REPORT OF SCIENTIFIC MEETING

David O. Warner, M.D., Editor

Society of Neurosurgical Anesthesia and Critical Care Annual Meeting. San Francisco, California, October 10, 2003.

The Annual Meeting of the Society of Neurosurgical Anesthesia and Critical Care (SNACC) was held at the Westin St. Francis Hotel in San Francisco, California, on October 10, 2003, and had an attendance of 179. The SNACC Annual Meeting provides an excellent venue for the discussion of topics that range from basic science developments relevant to clinical neurosciences to newer approaches to the management of patients who present for neurosurgical and neurointerventional procedures. This year's program, under the able direction of Karen Domino, M.D., M.P.H. (University of Washington, Seattle, Washington), consisted of a basic science and clinical keynote lectures, a basic science symposium, and a clinical panel discussion about the latest developments in neurointerventional radiology. In addition, the Annual Meeting is an outstanding forum for the presentation and discussion of the research efforts of a number of basic and clinical scientists with an interest in the neurosciences. Judging from the comments received during the meeting and on the evaluation forms, the meeting was considered to be an outstanding success.

Basic Science Keynote Lectures: Philip J. Horner, Ph.D. (University of Washington, Seattle, Washington), opened the meeting with a presentation entitled "Stem Cells and Regeneration of the Damaged Central Nervous System: You Cannot Fool Mother Niche!" Adult spinal cord stem cells *in vitro* produce neurons and astrocytes, and *in vivo* produce only astrocytes and oligodendrocytes. This glial restriction is hypothesized to be regulated by instructive stem cell "niches" in the spinal cord. Spinal cord injury produces this new instructive glial "niche" initially producing astrocytes and scar formation instead of self-repair. Further elucidation of factors that control stem cells after injury or disease may lead to new strategies that promote self-repair.

Young Investigator Award: Satoki Inoue, M.D., a postdoctoral fellow from the University of California-San Diego, San Diego, California, was the recipient of the SNACC Young Investigator Award for work entitled "Isoflurane and Caspase-8 Inhibition Reduced Cerebral Injury in Rats Subjected to Focal Cerebral Ischemia." Under the direction of Piyush Patel, M.D., F.R.C.P.C., Department of Anesthesiology, University of California–San Diego, San Diego, California, this work demonstrated that a combination of isoflurane and caspase-8 inhibitor (z-IETD-fmk [z-Ile-Glu-Thr-Asp-(IETD)-fluoromethylketone]) produced neuroprotection in a rat model of focal ischemia. Neuroprotection was evident even after a 14-day recovery period. This combination had greater efficacy than the administration of the caspase-8 inhibitor alone. This Young Investigator Award was followed by a walk-around poster discussion session of scientific abstracts.

Clinical Keynote Lecture: Claudia Robertson, M.D., F.C.C.M. (Baylor College of Medicine, Houston, Texas), spoke on "Management of Cerebral Perfusion Pressure after Traumatic Brain Injury." Traumatic brain injury continues in the developed world as a leading cause of morbidity and mortality. The most important cause of cerebral ischemia after traumatic brain injury is hypotension within the first few hours, with intracranial hypertension becoming increasing more important thereafter.

In a recent randomized clinical trial by Dr. Robertson's group to prevent secondary ischemia, cerebral perfusion pressure (CPP)-targeted treatment (CPP of $\geq$ 70 mmHg) with avoidance of cerebral blood flow decreasing therapies (*e.g.*, hyperventilation) was compared with intracranial pressure–targeted treatment. Although the CPP-targeted group had shorter and fewer episodes of jugular venous desaturations, there was no improvement in long-term neurologic outcome. There was, however, a fivefold increase in adult respiratory distress syndrome in the CPP-targeted group. Dr. Robertson concluded that because of the heterogeneity of traumatic brain injury, improved monitoring to detect cerebral ischemia might identify those patients with potential benefit from higher CPP. Her conclusions included the importance of critical care management of traumatic brain injury patients.

Distinguished Teaching Award: SNACC has had a tradition of recognizing the contributions that neuroanesthetists and neuroscientists have made to the specialty of neuroanesthesia and to the larger anesthesiology community. In that spirit, SNACC recognizes the important contributions made by Adrian Gelb, M.B., Ch.B., F.R.C.P. (University of Western Ontario, London, Ontario, Canada), for his continued excellence in teaching and devotion to training and education.

