

Department of Anesthesiology

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General Summary

The functions of the Department of Anesthesiology are to provide quality patient care, to teach, and to perform research in perioperative medicine, intensive care medicine, and comprehensive pain management. In 2016 we made further advances and great achievements with the support of our faculty, institutional administration, and the Dean of The Jikei University. Below we highlight some of our research achievements in 2016.

Research Activities

Research continues as a growing and important component of the department's activities. The department is committed to enhancing academic productivity and resources by dedicating time to research and granting clinical access to research cases.

The investigators have been successful each year in obtaining peer-reviewed research grants. For one thing, Grants-in-Aid for Scientific Research (*kakenhi*) were awarded to six members of our Faculty in 2016. The department continues to build on the strengths of several outstanding programs: cardiovascular anesthesia, thoracic anesthesia, pediatric anesthesia, regional anesthesia, neuroanesthesia, obstetric anesthesia, intensive care medicine, and comprehensive pain management. Faculty recruitment is targeted at individuals with demonstrated academic and research activities as well as excellent clinical management and teaching skills. In 2015 Dr. Suzuki was recruited to improve our educational programs of sonography. In 2016 he implemented new programs for our residents and junior Faculty to improve the quality of diagnostic procedures in acute care settings.

Our faculty and residents were both well represented at the Japanese Society of Anesthesiologists' annual meeting in Fukuoka and the American Society of Anesthesiologists' annual meeting in Chicago. In addition, members of the department continue to be invited as visiting professors or guest speakers at national and international meetings.

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

Doctors Uezono and Kida have been investigating the protective effects of sedatives in ischemic encephalopathy. Doctor Shimoyama's research has been focused on the mecha-

nism of mitochondria dysfunction-induced peripheral nerve injury. She also has been working to elucidate the mechanism of chemical induced neuropathic pain, which may lead to new therapeutic interventions for this type of pain.

In clinical medicine, several principal investigators from the Department of Anesthesiology deserve mention. Doctor Kondo has been interested in the concept of goal directed therapy and its application to fluid management during surgery for cancers of the head and neck. Doctor Uchino continues to be active in clinical research in the intensive care unit and has been extremely productive in the field of acute kidney injury. Using a large database in the intensive care unit, Drs. Uchino and Yoshida have been attempting to identify predictive values of new onset of atrial fibrillation after noncardiac surgeries. Our pain clinic physicians led by Dr. Kitahara continue to play a pivotal role in establishing practice guidelines for patients with various types of chronic pain. One of their targets is postmastectomy pain.

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

Publications

Eto K, Kondo I, Kosuge M, Ohkuma M, Haruki K, Neki K, Sugano H, Hashizume R, Yanaga K.

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Ikeda K, Liu X¹, Kida K, Marutani E², Hirai S², Sakaguchi M², Andersen LW¹, Bagchi A², Cocchi MN¹, Berg KM¹, Ichinose F², Donnino MW¹ (¹Beth Israel Deaconess Medical Center, ²Massachusetts General Hospital). Thiamine as a neuroprotective agent after cardiac arrest. *Resuscitation.* 2016; **105**: 138-44.

Miyazaki Y, Sunaga H, Hobo S, Miyano K, Uezono S. Pancuronium enhances isoflurane anesthesia in rats via inhibition of cerebral nicotinic acetylcholine receptors. *J Anesth.* 2016; **30**: 671-6.

Izawa J, Uchino S, Takinami M. A detailed evaluation of the new acute kidney injury criteria by KDIGO in critically ill patients. *J Anesth.* 2016 Apr; **30**: 215-22.

Katayama S (Asahi General Hospital), Uchino S, Uji M (Osaka University Hospital), Ohnuma T (Saitama Medical Center, Jichi Medical University), Namba Y (Showa University Fujigaoka Hospital), Kawarazaki H (Marianna University School of Medicine), Toki N (Tokyo Metropolitan Tama Medical Center), Takeda K (Hyogo College of Medicine), Yasuda H (Japanese Red Cross Musashino Hospital), Izawa J, Tokuhira N (Kyoto Prefectural University of Medicine), Nagata I (Kanto Rosai

Hospital). Factors predicting successful discontinuation of continuous renal replacement therapy. *Anaesth Intensive Care*. 2016 Jul; **44**: 453-7.

Izawa J, Kitamura T (Graduate School of Medicine, Osaka University), Iwami T (Kyoto University School of Public Health), Uchino S, Takinami M, Kellum JA (University of Pittsburgh Medical Center), Kawamura T (Kyoto University School of Public Health). Early-phase cumulative hypotension duration and severe-stage progression in oliguric acute kidney injury with and without sepsis: an observational study. *Crit Care*. 2016 Dec; **20**: 405.

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Reviews and Books

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Kawarazaki H (Marianna University School of Medicine), Uchino S. Validity of low-efficacy continuous renal replacement therapy in critically ill patients. *Anaesthesiol Intensive Ther*. 2016; **48**: 191-6.