Oral Presentation Abstracts

Oral 1

Wan-Ting Chen
National Defense Medical Center, Taiwan

Optimization of a Cation Delivery System Based on the Pain-Transduction Channel TRPV1

Blocking hyperactive pain-sensing nerves without disturbing normal pain perception is a desirable strategy for suppressing pathological pain. One can selectively silence aberrant nociception by introducing into sensitized neurons a cationic sodium channel blocker that can only reach its intracellular action site via the large-ion conducting TRPV1 channel. To enhance the efficacy of this therapy, one of the most important factors is the administration strategy of channel blockers. In this study, I used YO-PRO-1 as an indicator of large organic ion entry, to assess the extents to which other TRPV1-permeable organic cations compete with YO-PRO-1 for open TRPV1 channels in kinetic experiments. I found out that the cation permeation via TRPV1 is similar to enzyme-substrate binding mechanism. Denatonium, comparing to common sodium channel blockers, has good permeability and follows the above kinetic feature. The results of this study can be used for alternative analgesia, reducing health risks associated with other commonly used anti-inflammatory drugs and anesthetics. Moreover, the developed transport theory can conceivably be applied in the delivery of other cationic drugs, which can reach more effective drug treatment.

Oral 2

Nguyen Minh Tuan Viet
Ho Chi Minh University of Medicine and Pharmacy, Vietnam

Radioscintigraphy and Radioimmunotherapy of Labelled Monoclonal Antibody 131I-Nimotuzumab in Tumor Bearing Nude Mice

In recent years, radioimmunotherapy (RIT) has become a effective oncologic therapeutic modality. Nimotuzumab is a monoclonal anti epidermal growth factor receptor (EGFR) antibody which is used in head and neck cancer therapy in the mechanism of competition with EGF. In this study, the preclinical evaluations were performed on the radioscintigraphy and radioimmunotherapy of radiopharmaceutical ^{131}I-nimotuzumab in nude mice bearing human HEp 2 tumors. Nimotuzumab was radioconjugated with radioisotope iodine-131 and purificated before using in the experimental evaluations. The size of the growing tumors in the right thigh of the nude mice is in the range of 10-18 mm in diameter. The nude mice were injected intravenously through the tail vein with a single dose 100 μCi of the assigned concentration of ^{131}I-nimotuzumab. At 24, 48 and 72 hrs. following injection, mice were periodically anesthetized and scanned with both Single Photon Emission Computed Tomography (SPECT) and Cyclone Plus Phosphor Imager B431200. The 10 nude mice in each therapeutic group were injected of 0.9 % saline, 20 μg of cold nimotuzumab and 150 μCi of ^{131}I-nimotuzumab. The experimental nude mice were well cared for 8 weeks and their tumor sizes were monitored everyweek. The whole body imaging of cancer bearing mice showed the biodistribution of radioimmunoconjugate ^{131}I-nimotuzumab in tumor. The results in the tumor treatments using ^{131}I-nimotuzumab were showed that there were significant differences in tumor size compared with two other groups. The study indicated that ^{131}I-nimotuzumab is an ideal targeted radiopharmaceutical for diagnoses and therapeutics of head and neck cancer.

Oral 3

Tran Anh Khoa

Ho Chi Minh University of Medicine and Pharmacy, Vietnam

Preclinical Evaluations of 99mtc-Nca90 Monoclonal Antibody for Inflammation Imaging and Tumor Diagnoses

