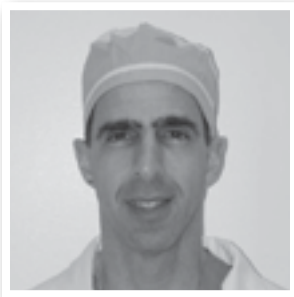


10. 1994-present Member SPA, presented several research abstracts, delivered lecture and refresher course, moderated poster presentations
1998-2004 - Member, Communications committee/Committee on publications; Contributed to newsletter, attended all committee meetings
2004 - Member, Board of Directors
Attended all meetings and teleconferences, participated in BOD activities and assignments
2004-present - Co-chair communications committee
Redesigned website, solicited content for website, edited new material for website, contributed to newsletter
11. 2005 - Organizing Committee, Congenital Cardiac Anesthesia Society
2003-2005 - Member, Committee on Pediatric Anesthesia, American Society of Anesthesiologists
1995-1998 - Member, SAMBA newsletter publications committee
1998-present - Member, Subcommittee on Research, Society for Ambulatory Anesthesiologists

NOMINATED TO THE SPA BOARD OF DIRECTORS

1. Ira Todd Cohen, MD, MEd

2. Children's National Medical Center, Washington, DC
3. Director of Education, Division of Anesthesiology and Pain Medicine; Professor of Anesthesiology and Pediatrics
4. Connecticut College, New London, CT – BA, 1979
5. New York University, New York, NY – MD, 1983
6. Albert Einstein Affiliated Hospitals, Bronx, NY - Pediatrics, 1983-1986
7. New York University, New York, NY – Anesthesiology, 1987-1989
8. Children's National Medical Center, Washington, DC - Pediatric Anesthesiology, 1989-1990
9. George Washington University, DC – Masters of Education, 2003-2005
10. 2000-present – Member, Committee on Education – planning and participation in multiple aspects of winter and fall meetings of the SPA, including panels, workshops, PBLDs, and abstract review and presentations.
2003-2005 – Editor, Web Site Link Page
– Surveying membership for popular web sites and establishing links for SPA web page
11. 1992-present – Committees on education and research, Society for Education in Anesthesia
2001-2002 Committee on Diversity, ASA
2003-present – Board of Directors, Society for Education in Anesthesia
2004-present Programs, Pediatric Academic Societies
2006-present – Council for Continuing Medical Education Accreditation



- Anesthesiology and Intensive Care, 1992-1995
9. Pediatric Residency, St. Louis Children's Hospital, Washington University, St. Louis MO 1988-1990
 10. Education Committee
Program Chair 2007-2008 Winter meeting
Past Program Chair 2009 Winter meeting
SPACIES (SPA Committee on International Education and Service)
A primary author of forthcoming guidelines for international care.
Fellowship Program Directors committee
Program Directors Board
Developing fellow case tracking tools with ACGME
Developing Fellowship match
Board of Directors Initiatives
Joint meeting with Chinese Society of Anesthesiology
Fundamentals of Pediatric Anesthesiology Course (intended to enhance the non-pediatric anesthesiologists comfort with the care of children).
Study Group for Pediatric Anesthesiology
Epidemiology and demographics of pediatric anesthesiology
Fellowship Curriculum
 11. ASA Committee on Pediatric Anesthesia, Task force on anesthetic toxicity
ASA Scientific Content Subcommittee for Pediatric Anesthesia (develops pediatric track for ASA annual meeting)
Smile Network International
Medical Director (past)
Board of Directors (past)
Medical Advisory Board
Americares International
Medical Advisory Board
Ronald McDonald House of Rochester, MN
Board of Trustees
Board President (past)
Volunteers in Plastic Surgery/American Society of Plastic Surgeons
Steering committee

1. Randall Paul Flick MD, MPH, FAAP

2. Mayo Clinic, Rochester, MN
3. Chair, Division of Pediatric Anesthesiology
Director, Fellowship in Pediatric Anesthesiology
Assistant Professor of Anesthesiology and Pediatrics
4. Moorhead State University, BA Biology, 1983
5. University of North Dakota School of Medicine, 1987
6. St. Louis Children's Hospital, Washington University; St. Louis, MO; Internship Pediatrics 1987-1988
7. Barnes Hospital, Washington University, St. Louis, MO, 1990-1992
8. Johns Hopkins Hospital, Fellowship Pediatric



