

David O. Warner, M.D., Editor

Society of Neurosurgical Anesthesia and Critical Care Scientific Meeting. Atlanta, Georgia. October 21, 2005

The Annual Meeting of the Society of Neurosurgical Anesthesia and Critical Care (SNACC) was held at the Hyatt Regency Atlanta (Atlanta, Georgia) on Friday, October 21, 2005. Cornelis Kalkman, M.D., Ph.D. (Professor, Department of Perioperative Medicine, Anesthesiology and Pain Treatment, University of Utrecht, The Netherlands), organized the program, which included lectures on neurotrophic factors, brain death, and postoperative cognitive dysfunction. One hundred eighty-eight SNACC members attended the meeting this year despite the last-minute relocation from New Orleans, Louisiana, to Atlanta because of the devastation from Hurricane Katrina.

Dinner Symposium

Before the meeting, a Thursday dinner symposium entitled "Managing Uncontrolled Hemorrhage in Neurosurgery and Neurocritical Care" was moderated by Karen Domino, M.D., M.P.H. (Professor, Department of Anesthesiology, University of Washington School of Medicine, Seattle, Washington), and supported by an unrestricted educational grant from Novo Nordisk, Inc. (Princeton, New Jersey). Dougald Monroe, Ph.D. (Associate Professor, Division of Hematology/Oncology, University of North Carolina School of Medicine, Chapel Hill, North Carolina), presented an updated approach to understanding blood coagulation using the cell-mediated system, wherein certain cells aid in localization and organization of the clotting processes. At the core of this approach to coagulation is the tissue factor-VIIa complex that is responsible for initiating coagulation on the tissue factor-bearing cell. This represents a shift in understanding coagulation and hemostasis by expanding on the cascade model of the intrinsic and extrinsic pathways. Stephan A. Mayer, M.D. (Associate Professor, Department of Neurology, Columbia University, New York, New York), then discussed the use of recombinant activated factor VII (rFVIIa) as a hemostatic therapy for intracerebral hemorrhage. He showed results of the NovoSeven intracerebral hemorrhage trial that looked at the ability of rFVIIa to limit ongoing bleeding and reduce hematoma growth in intracerebral hemorrhage. Finally, Arthur M. Lam, M.D. (Professor, Department of Anesthesiology, University of Washington, Seattle, Washington), gave a talk on the etiology and treatment of coagulopathies after traumatic brain injury.

Basic Science Keynote Lecture

William C. Mobley, M.D., Ph.D. (Professor, Department of Neurology, Stanford University, Stanford, California), delivered a lecture on "Neurobiology of Aging and Alzheimer's Disease." He discussed possible mechanisms of neurodegeneration and the role of axonal transport, both anterograde and retrograde, in cognitive failure. Dr. Mobley outlined the role of neurotrophic factor in Alzheimer disease and examined evidence for the existence of retrograde transport signaling endosomes. He presented data from his laboratory using a mouse model of Down syndrome that demonstrated the lack of nerve growth factor signaling endosomes leads to the degeneration and loss of basal forebrain cholinergic neurons. Furthermore, these same basal forebrain cholinergic neurons were salvaged by exogenously administered nerve growth factor. These data suggest that the loss of basal forebrain cholinergic neurons was due to defective retrograde delivery of nerve growth factor. He ended the talk with a discussion of how a better understanding of the biology of these transport systems will provide insight into these neurodegenerative diseases and lead to opportunities to improve treatments.

Clinical Keynote Lecture

Eelco F. M. Wijdicks, M.D. (Professor, Department of Neurology, Mayo Clinic College of Medicine, Rochester, Minnesota), discussed the varying clinical criteria for brain death. Dr. Wijdicks reviewed the concept of death throughout recorded history. He then elaborated on more modern attempts to clarify what is meant by brain death. Dr. Wijdicks discussed the importance of the Harvard Criteria for Brain Death published in the *Journal of the American Medical Association* in 1968. He gave various cultural perspectives of brain death, including those of physicians from the United States, Canada, Great Britain, and Japan.

