

Anesthesiology and Clinical Physiology

1. Staffs and Students (April, 2010)

Professor	Haruhisa FUKAYAMA	
Associate Professor	Hikaru KOHASE	
Junior Associate Professor	Shigeharu JINNO	
Adjunct Professor	Syouzou MUROGA, Hisa OKUMURA, Masaaki MIURA, Zenkou Nakamura	Hiroshi SEHATA, Atsuko SUZUKI, Takehiko IJIMA,
Assistant Professor	Fumihiko YOSHIKAWA, Ryo WAKITA	Tomoyuki MIYAMOTO,
Graduate Student	Yukiko BABA, Kanao SAJI, Tomoko MATSUSHITA, Kenta KIKUCHI	Haruka HAIDA, Atsushi NAKAJIMA, Takuya FUNAYAMA,
Hospital Staff	Aya YOSHINO, Tatsuo SANADA, Youhei FUKUMORI, Yusuke KURAMOTO, Hitomi KUNIMORI, Kenzo MAKINO,	Shizuka ANDOU, Tomoka MATSUSHITA, Kazumasa KUBOTA, Saori OHGAMI, Kiyoshi KAMIYA, Kunio AIZAKI
Research Student	Yuko KISHI, Reina ICHIKAWA, Chikako OHE, Yoko IKEDA, Ayako MIZUTANI, Yuki SATO	Natsumi HIRAI, Katsunori MOTOHASHI, Hitomi IZUMIKAWA, Taeka HIRASAWA, Yuichi SATO,
Adjunct Professor of Graduate School	Seiichi KATO, Keiko FUJII	Tomotada HOKAZONO,
Visiting Clinical Instructor	Nobuyuki KONDOU,	Kanae SHIMOMACHI
Resident	Wakako Sumimoto, Takashi KOBAYASHI	Yoriko IKEDA,
Secretary	Natsu SATO	

2. Purpose of Education

Main objective of Anesthesiology and Clinical Physiology in the graduate course is to provide students essential knowledge and skills of general and local anesthesia, management of medically compromised patients in dental clinical setting and oro-facial pain treatment. The subjects including general anesthesia local anesthesia for dentistry, sedation methods, CPR training are scheduled in the 5th grade students. The students learn respiratory and cardiovascular physiology, nature of general anesthetics, local anesthetics, intravenous anesthetics, muscle relaxant agents. As psychosedation is frequently used in dental clinical setting, the students learn and acquire the theory and technical aspects of sedation. It also includes the pharmacological and complicated aspects of local anesthetics and expertise local anesthesia using the conduction block and infiltration anesthesia in oral region. The theory of CPR and AHA CPR guidelines, and practice are also given the BLS, with ACLS sequence.

3. Research Subjects

- 1) Non-invasive drug delivery system
- 2) New aspects of local anesthesia in dentistry
- 3) Mechanism of neuropathic pain and its treatments
- 4) Diffuse noxious inhibitory control, or, conditioned pain modulation
- 5) Clinical research of psycho-sedation and systemic management in dental clinical setting.

4. Clinical Services

Anesthesiology and clinical physiology provides general anesthesia and sedation for oral maxillofacial surgery, managements of medically compromised patients using psychosedation, daycare general anesthesia for handicapped patients, emergency treatment in the dental hospital.

5. Publications

Original Article

1. Wakita R, Nakajima A, Haida Y, Umino M, Fukayama H. The relation between the duty cycle and anesthetic effect in lidocaine iontophoresis using alternating current. *Pain Practice* 2010;10:1-6.
2. Kamiya K, Fumoto M, Kikuchi H, Sekiyama T, Mohri-Lkuzawa Y, Umino M, Arita H. Prolonged gum chewing evokes activation of the ventral part of prefrontal cortex and suppression of nociceptive responses: involvement of the serotonergic system. *J Med Dent Sci.* 2010 Mar;57:35-43.
3. Makino K, Kohase H, Sananda T, Umino M. Phenylephrine suppresses the pain modulation of diffuse noxious inhibitory control in rats. *Anesth Analg* 2010; 110:1215-21
4. Fujii-Abe K, Oono Y, Motohashi K, Fukayama H, Umino M : Heterotopic CO₂ Laser Stimulation Inhibits Tooth-Related Somatosensory Evoked Potentials. *Pain Medicine*, 11(6) : 825-833, 2010
5. Mizutani A, Maeda N, Toku S, Isohama Y, Sugahara K, Yamamoto H. Inhibition by ethyl pyruvate of the nuclear translocation of nuclear factor-kappaB in cultured lung epithelial cells. *Pulm Pharmacol Ther* 2010;23:308-15.
6. Fumoto M, Oshima T, Kamiya K, Kikuchi H, Seki Y, Nakatani Y, Yu X, Sekiyama T, Sato-Suzuki I, Arita H. Ventral prefrontal cortex and serotonergic system activation during pedaling exercise induces negative mood improvement and increased alpha band in EEG. *Behav Brain Res.* 2010 Nov 12;213:1-9.

6. Academic activities

1. Fukayama H: Difference in the degree of infiltration of local anesthesia according to the site of injection. 29th Myanmar Dental Conference and 10th FDI-MDA Joint Educational Meeting. Yangon, Myanmar. January 2010
2. Baba Y, Kohase H, Fujii K, Makino K, Oono Y, Wakita R: Effects of Alpha-adrenergic agonists on pain modulation in diffuse noxious inhibitory controls in human. 13th World congress on pain, September 1,2010, Montreal, Canada
3. Saito N, Yoshioka T, Ikoma T, Ohashi N, Haida H, Ando S, Wakita R, Fukayama H, Umino M, Tanaka J: Drug Releasing Properties of Alginic Acid Layers Electrochemically Deposited on Metal Surfaces. The Tenth Asian BioCeramics Symposium 2010, Indonesia, November 3-4, 2010.
4. Yoshioka T, Saito N, Ikoma T, Ohashi N, Haida H, Ando S, Wakita R, Fukayama H, Umino M, Tanaka J: Development of a Novel Integrated Iontophoresis Electrode Consisting of Metallic and Drug-loaded Layers. Visual-JW2010, Osaka, Japan, November 11-12, 2010.