1. Julie Jan Niezgoda MD

2. The Children's Hospital
Cleveland Clinic
Cleveland Ohio
3. Chairman Department of Pediatric Anesthesia
Program Director
Pediatric Anesthesia
4. Ohio State University
Columbus, Ohio Bachelor of Arts and Science 1979
5. Ohio State University Columbus Ohio
Doctor of Medicine 1985



Continued on page 8

Nominees, from page 7

6. Rainbow Babies and Children's Hospital Case Western Reserve University. Cleveland, Ohio
Pediatric Residency Internship 1985-1986
7. University Hospitals Case Western Reserve University Cleveland, Ohio 1988-1991
8. Pittsburgh Children's Hospital Pittsburgh Ohio
1992-1993 Pediatric Anesthesia Fellowship
9. Rainbow Babies and Children's Hospital.
Pediatric Residency Pediatrician 1986-1988
10. Education Committee 1999-present, Lectures, Chairing the PBLD portion of the 2009 SPA annual meeting.
11. Medical Mission work in Guatemala with Healing the Children 2001-present.

1. Paul Jason Samuels, MD

2. Cincinnati Children's Hospital
3. Director of Education
Associate Professor of
Anesthesiology and Pediatrics
4. Oberlin College, Oberlin, Ohio
B.A., 1982
5. New York University, New
York, N.Y.
M.D., 1987
6. Children's Memorial Hospital, Chicago, Illinois
Completed residency in Pediatrics, 1990
7. Northwestern University, Chicago, Illinois
1993
8. Children's Memorial Hospital
Pediatric Anesthesiology, Chicago, Illinois
1994



10. Member, Education Committee
Member, Simulation Committee
11. Participated in many Interplast and Healing the Children
medical mission trips to the Philippines, Peru, Ecuador, and
China.
Past member of Interplast anesthesiology committee

1. Lena S.Y. Sun

2. Columbia University-
Children's Hospital of New
York, New York, NY
3. Professor of Pediatrics and
Anesthesiology
Vice Chairman and Chief of
Pediatric Anesthesia,
Department of Anesthesiology,
Columbia University
4. Massachusetts Institute of Technology, Cambridge, MA
BS, 1975
5. Mount Sinai School of Medicine, New York, NY
MD, 1979
6. Long Island Jewish Hospital, New Hyde Park, NY
Pediatrics internship and residency 1979-82
7. Columbia Presbyterian Medical Center
Anesthesiology, 1984
8. Pediatric Anesthesia fellowship and T32 Developmental
Pharmacology research fellowship
Columbia University, 1984-1986
9. NA
10. Member of SPA Research Committee
11. Board member, Pediatric Anesthesia
Program Directors Group



The 2008 Elections for Officers
and Board of Directors will be open
for voting until

September 26, 2008.

If you have any questions or concerns, please contact
Bob Specht at 804-282-9780 or by email at bob@societyhq.com.

Voting will only be done electronically via online ballot this year.

What is the Latest on Neurodevelopment and Anesthesia-induced Neurotoxicity?

Symposium on Anesthesia and Neurodevelopment in Children on May 3rd and co-Sponsored Satellite Workshop with FDA on Pediatric Anesthesia-induced Neurotoxicity on May 2nd.

Reviewed by: Riva Akerman, MD
and Athina Kakavouli, MD
Columbia University

On May 2nd, 2008, the FDA and the Department of Anesthesiology at Columbia University cosponsored a workshop entitled, "Pediatric Anesthesia-induced Neurotoxicity Study (PAINS)". The goal of the workshop was to discuss future directions with respect to studies that will examine the important public health issue of anesthetic neurotoxicity of the developing brain. Following Dr. Robert Rappaport's (Director of the Division of Anesthesia, Analgesia and Rheumatology Products, FDA) introduction of the PAINS project, summarizing the development of the project, Dr. Mwango Kashoki of the FDA presented an overview of the currently proposed studies under PAINS. Dr. Wendy Sanhai (Senior Scientific Advisor of the FDA Commissioner's Office) then presented the concept for a PPP (Private-Public Partnership) as a potential mechanism for supporting the studies to address this issue. Investigators from Columbia University (Dr. Lena Sun), Harvard University (Dr. Mary Ellen McCann), University of Iowa (Dr. Robert Block), University of Arkansas (Dr. K.J.S. "Sunny" Anand) and the FDA (Dr. Cheng Wang) then presented the currently existing PAINS proposals for clinical (human) and non-clinical (animal) studies. Dr. Charles McKlesky represented the pharmaceutical industry at the workshop. In attendance in the audience included other FDA scientists (Dr. Judy Staff, Dr. Susan Cummins, Dr. Cheekesha Clingman and Dr. Dan Mellon). The Workshop concluded with Dr. Sanhai's statement, "We will need to discuss where the gaps are in existing studies, and do a robust review of what we are doing and what needs to be done."

