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Journal Symposium at the Japanese Society of Anesthesiologists Annual Meeting

Outcomes Beyond the Operating Room

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The Japanese Society of Anesthesiologists and ANESTHESIOLOGY announce the first Japanese Society of Anesthesiologists-ANESTHESIOLOGY Symposium to be held at the 57th Annual Meeting of Japanese Society of Anesthesiologists on June 4, 2010, Fukuoka, Japan.

Fukuoka city lies on the northern coast of Kyushu Island, which is the southwestern part of Japan, about 900 km from Tokyo. Being the closest major Japanese city to the Korean Peninsula and China, Fukuoka has traditionally been a gateway for economic and cultural exchanges with its Asian neighbors. The city is vibrant and attractive, as well as rich in history and nature. Fukuoka is connected with major Asian continents by direct flights, which will facilitate travel for delegates from the Americas, Europe, and Oceania.

This Japanese Society of Anesthesiologists-ANESTHESIOLOGY Symposium, conducted in English, will highlight emerging and important concepts in anesthesia research and clinical practice. In this respect, it will be analogous to the ANESTHESIOLOGY Journal Symposium held each year in conjunction with the American Society of Anesthesiologists Annual Meeting.

This year's topic is Outcomes Beyond the Operating Room. Although preventable anesthetic mortality is fortunately rare, all-cause postoperative mortality is surprisingly high. Approximately 5% of all surgical patients die in the year after surgery; among those older than 65 yr, mortality is approximately 10%.[1] Or to put another way, mortality in the year after surgery is approximately 10,000 times greater than preventable anesthetic mortality.

Given that modern anesthetic drugs are uniformly short-acting, it is by no means obvious that consequences of anesthetic management could last more than hours or days after surgery. But it is reasonable to at least consider whether anesthetic management might influence long-term outcomes, which are outcomes that become apparent weeks, months, or even years after surgery.

There is, in fact, increasing evidence that anesthetic management may have long-term consequences. To the extent that it does, modulating anesthetic management to improve long-term outcomes is an enormous opportunity for the specialty. Potential long-term consequences of anesthetic management include the following:

- Maintaining normothermia[2,3] and possibly supplemental oxygen[4–6] to reduce the risk of surgical wound infection.
- Use of regional analgesia to reduce the risk of cancer recurrence after potentially curative surgery.[7–9]
- Infection and mortality after autologous erythrocyte transfusions,[10,11] especially transfusions of blood stored for more than 2 weeks.[12]
- The effects of hemodynamic control, especially with β blockers, on perioperative myocardial infarction and stroke.[13,14]
- Potential reduction in complications and mortality from tight control of perioperative glucose concentration, especially in critical care patients.[15,16]
- Guided fluid management to reduce complications of major surgery.[17,18]
- Postoperative cognitive dysfunction[19,20] and the potential effects of volatile anesthetics on cognitive development in neonates.[21,22]

Two keynote talks will anchor the Journal Symposium. These talks will provide a framework for subsequent presentation of abstracts and discussion. The speakers will be

- Daniel I. Sessler, M.D., Professor and Chair of the Department of Outcomes Research at The Cleveland Clinic: "Hospital Stay and mortality are increased by a 'Triple

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Low' of blood pressure, bispectral index, and anesthetic level."

- Moritoki Egi, M.D., Clinical Instructor, Department of Anesthesiology and Resuscitology, Okayama University Hospital, Okayama, Japan: "Launching into the postoperative period."

Topical abstracts will be presented as posters, but in addition, four abstracts have been accepted for oral presentation at the symposium; these authors will be offered an opportunity to submit their work to ANESTHESIOLOGY for inclusion in the special symposium issue to be published in 2011. The featured abstracts are as follows:

Low molecular weight hydroxyethyl starch administration is not related to postoperative acute kidney injury: Arata Endo, M.D., Department of Anesthesiology, Jikei University School of Medicine, Tokyo, Japan

The investigators tested the hypothesis that low-molecular weight hydroxyethyl starch does not augment the risk of perioperative renal injury. They conducted a retrospective analysis using both logistic regression and propensity score analyses in patients having intraoperative blood loss exceeding 1,000 ml. The primary outcome was a 50% increase in serum creatinine within 7 postoperative days. Approximately 13% of patients who were or were not given low-molecular light hydroxyethyl starch experienced a 50% increase in creatinine. They conclude that this fluid does not provoke renal injury.

Role of calcium dysregulation and mitochondrial permeability transition for neuronal toxicity after general anesthesia: Hiroyuki Uchino, M.D., Department of Anesthesiology, Tokyo Medical University, Tokyo, Japan

A potential mechanism for volatile anesthetic toxicity is rapid calcium-triggered permeabilization of the inner membrane, so-called mitochondrial permeability transition mediated by concerted action of several important mitochondrial proteins, for example, the adenine nucleotide transporter and the isomerase cyclophilin-D. They present evidence supporting the existence of mitochondrial permeability transition in brain-derived human mitochondria. Sevoflurane, but not isoflurane, increased intracellular calcium in hippocampal slices cultured after 60 min of exposure.

Polymorphism of angiotensin-converting enzyme seriously affects clinical outcome after cardiac valve surgery: Keisuke Nakazawa, M.D., Department of Anesthesiology, Tokyo Women's Medical University, Tokyo, Japan

The investigators tested the hypothesis that differences in insertion or deletion polymorphism of the angiotensin-converting enzyme are associated with clinical outcomes after cardiac valve surgery. Gel electrophoresis and polymerase chain reaction were used to detect polymorphisms in 110 patients. Postoperative blood loss was greater in patients who were not homozygous for insertion genotypes ($P < 0.05$). Postoperative infections and blood transfusion were more common in these patients, and the duration of the intensive care unit stay and mechanical ventilation was significantly longer. Patients with deletion alleles have more serious events than those with insertion genotypes.

Impact of the introduction of remifentanil on postoperative outcome in patients undergoing general anesthesia: Kanji Uchida, M.D., Tokyo University, Tokyo, Japan

Remifentanil is an ultrashort-acting opioid that might shorten the duration of hospitalization. The investigators evaluated the duration of hospitalization before and after introduction of remifentanil into routine practice in Japan. Analysis was restricted to 423,491 patients having eight procedures in which remifentanil was likely to prove beneficial. The duration of hospitalization decreased slightly during the study period; however, total in-hospital medical costs were comparable.

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