Monoclonal anti NCA90 (nonspecific cross-reacting antigen-90) antibody was labeled with technetium-99m, which was used for inflammation imaging and tumor marker. The labelled antibody is located in inflammation areas by mechanism of binding to NCA90 surface antigen on granulocytes. This studies were described in the preclinical evaluations of ^{99m}Tc-NCA90 antibody in the experimental inflammation animals and patients. The labeled NCA90 monoclonal antibody was injected into 18 normal and 3 inflammation rabbits with the range of radioactive 0.25 mCi, 0.5 mCi, 2.0 mCi, 5.0 mCi doses and the biodistribution, the clearance and the radioimmunoscintigraphy using Gamma Camera Symbia T6 (SPECT-CT) were investigated. The specific binding was performed invitro with granulocytes which were isolated from inflammation patient with 10^7 - 10^8 cells per condition used compare with non specific binding. The immunoreactivity of ^{99m}Tc-NCA90 antibody to excess CD66c antigen was carried out and the bound was separated using niken nitrotriaceticacid agarose affinity chromatography. The specific processes of accumulation of granulocytes binding ^{99m}Tc-NCA90 antibody in the inflammatory site after 10 minutes to 6 hours injection were found. The clearance of radiopharmaceutical from the body was more than 90% after 24h injection. The results in the specific binding evaluations of ^{99m}Tc-NCA90 antibody to granulocytes from inflammation patients were 72.74% ± 12.14%. Nonspecific binding was 2.91%± 0.55%. The immunoreactivity of ^{99m}Tc-NCA90 antibody to CD66c recombinant protein his-tag on affinity chromatography was 78.4%. This is proving that monoclonal anti NCA90 antibody is unchanged immunoreactivity after labelling with radioactive. The preclinical evaluations prove the specific binding of ^{99m}Tc-NCA90 to NCA90 antigens on the surface of granulocytes. This radiopharmaceutical is ideal for diagnostic inflammation imaging in clinical.

Oral 4

Indravina Tan

International University, Cambodia

Diet and Nutrition of Diabetes Mellitus Type Ii (T2dm) Patients in Cambodia

Introduction: While the world refers T2DM situation as “Diabetic Epidemic”, approximately 255 thousands of Cambodians are living with diabetes. Maintaining a good glycemic control to prevent complications is the main goal in treatment, which includes diet modification, exercise and proper medication.

Objective: To demonstrate T2DM patient’s daily diet and knowledge of carbonhydrate food.

Method: 100 samples (73 females) from Preah Kosamak Hospital, aged 35 to 75, were diagnosed T2DM from 3months to 18 years and ongoing same type of medication. Questionnaires consist of 2 sections. Section 1 focus on daily diet of the patients (according to the Plate Method). Section 2 assess dietary knowledge with true/false questions of 10 carbohydrate foods. If they answered 1-3 correctly consider poor knowledge, 4-6 considers moderate knowledge and 7-10 considers good knowledge of carbohydrate food. Hemoglobin A1C (3-6months) was noted to determine the control of glycaemia.

Results: 85 samples have 3 mealtimes. Approximately 90% (HbA1C >8%) consume starch 3/4 (White rice), protein (fish, pork) and vegetables for about 1/4 of their portion. The remaining 10% consumes vegetables about ½ and starch ½ of their portion, with small amount of protein (dried salty fish). These patients’ HbA1c: 7-8%.

74% of the samples aware of the need of diet modification but do not know how. Only 11% scored 7-10, which considers good knowledge of carbohydrate food.

Conclusion: Many samples have imbalance nutritional consumption, lack of dietary knowledge results in poorly controlled T2DM. Diet modification and education should be widely addressed in Cambodia in order to achieve effective treatment.

Oral 5

Yu Ueda
Faculty of Medicine, TMDU (Japan)

Illness Narrative in Cultural Clinical Practices and the Reasoning Model: Exploratory Medical Anthropological Approach Using the MINI

Despite extraordinary progress in biomedical technology and health care services, there is growing criticism of the depersonalization of clinical practice and the limits of medical knowledge. From the rise of this kind of clinical question, Kleinman proposed the concept called explanatory model, in which he explains the disease as the psychosocial experience of suffering illness. McGill Illness Narrative Interview (MINI) is the semistructured interview invented in McGill University as the tool to qualitatively analyze the influence of the culture on the illness. The objective of this study was to examine from the perspective of medical anthropology how psychiatric patients make sense of their illness experience when receiving treatment. We observed medical interviews of two patients at the psychiatry department. Toward one of two, we conducted the Japanese version of the MINI, which in advance we translated from the original version. The data were examined using thematic context analysis. The use of MINI requires understanding the model of three reasoning processes (chain-complex, prototype, explanatory model) advocated by Young in which people use medical knowledge to produce the statements whose meaning we wish to learn and also taking the condition of patients and relation between a doctor and them into consideration. Finally, we propose that the MINI is useful qualitative research method and have curing effect in itself. Clinicians could employ the MINI to trace the cognitive structure and affect of patients.