This satellite workshop preceded the main event which was the scientific symposium on "Anesthesia and Neurodevelopment in Children" that took place on May 3rd, 2008. The symposium sponsored by Columbia University and Morgan Stanley Children's Hospital of New York (CHONY) was held at the Wintergarden conference room of the Children's Hospital of New York (CHONY). Dr. Lena S. Sun, Professor of Anesthesiology and Pediatrics of Columbia University, and Chief of Pediatric Anesthesia was the principal organizer of this event. More than 70 physicians and scientists attended the symposium. The symposium consisted of

four sessions addressing the past, present, and future of research in this important area.

The first session, chaired by Dr. Steven C. Hall of Children's Memorial Hospital focused on the existing preclinical and human data on anesthetic neurotoxicity. Dr. Gregory Crosby of Brigham and Women's Hospital presented evidence of neurotoxicity from general anesthetics in both the developing and aging brain in animals, but stressed caution in prematurely applying these results to humans. Dr. Andreas Loepke of Cincinnati Children's Hospital expanded on the difficulties inherent in extrapolating data "from bench to bedside," and urged the initiation of more clinical studies. Dr. Francis X. McGowan of Children's Hospital Boston then presented the current literature of human data with respect to developmental outcome with different surgical procedures, and information on specific agents. He reiterated the paucity of data related to this important issue. Dr. Robert Block of the University of Iowa provided an update on the Iowa Outcomes with Anesthesia (IOWA) Study, which proposes to determine whether exposure to anesthesia and surgery in early life may be associated with long-term abnormalities in cognitive development, as evidenced by poorer scores on scholastic achievement tests than grade-matched population norms; Dr. Randall Flick of the Mayo Clinic presented data from a population-based cohort study that examined



Dr. Lena S. Sun, Professor of Anesthesiology and Pediatrics of Columbia University, and Chief of Pediatric Anesthesia was the principal organizer of a satellite workshop on Anesthesia and Neurodevelopment in Children

the incidence of learning disability in children exposed to multiple surgeries and anesthetics prior to four years of age; and Dr. Charles DiMaggio of the Mailman School of Public Health at Columbia University Medical Center presented data from two retrospective cohort analyses of the New York State Medicaid database. All of the speakers again emphasized the need for caution in interpreting this data, as there are multiple confounding factors implicit in these studies: Does the need for surgery and anesthesia in and of itself represent an independent risk factor for cognitive abnormalities? Could neurologic abnormalities have been present prior to exposure to anesthetics? Can one really have matched controls for factors such as socioeconomic status, cultural and ideological differences, and overall family environment in assessing cognitive development? A lively discussion ensued, in which the speakers were joined by Dr. Hall and by Dr. Judy Staffa of the FDA. Although many individual points were hotly debated, there was unanimous agreement on the urgent need for more pediatric clinical studies on this topic.

The next sessions focused on two areas of significant importance in any study design: neurodevelopmental outcome measures, and epidemiological approach. Dr. Cynthia Salorio of Johns Hopkins

Continued on page 10

Destination Africa: ORBIS in Tanzania

By Cheryl K. Gooden, MD, FAAP
Mount Sinai Medical Center

As a first time volunteer faculty (VF) with ORBIS, I journeyed from New York City to Zurich, Switzerland (layover) and then with a brief stop in Nairobi, Kenya for re-fueling and then on to my final destination of Dar ES Salaam (Dar), Tanzania.