Basic Science Symposium: Of the more recent developments in neurosciences, none has received more attention than the demonstration that anesthetics have a neurotoxic potential in neonatal rodent pups. SNACC was indeed honored to have John W. Olney, M.D. (Washington University School of Medicine, St. Louis, Missouri), present a lecture entitled "Anesthetic Neurotoxicity in Young and Aged Animals." Dr. Olney is an internationally recognized neuroscientist with an interest in neuronal death. In fact, he was the first scientist to coin the phrase "excitotoxicity." Dr. Olney presented some of his more recent work in which he has demonstrated that in adult rats, N-methyl-D-aspartate antagonists cause neurotoxicity that is reversible with anesthetics that are (γ-aminobutyric acid agonists before or at time of exposure. However, (γ-aminobutyric acid agonists anesthetics are just as neurotoxic as N-methyl-D-aspartate antagonists in the developing rat brain. Both trigger widespread apoptotic neuroregeneration. Currently, it is not clear whether the imbalance induced by excitation and inhibition within the brain by anesthetics is responsible for increasing neuronal injury. In addition, whether this neurotoxic effect occurs when anesthetics are administered to humans during vulnerable developmental periods remains to be determined.

Clinical Symposium: The afternoon session concluded with an "Update on Interventional Radiology: What it Means to Your Practice" (with all of the speakers from the University of California-San Francisco, San Francisco, California). The Clinical Symposium began with a presentation by Randall T. Higashida, M.D., Director of Neurointerventional Radiology at the University of California-San Francisco and President of the Association of Interventional and Therapeutic Neuroradiology. His presentation included an update on the results of cerebral angioplasty and stenting, including a discussion of the potential advantages of carotid stenting as a viable treatment alternative for symptomatic hemodynamically significant lesions. However, cerebral angioplasty and stenting has yet to withstand well-controlled, scientifically designed clinical trials as an alternative to carotid endarterectomy.

Wade S. Smith, M.D., Ph.D. (Director of Neurovascular Service, University of California-San Francisco), continued the update with a discussion entitled "Vasospasm Following Subarachnoid Hemorrhage: What's New?" Current standards for detection of cerebral vasospasm include clinical examination and transcranial Doppler studies. Useful adjuncts in the detection of vasospasm may include computed tomographic angiogram, computed tomographic perfusion studies, and magnetic resonance angiography. Dr. Smith also discussed the various therapies for the management of vasospasm, including hypertension, hemodilution and hypervolemia, angioplasty, intraarterial papaverine injection, and intrathecal nitroprusside administration.

The discussion of the clinical studies of aneurysm treatment continued with "Recent Studies on Aneurysm Treatment: How Should Trial Results Change Practice?" by S. Claiborne Johnston, M.D., Ph.D. (Director of Stroke Services, University of California-San Francisco). No randomized trial of ruptured aneurysm treatment had been performed at the time of the presentation; however, there is one study comparing clipping *versus* coiling of ruptured aneurysm. Further randomized studies and outcome studies are necessary to evaluate interventional radiology techniques *versus* surgical clipping.

The final speaker during this part of the program was William L. Young, M.D. (Vice Chair, Department of Anesthesia and Perioperative

Care, University of California-San Francisco), who discussed circulation manipulation for endovascular surgery and focused on manipulating systemic or regional blood pressures as dictated by the needs of the procedure.

Summary: An important function of the Annual Meeting is to provide a forum in which research performed by SNACC members can be presented and critically appraised. This year's meeting was of particular success in this regard. A large number of abstracts were presented during the meeting. The topics ranged from cerebral ischemia/molecular biology to clinical neuroscience/critical care. Discussion of the abstracts, presented in posters, was facilitated by recognized experts in various fields of neurosciences and neuroanesthesia. This served to provide expert feedback, particularly to investigators who are in the earlier stages of their career. Abstracts of the scientific papers are published in the *Journal of Neurosurgical Anesthesiology* (2003; 15:350–87).

The Annual Meeting concluded after a wine and cheese reception. The Society will reconvene at the 2004 Annual Meeting on October 22, 2004, in Las Vegas, Nevada. We encourage members of SNACC and all those with an interest in neurosciences to attend what will undoubtedly be a very successful meeting.

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