Oral 6

Yuriko Wada
Department of Human Pathology, TMDU (Japan)

Functional Aspect of Human-CHAC1 in H.Pylori-Induced Gastric Carcinoma

CHAC1, Cation Transport Regulator-Like Protein 1, was discovered as a new enzyme in γ-glutamyl cycle which has a similar structure as GGCT (γ-glutamyl cyclotransferase). The γ-glutamyl cycle is the synthesis and degradation of Glutathione (GSH) which is the important protein for maintaining cellular redox levels. In this cycle, GGCT controls GSH level cooperating with other enzymes, however recently it was shown CHAC1 can degrade GSH directly by itself.
H.pylori infection as a main cause of stomach cancer is a well-known mechanism. However, many details have not been discovered yet. According to several studies, H.pylori infection leads to endoplasmic reticulum (ER) stress that causes a decrease of GSH and an increase of reactive oxygen species (ROS). I hypothesize it is CHAC1 that controls these factors in response to ER stress caused by H. pylori infection and that CHAC1 is the key protein to initiate the carcinogenic pathways.
In addition, a monoclonal antibody against CHAC1 has been produced, therefore the widespread expression of CHAC1 in various cancers can be investigated. As a result of histo-pathological analysis with this antibody, I found that CHAC1 expression is up-regulated in not only stomach cancer but other cancers as well.
This research is the collaborative project between Department of Human Pathology, TMDU and The John Curtin School of Medical Research (JCSMR), The Australian National University. Last year I went to JCSMR to carry out this research for several months. I would also like to talk about the research experiences in Australia as well.

Oral 7

Min Chao
National Defense Medical Center, Taiwan

An Exploration of the Neuroprotective Effect and Anti-Inflammatory Mechanisms of Liver X Receptor Activation in Experimental Intracerebral Hemorrhage

Intracerebral hemorrhage (ICH) is a subtype of stroke, with high rates of mortality and morbidity. Increasing evidence shows that cerebral inflammation is involved in the progression of ICH-induced brain injury. Cerebral inflammation following ICH is mediated by cellular components, such as leukocytes and microglia, and molecular components, including chemokines, cytokines, matrix metalloproteases (MMPs) via nuclear factor-kappa B (NF-κB) signaling. These inflammatory events may contribute to blood-brain barrier (BBB) disruption and brain edema formation, which further cause neuronal death and functional deficits. Both clinical and animal evidence suggest that cerebral inflammation plays a detrimental role in ICH. Clinically, plasma levels of pro-inflammatory cytokines correlated with deterioration and poor outcomes in patients. In parallel with clinical findings, suppression of cerebral inflammatory responses improved both histological and functional outcomes and reduce brain edema in animal studies. Thus, defining the signals that control cerebral inflammatory responses has important implications for modulating the disease processes following ICH.

Liver X receptors (LXRs) are nuclear receptors that regulate cholesterol metabolism at the transcriptional level. Two isoforms of LXRs, LXR-α and LXR-β, have been identified. Both of them have highly similar DNA or ligand-binding domain and are present in the central nervous system. Emerging evidence shows that activation of LXRs exerts anti-inflammatory activity at the transcription level. LXR agonists attenuate inflammation by blocking NF-kB DNA-binding activity, and reduce the expression of inflammatory mediators such as inducible nitric oxide synthase, cyclooxygenase-2, pro-inflammatory cytokines and chemokines in cultured microglia and astrocytes. Also, LXRs agonists exert neuroprotection and attenuate functional deficits in experimental cerebral ischemia.