As my plane landed, I could see the ORBIS plane parked off in the distance. On arrival to the airport, I was met by two ORBIS staff members. The next several days I would spend participating in the ORBIS Flying Eye Hospital Program. This was only the second time that the ORBIS plane had come to Tanzania. However, for numerous years ORBIS has collaborated with the ophthalmology department at Muhimbili National Hospital (government – run).

An opportunity arose for some sightseeing as there would be a public holiday on July 7th (Industrial Day) and screening of patients would not occur on this day. The next day – less than 24 hours after my arrival in Tanzania – a group of us, both ORBIS staff members and VFs, left Dar on a four hour drive to Mikumi National Reserve.

We made a few stops along the way, and this afforded us with the chance to learn about the culture and meet Tanzanians in the small towns. We finally arrived in Mikumi and began our safari adventure. An amazing number of animals and species of birds were observed. The next morning we had an opportunity to do more viewing at Mikumi. We returned to Dar in the afternoon.



Dr. Gooden

The following morning ORBIS staff members and VFs had an orientation meeting. After the meeting, we left for a day of screening patients at Muhimbili National Hospital. As part of the anesthesia team, the ORBIS staff anesthesiologist and I evaluated a number of children and adults.

The patients were either ASA I or II. During our pre-anesthesia evaluations we encountered patients with various eye diseases and in addition, there were many with co-existing disease such as hypertension, diabetes, and chronic anemia. There were also patients who had been previously treated for tuberculosis and malaria.

In the evening, ORBIS staff members and VFs met to discuss the issues of screening day and to receive the surgical schedule for the next couple of days. The operations would occur either on the Flying Eye Hospital or at a local hospital.

The next few days would be devoted to patient care for children and adults, lectures, and training for local ophthalmologists and anesthesiologists. During the latter part of the week, ORBIS hosted its second VISION 2020 Workshop in East Africa. Participants of this workshop came from eight East African nations where discussions included eye care issues as well as plans and strategies for the prevention of blindness.

The time that I spent with ORBIS in Tanzania was both an amazing medical and cultural experience and also quite rewarding. Over the years, I had read about the global reach of ORBIS to save sight and for education. Through these goals people are empowered. This is truly a great idea.

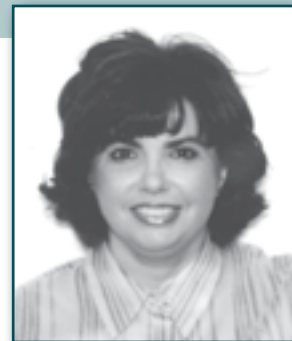
Neurotoxicity, from page 9

gave an overview of the available assessment tools used to evaluate neurodevelopment in children, while Dr. David C. Bellinger of Children's Hospital Boston described the advantages and pitfalls inherent in these assessment tools and provided some insights gained from the experience with the Boston Circulatory Arrest Trial. Dr. Virginia Rauh and Dr. Ezra Susser, both of the Mailman School of Public Health, were the principal speakers on the session on epidemiological approaches to study neurotoxicity. Dr. Rauh highlighted the successful public health intervention based on epidemiologic studies of the effect of organic pesticides on pediatric neurodevelopment. She presented the lessons learned from the studies of the Centers for Child Environmental Health. Dr. Susser, Chairman of Epidemiology, enchanted the audience with his talk on pregnancy and birth cohorts. He described that these cohorts provide important opportunities for research into environmental and genetic contributions to health and disease that arise from such longitudinal studies. Dr. Michael M. Todd of the University of Iowa then discussed all the careful planning and attention to detail

required in the execution of large multicenter studies, and emphasized the differences between lab study and human scientific study. The final presenter was Dr. Alan Moskowitz, Co-Director of InCHOIR (International Center for Health Outcomes and Innovation Research) of Columbia University and Professor of Medicine and Health Policy and Management. He summarized the InCHOIR experience in performing multi-center studies.

The final session discussed future directions, specifically focusing on the upcoming PANDA study, a large multicenter clinical trial designed to investigate the possible connection between anesthetic exposure at a young age and later neurocognitive impairment. The challenges and specific design issues were discussed with energy and enthusiasm.

The two-day event was an important gathering of all of those who are interested in the scientific, clinical and the public health, as well as the policy issues related to anesthetic neurotoxicity and the developing brain. Dr. Jay Deshpande represented the SPA in the Workshop as well as the Saturday symposium.



