

Department of Anesthesiology

Shoichi Uezono, *Professor*
Sachiko Omi, *Associate Professor*
Masaki Kitahara, *Lecturer*
Ichiro Kondo, *Lecturer*
Yasushi Mio, *Lecturer*

Takehiko Nezu, *Professor*
Masanori Takinami, *Associate Professor*
Chieko Fujiwara, *Lecturer*
Kazuhiro Shoji, *Lecturer*

General Summary

The year 2006 was the second academic year that Shoichi Uezono, M.D., served as the Chairperson of the Department of Anesthesiology. Our department provides a wide spectrum of medical care, from conducting preoperative anesthesia assessment to performing the most advanced life-supporting techniques in all perioperative settings, such as cardiac surgery, thoracic surgery, interventional neuroradiology, comprehensive pain management, postanesthesia care unit, and the intensive care unit (ICU). The Department continues to grow in all these areas.

A new recruitment strategy started by Dr. Uezono aims to attract academically oriented physicians with excellent clinical backgrounds. In the past year, we successfully recruited two new faculty members to the Department: Dr. Kitahara was recruited from Teikyo University to direct our new pain management program, and Dr. Uchino, a board certified intensive-care specialist and internist, joined the staff of the ICU to establish a clinical research program in intensive care medicine.

Research Activities

Research continues as a growing and important component of the Department's activities. Research opportunities are available in a variety of areas, including cardiac anesthesia, vascular anesthesia, interventional neuroradiology, pediatric, acute and chronic pain management, critical care medicine, and medical informatics. Department faculty members continue to be invited as visiting professors and guest lecturers at national and international institutions.

Listed below are the ongoing research projects in which the principal investigators are faculty members in the Department of Anesthesiology.

Clinical research

1. Dr. Uezono has been interested in outcome research in pediatric anesthesia. His main focus is to develop a new monitoring device to measure the depth of anesthesia in children to avoid the overdosing or underdosing of anesthetic agents. This year he was invited to write a review article on the usefulness and the limitations of bispectral index monitoring in pediatric patients.
2. Dr. Shoji and his colleagues continue to search for better postoperative pain management. They have found that a new alpha-2 agonist, dexmedetomidine, is a promising drug for postoperative pain relief, and his group completed a clinical trial to

evaluate the efficacy and safety profiles of this new drug.

3. Dr. Kase has developed a new method for detecting small amounts of endotoxin which are not detectable by conventional methods. He is now studying whether extremely minute amounts of endotoxin have any clinical significance in ICU patients.

4. Disseminated intravascular coagulation is a common pathological condition in the ICU. Dr. Uchino, a newly recruited intensive care specialist, has addressed this vexing problem. He is performing a prospective study to validate new guidelines issued by the Japanese Society of Intensive Care Medicine for the treatment of disseminated intravascular coagulation.

Dr. Kitahara and his colleagues from the pain clinic have been interested in neuropathic pain after mastectomy for breast cancer. They have found that antidepressant drugs are effective for treating postmastectomy pain.

Basic science research

1. Dr. Uezono has established a pulmonary hypertension laboratory to investigate gene therapy (antisense nucleoside therapy) in experimental pulmonary hypertension. This year he was invited to the Medical College of Wisconsin in October 2006 to lecture on new treatments for experimental pulmonary hypertension. He received a new Grant-in-Aid for Scientific Research (*kakenhi*) for this research.

2. Dr. Kondo and his group studied the effects of dexmedetomidine on the release of substance P in the dorsal horn of the spinal cord after tissue injury. Their results suggest that the spinal cord is an important site for the analgesic effects of alpha-2 agonists.

The appended bibliography of the department shows that a wide range of investigative and scholarly activities were performed during the past year.

Publications

Uezono S, Mio Y. Monitoring consciousness in the pediatric patient: not just a small adult. *Best Pract Res* 2006; **20**: 201-10.

Iwade M, Nomura M, Uezono S, Ashikawa E, Ozaki M. Effects of dopamine and olpamine on ventricular energetics in sevoflurane-induced acute left ventricular depression in dogs. *J Cardiothorac Vasc Anesth* 2006; **20**: 358-63.

Kitahara M, Kojima KK, Ohmura A. Efficacy of interdisciplinary treatment for chronic non-malignant pain patients in Japan. *Clin J Pain* 2006; **22**: 647-55.

Uchino S, Bellomo R, Morimatsu H, Sugihara M, French C, Stephens D, Wendon J, Honore P, Mulder J, Turner A, PAC/PICCO Use and Likelihood of Success Evaluation [PULSE] Study Group. Pulmonary artery catheter versus pulse contour analysis: a prospective epidemiological study. *Crit Care* 2006; **10**: R174.1-10.

Uchino S. The epidemiology of acute renal failure in the world. *Curr Opin Crit Care* 2006; **12**: 538-43.

Uchino S, Bellomo R, Goldsmith D, Bates S, Ronco C. An assessment of the RIFLE criteria for acute renal failure in hospitalized patients. *Crit Care Med* 2006; **34**: 1913-7.

Sunaga H, Kaneko M, Amaki Y. The efficacy of intratracheal administration of vecuronium in rats, compared with intravenous and intramuscular administration. *Anesth Analg* 2006; **103**: 601-7.

Shibasaki Y, Tachibana S, Omi S. Physiological amino acids in cerebrospinal fluid in pregnant women: comparison with non-pregnant patients. XXV Annual European Society Regional Anaesthesia Congress. Monaco, 2006. Sept.

Hidano G, Kamata A, Nomura M, Ozaki M, Uezono S. Adverse cardiac and neonatal outcomes in pregnant women with congenital heart disease. ASA 2006 Annual meeting. Chicago, 2006, Oct.

Kida K, Ohtani N, Shoji K, Yasui Y, Masaki E. Dexmedetomidine enhances post-operative analgesic effect of epidural neostigmine. ASA

2006 Annual meeting. Chicago, 2006, Oct.

Kondo I, Hobo S, Yasui Y. Ketamine and alpha 2 agonist inhibit noxious stimulation-induced spinal substance P release in rats. ASA 2006 Annual meeting. Chicago, 2006, Oct.

Otani N, Kida K, Shoji K, Yasui Y, Masaki E. Emergence time from sevoflurane and propofol anesthesia co-administered with dex-

medetomidine. ASA 2006 Annual meeting. Chicago, 2006, Oct.

Kase Y, Obata T. Removing endocannabinoids and reducing oxidative stress with polymyxin-B-immobilized fibers in patients with septic shock. 27th International Symposium on Intensive Care and Emergency Medicine. Brussels, 2006, Mar.