Oral 8

Thiha Tin Kyaw
Moe Dental Clinic, Myanmar

Myanmar: A Fascinating Place

Myanmar, formerly known as Burma, is one of the association of Southeast Asian Nations (ASEAN). It is located between two giant countries namely India in the west and China in the east. It is also surrounded by Bangladesh, Laos and Thailand. It is also known as The Golden Land due to the presence of many historical pagodas enshrined with gold plates. The Shwedagon Pagoda, The Golden Rock Pagoda (Kyaiktiyo Pagoda), Bagan Pagodas and The Mahamuni Pagoda etc,... are famous. Besides, The Inle Lake, Mount Popa and Ngapali Beach are fascinating places to visit. Some ancient spots like stone-inscription caves of Buddhist scriptures and some old colonial buildings are also the places to impress the visitors. The cultural dances of residing different ethnic groups attracted the audiences. The charming smile and the hospitality of people also enhance the pleasure of visitors. Last but not the least, the Vipassana meditation practise prevailing the peace and tranquility of mind for who so ever practised fulfills the country with great fascination.

Oral 9

Sylvia Lim Sze Fen

University of Malaya, Malaysia

Unmet Dental Needs and Barriers to Care among Children with and without Learning Difficulties

Objectives: To investigate the caregiver's perceived unmet dental needs and barriers to care among children with learning difficulties compared to normal children in Sekolah Kebangsaan Taman Maluri, Kuala Lumpur.

Methods: Pilot-tested questionnaires were distributed to all the students studying in SKTM. Analysis of unmet dental needs and barriers between children case and control groups were carried out using Chi-square. Barriers with significant Chi-square results were further tested with multivariate logistic regression to investigate for possible confounders.

Results: From the total of 225 distributed questionnaires, only 41 caregivers of learning-disabled children (case study) and 50 caregivers of normal children (control group) responded. 23.1% of learning-disabled children have perceived unmet dental needs, though more than half of them last visited dentist within one year ago. Almost all caregivers (case group) believed that their child needed dental treatment within the past 12 months (95.1%). Regular dental check-up (27.1%) presented as the highest perceived need, followed by scaling (19.8%) and extractions (14.6%). Both groups depicted similar trends in dental visits whereby majority received dental treatment in school. Difference in unmet dental needs was found not statistically significant. Following comparison with control group, learning-disabled children reported statistically significant barriers related to child behavior (fear, anxiety, inability to communicate, difficult in understanding instruction, uncooperative) and unwillingness of dentist to treat the child. Low income and long working time were confounders identified in this study.

Conclusion: Learning-disabled children have high unmet dental needs despite regular dental visits. Access to dental care is mainly hindered by child's behavior and dentists' attitude.

Key words: Learning Difficulties; Unmet Needs; Barriers to Care; Disabled Children; Dental Care for Disabled; Control Groups.

Oral 10

Citra Kusumasari

University of Indonesia, Indonesia

Caries Removal of Chemomechanical Technique

Proper philosophy in minimal invasive treatment will lead to paradigm change in caries treatment from surgical model to the medical model. One of medical model principal is doing caries removal only in the degradated email and the infected dentin while leaving the affected dentin. Caries removal with chemomechanincal technique (Carisolv®, MediTeam Dental AB, Sweden) is a medical model concept that more developed nowadays. Leaving soft dentin, demineralized and relatively sterile (affected dentin) on the cavity base is a safe thing to do. In doing remineralization and healing on the left affected dentin, application of biomimetic material that releases fluor, strontium, calcium, and phosphate is needed. Biomimetic material is material that results in one or more of natural phenomena in biological condition and biocompatible. This concept is very important in restorative dentistry. Glass ionomer cement (GIC) is one of the material that meets the requirements of biomimetic material concept.

Key Words: Caries, Chemomechanical Technique, Affected Dentin, GIC.

Oral 11 **Phirun Sorn**
University of Health Sciences, Cambodia

Dental Situation in Cambodia

Introduction: Cambodia is a developing country in Southeast Asia. Many Cambodian live below the poverty line and have little knowledge of oral hygiene. As the result, Dental problems occur more frequently in Cambodia. Almost everyone experiences toothache at one or many times. Strangely, in Cambodia we have two type of dentist. One is an official dentist and the other is a family dentist. What are the different between these two kinds of dentists?