Helen V. Lauro, MD, FAAP
Long Island College Hospital,
Brooklyn, NY

September 25-27: Athens, Greece

Federation of European Associations of Paediatric Anaesthesia (FEAPA) in association with the Greek Society of Paediatric Anaesthesia
Tel: (+30) 210 3232433, Fax: (+30) 210 3232338
Information: Aktina-City Congress SA, 26 Filellinon Street, GR-10558, Athens, Greece
Websites: <http://www.feapa.org>, <http://www.aktinacitycongress.com/feapa2008>

October 2-5: Nova Scotia, Canada

Seventh Biennial International Forum on Pediatric Pain—Assessing Pediatric Pain: Current Evidence and Practice
Tel: (902)-240-3996, Fax: (902)-429-1238
Information: International Forum on Pediatric Pain, Conventional Wisdom Event Planning, 1593 Henry Street, Halifax, NS B3H3K2
Website: <http://www.pediatric-pain.ca/ifpp>

October 17: Orlando, FL, USA

Society for Pediatric Anesthesia (SPA) 22nd Annual Meeting
Tel: (804)-282-9780, Fax (804)-282-0900
Information: Society for Pediatric Anesthesia, 2209 Dickens Rd, Richmond, VA 23230-2005
Website: <http://www.pedsanesthesia.org>

October 24-27: Nice, France

2nd Congress of the European Academy of Pediatrics
Tel: +41 22 908 0488, Fax: +41 22 7322850
Information: Kenes International, European Academy of Paediatrics, 17 Rue du Cendrier, P.O. Box 1726, CH-1211 Geneva 1, Switzerland
Website: <http://www.kenes.com/paediatrics>

November 6-9: Hunter Valley Gardens, Hunter Valley, New South Wales, Australia

Society for Paediatric Anaesthesia in New Zealand and Australia (SPANZA) Tenth Annual Scientific Meeting
Tel: +61 2 4973 6573, Fax: +61 2 4973 6609
Information: Lyndell Wills, Conference Secretariat, P.O. Box 180, Morriston, New South Wales, Australia 2264
Website: <http://www.spanza.org.au>

November 7-9: Montreal, Quebec, Canada

Canadian Pediatric Anesthesia Society Meeting 2008
Tel: (416)-480-0602, Fax: (416)-480-0320
Information: Canadian Anesthesiologists' Society, 1 Eglinton Avenue East, Suite 208, Toronto, ON, M4P 3A1 Canada
Website: http://www.cja-jca.org/pre-view_misc/CPA_2008e.html

November 17-19: Rome, Italy

First International Congress UENPS for Global Neonatology & Perinatology
Tel: + 39 06 80693320, Fax: + 39 06 80692586
Information: Organising Secretariat, e meeting & consulting srl, Via F. Denza 19A, 00197 Rome, Italy
Website: <http://www.emec-roma.com>, <http://www.uenps2008.com>

November 20-21: Cardiff, Wales, United Kingdom

Paediatric Intensive Care Society (PICS) & Association of Paediatric Anaesthetists (APA) 2008
Tel: 02920 747747, Fax: 02920 746443
Information: University Hospital of Wales, Health Park, Cardiff, Wales, CF144XW
Website: <http://www.cardiffpicu.com>

2009

February 6-8: Anaheim, CA, USA

47th Clinical Conference in Pediatric Anesthesiology
Tel: (323)-361-2262, Fax: (323)-361-1001
Information: Tivi Ortiz, Pediatric Anesthesiology Foundation, 4650 Sunset Blvd., Mailstop #3, Los Angeles, CA 90027
Website: <http://www.pac.chla-accm.org>

March 19-22: Jacksonville, FL USA

Congenital Cardiac Anesthesia Society (CCAS)/Society for Pediatric Anesthesia (SPA)/American Association of Pediatrics (AAP) 2009 Winter Meeting
Tel: (804)-282-9780, Fax (804)-282-0900
Information: Society for Pediatric Anesthesia, 2209 Dickens Rd., Richmond, VA 23230-2005
Website: <http://www.pedsanesthesia.org>