The 2005 John B. Michenfelder, M.D., SNACC New Investigator Award was presented by Rona G. Gifford, M.D., Ph.D. (Professor, Department of Anesthesia, Stanford University, Stanford, California), to Chanannait Paisansathan, M.D., for her work entitled "CSF S100B Related to Vasospasm in Patients Undergoing Intracerebral Aneurysm Clipping Surgery." Dr. Paisansathan is an Instructor in the Department of Anesthesiology, University of Illinois at Chicago, Chicago, Illinois. Her study evaluated the correlation of S100B protein in cerebral spinal fluid and blood in patients undergoing intracerebral aneurysm clipping. She found that early changes in cerebral spinal fluid S100B levels at 30 min after clipping significantly correlate with vasospasm. This relation dissipated at 24 h after clipping. In addition, increases in cerebral spinal fluid S100B levels at 30 min after clipping significantly correlated with poorer neurologic outcomes as measured by the Glasgow Outcome Score. This relation between cerebral spinal fluid S100B levels and poor neurologic outcome persisted at 24 h after clipping. There was no correlation between serum S100B levels at 30 min or 24 h with either vasospasm or neurologic outcome.

The 2005 Distinguished Teacher Award was presented to David S. Smith, M.D., Ph.D. (Associate Professor, Department of Anesthesia, University of Pennsylvania, Philadelphia, Pennsylvania). There were numerous accolades from several of Dr. Smith's trainees at various institutions that attested to the positive impact Dr. Smith has had, and continues to have, on their careers.

The morning events concluded with the research poster sessions. A total of 94 posters were presented in 10 areas of neuroanesthesia and neuroscience.

Clinical Forum

The afternoon session began with the Clinical Forum, which consisted of two case discussions lead by Gregory Crosby, M.D. (Associate Professor, Department of Anesthesiology, Harvard Medical School, Boston, Massachusetts), and Verna L. Baughman, M.D. (Professor, Department of Anesthesiology, University of Illinois at Chicago, Chicago, Illinois). The format for these discussions was new to SNACC because this was the first time the discussion incorporated real-time audience voting into this interactive framework. The first case was a lively discussion of awake craniotomies. There were varying opinions presented on various techniques (asleep-awake-asleep *vs.* awake) as well as favored drug regimens (dexmedetomidine *vs.* propofol/narcotic). The second case involved a patient with an intracerebral aneurysm. The issues of whether to clip or coil the aneurysm were debated as well as techniques of neuromonitoring for this case.

Panel on Postoperative Cognitive Dysfunction

The afternoon session concluded with a very informative talk on postoperative cognitive dysfunction (POCD). The first presentation,

given by Lars S. Rasmussen, M.D., Ph.D. (Clinical Associate Professor, Department of Anesthesia, Copenhagen University Hospital, Copenhagen, Denmark), was entitled "Assessing Postoperative Cognitive Dysfunction with Neuropsychological Tests: Methodology and Pitfalls." Dr. Rasmussen delineated the limitations of neuropsychological testing in the assessment of POCD. He discussed the need for the composition of the test battery to be targeted toward the given patient group of interest. In addition, Dr. Rasmussen elaborated on the problems related to test administration and interpretation when attempting to identify POCD. The second speaker was Eric J. Heyer, M.D., Ph.D. (Professor, Department of Anesthesiology, Columbia University, New York, New York), who gave a wonderful talk entitled "Neurocognitive Dysfunction Associated with Carotid Endarterectomy." Dr. Heyer discussed various anesthetic and surgical techniques for carotid endarterectomy (CEA) and how those factors may contribute to POCD. One of the issues Dr. Heyer addressed was the difficulty of determining whether POCD is a result of the surgical procedure itself or the anesthetic. Dr. Heyer then discussed the possible role of the apolipoprotein E ϵ -4 allele in POCD. He concluded the lecture with a brief review of his study looking at cognitive dysfunction CEA. This study looked at patients undergoing CEA who were evaluated preoperatively and post-

operatively with neuropsychological testing. These patients also underwent genetic testing for the apolipoprotein E ϵ -4 allele. Controls were patients undergoing spine surgery in the prone position. Results showed a similar rate of overall POCD after CEA as compared with previous studies. However, the CEA patients with the apolipoprotein E ϵ -4 allele demonstrated a 62-fold increased risk of POCD in this cohort. This is the first study to link this common genetic polymorphism to POCD after CEA. Satwant K. Samra, M.B.B.S., M.D. (Professor, Department of Anesthesiology, University of Michigan, Ann Arbor, Michigan), gave the concluding lecture of the afternoon session. She reported recent unpublished data and its analysis on neurocognitive outcomes from the Intraoperative Hypothermia during Aneurysm Surgery Trial-2.

After a question-and-answer session with all the panelists, the afternoon session, and the 2005 Annual Meeting, concluded. The society will reconvene at the 2006 Annual Meeting on October 13, 2006, in Chicago, Illinois.

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