Official dentist: Official dentist (Doctor of Dental Surgery), who graduate from dental school by completing 7 years of academic which include foundation year and the final year of internship. After that, Students are required to publish a thesis and take national exit examination. Being a DDS is very different from being a family dentist even the working place and knowledge. DDS should be able to pursue their knowledge and become a specialist on many scientific fields such as Implant, Orthodontic, Oral Pathology, surgery etc. They work in the standard dental clinic as well as various convenient materials.

Family dentist: Family dentist is a dentist who never attended school nor seminar. They being a dentist by follow their family technique. They could do some simple treatment such as filling, simple extraction and prosthodontics. They did many complicated problem on patient such as put on the crown and bridge without root canal treatment, nerves injuries during extraction etc. Normally, they work in their own house with one dental unit.

Oral 12 **Nivedhitha Sundaram Muthiah Pillai**
Amrita Institute of Medical Sciences, India

Bi-Layered Construct for Simultaneous Regeneration of Alveolar Bone & Periodontal Ligament

Periodontal disease causes severe inflammation, alveolar bone loss, tooth loss and other severe complications. This would require simultaneous regeneration of alveolar bone and periodontal ligament as an effective treatment. To recreate the complex architecture of the periodontium,we developed a bi-layered scaffold consisting of poly(caprolactone) (PCL) multiscale (micro/nano) electrospun fibrous membrane [to mimic and regenerate periodontal ligament (PDL)] and a chitosan/calcium sulfate polymeric scaffold (to mimic and regenerate alveolar bone). The bi-layered construct was characterized using SEM, FTIR and XRD. The SEM results showed the porous nature of the polymeric scaffold and the formation of beadless electrospun multiscale fibers. FTIR and XRD spectra confirmed the presence of calcium sulfate in the scaffold layer. Protein adsorption was significantly higher on the developed construct in comparison to the control. The developed construct was cytocompatible to human dental follicle stem cells (hDFCs). The chitosan/calcium sulfate scaffold layer showed enhanced alkaline phosphatase activity compared to the control and the PCL multiscale electrospun fibrous membrane also showed enhanced periodontal ligament associated protein-1 (PLAP-1) and COL-1 expression compared to the control. Hence the bi-layered construct favored the osteoblastic and fibroblastic differentiation of DFCs. Overall these results show that this bilayered construct might serve as a good candidate for the simultaneous regeneration of the alveolar bone and periodontal ligament.

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Oral 13 **Pa Pa Kay Khine**
Super Dent Dental Clinic, Myammer

Dentistry in Myanmar

Aims: To share the general knowledge about History of Dental University in Myanmar and to be familiar with interesting places and festivals of Myanmar.

My presentation is composed of 3 sections:

1.The History of my mother university (Yangon)

It is not so easy to be a Dental University, Yangon. Our former teachers faced with too many limitations at that time. I would like to present how the development of our university from the state of institute together with old rare photos. I will also describe about the dedication of our former teachers who established the dental institute.

2. Oral Health Status of Myanmar

Nowadays the occurrences of the dental diseases are dramatically increased within these decades in my country. I will present you with the table showing the percentage. Also Dental Surgeons and Population ratio of the country can't be negligible.

3. General Knowledge about Myanmar and My Hiking experiences

The Golden Land, Myanmar is one of the beautiful lands in South-East-Asia. There are lots of interesting places in my country and it is also full up with fascinating festivals in every month. There are also too many beautiful mountains in my motherland. I have been to some of them and I will share their beauties with photos together with my hiking experiences.

Oral 14 **Wuttapon Sadaeng**
Naresuan University, Thailand

The Effect of Etching Times on Microtensile Bond Strength of Sealant on Remineralized Enamel Surface

Objective: To evaluate the effect of etching times on microtensile bond strength of dental sealant to remineralized enamel surface.