March 26-27: Ho Chi Minh City, Vietnam

Seventh Scientific Meeting of the Asian Society of Paediatric Anaesthesiologists (ASPA)
Tel: +84 8927 1119, Fax: +84 8927 0053
Information: Phuoc Tan Nguyen, Department of Anesthesiology, Children's Hospital #1, 341 Su van Hanh, Q.10, Ho Chi Minh City, Vietnam
Website: <http://www.aspa-2000.com/index.html>

June 7-10: Acapulco, Mexico

Eighth International Symposium on Pediatric Pain
Tel (604)-681-2153 Fax: (604)-681-1049
Information: Vanessa Idler, Conference Coordinator, International Conference Services Ltd. Suite 2101 - 1177 West Hastings Street, Vancouver, BC Canada V6E 2K3
Website: <http://www.ispp2009mexico.com>

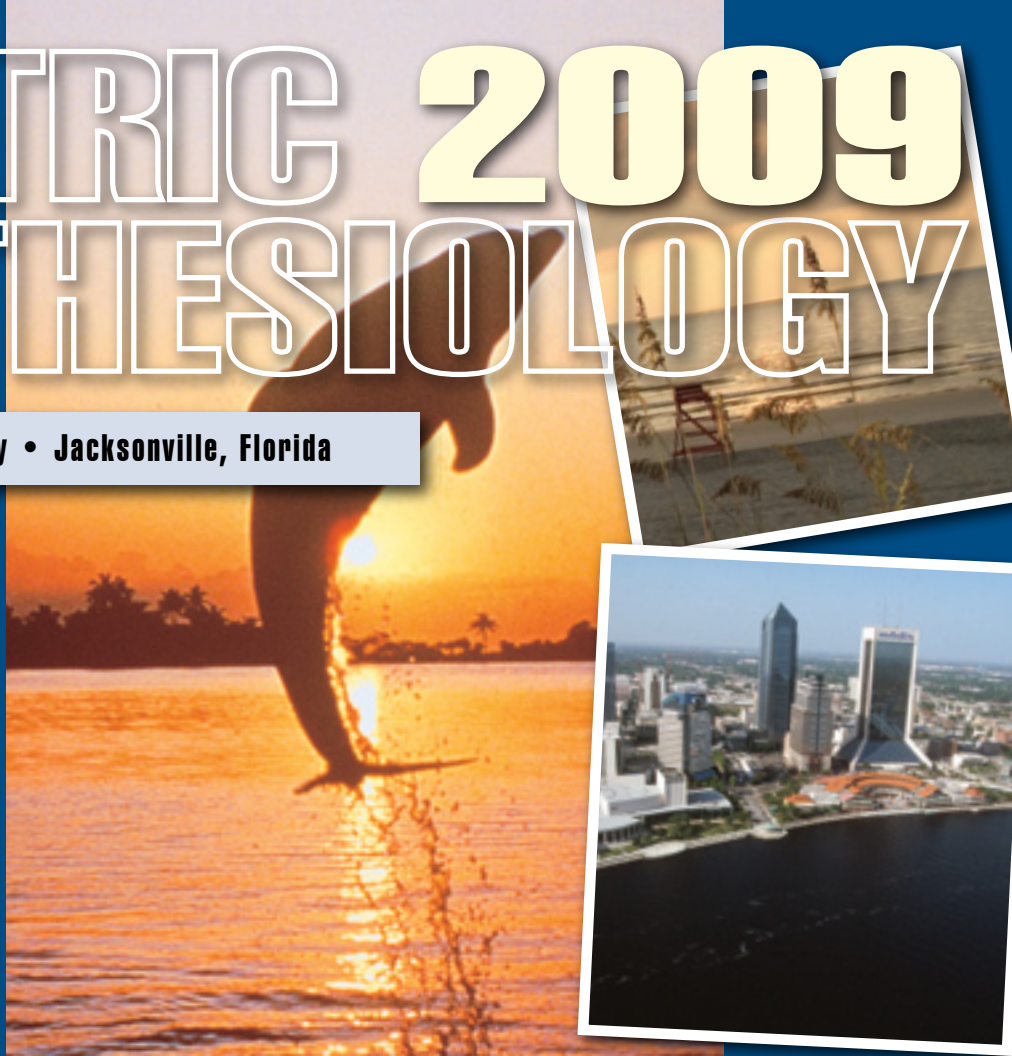
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