Method: Ninety six extracted sound human molar teeth were collected from oral surgery clinic, Naresuan University. Each buccal enamel surface was prepared on a resin block. An artificial caries-like lesion was produced by suspending the specimens in demineralized solution at 37ºc for 16 hours and submitted to topical fluoride vanish. The vanished specimens were immersed in artificial saliva at 37ºc for 1 week, divided into 4 groups randomly and etched with 37% phosphoric acid corresponding to etching times 10S, 15S, 20S and 25S. The sealant was applied on enamel surface to build up a sealant block. Each specimen was longitudinally cut into a series of 1 mm. - thick slices. One slice from one specimen was trimmed to an hour glass shape with 1 mm. - width of constricted area. The microtensile bond strength test was performed and the fracture patterns of failure were observed.

Result: The microtensile bond strengths of dental sealant for 10s, 15s, 20s and 25s etches were 16.23±3.12 MPa, 17.24±3.79 MPa, 18.79±2.99 MPa and 17.68±2.50 MPa respectively. The etch time 20s showed significant highest microtensile bond strength. The lowest value of microtensile bond strength was found in 10s etched group. While etch time 20s and 10s were no significant difference among 15s and 25s etch time. SEM examination revealed majority of samples were classified as mixed failure pattern.

Conclusion: Microtensile bond strength of 20-second etch on the remineralized enamel surface was highest. However, the 15s and 25s etching time shows no statistically significant difference compared to the 20s group.

Key words: Microtensile bond strength, sealant, remineralized, enamel

Oral 15

Nguyen Van Thai
Hue University of Medicine and Pharmacy, Vietnam

Discover the Hidden Charm of Vietnam and Hue City

Tet (Lunar New Year) is time for family reunion and paying respect to ancestors and the elders. Ao dai and pho could be the signatures of Vietnam. The Ao Dai has become the symbol of the feminine beauty and the pride of the Vietnamese people. Pho consists of flat rice noodles in a light, meat-based broth and is served with fragrant leaves. Seeking for an unforgettable experience in Vietnam? Discover it on a motorbike and you will see a real Vietnam.

Hue, recognized as World Cultural Heritage, is an ancient capital located in central Vietnam on the banks of Huong River. Whether you want to visit historical or religious buildings, explore nature scenes, or please your hungry stomach, Hue can satisfy all. Going to the Imperial City and taking a dragon boat to visit tombs of Nguyen emperors and Thien Mu Pagoda are must-do activities. Lang Co Beach and Bach Ma National Park are places to relax and blend into nature. Awaken your senses with these five must-try foods: bun bo, banh khoai, com hen, banh beo-banh nam-banh loc, and lotus sweet soup. Finally, enrich your trip with two biennial festivals: Hue Festival (even years) and Hue Traditional Craft festival (odd years).

After six years of studying dentistry, graduate students are entitled as Doctor of Medicine major in Odonto-Stomatology. Besides mandatory curriculum, students actively join many voluntary activities and dental public health programs. Graduate examination could be either thesis defense or theoretical and practical examination based on student's score.

Oral 16

Mengke Ge
West China School of Stomatology, Sichuan University, China

LLLT: A Promising Technique to Shorten Orthodontic Treatment Duration

Orthodontic treatment, based on tooth movement, is a time-consuming procedure which usually takes 20–30 months treatment duration. This long-term treatment is not only burden-some for patients, but also is apt to cause a variety of side effects. Therefore, shortening the orthodontic treatment duration is desired.

Compared with drug injections, electric stimulation, pulsed electromagnetic fields and corticotomy which were also proved to speed up orthodontic tooth movement, LLLT has distinct advantages. It is deemed to be such a promising technique in dentistry owing to its multiple bio-stimulatory effect, non-invasive manner, and easy access.

Several preliminary experiments clinical trials have investigated the effect of LLLT on accelerating orthodontic tooth movement. Thus we conducted a meta-analysis to comprehensively evaluate, in an evidence-based way, the effectiveness of LLLT on accelerating tooth movement in orthodontic treatment.

Oral 17 **Mohamed Moustafa Said**
Department of Maxillofacial Prosthetics, TMDU (Egypt)

An Overview about Maxillofacial Prosthetics in TMDU

Maxillofacial Prosthetics is subspecialty of Prosthodontics that involves prosthetic treatment for patients with defects in oral and/or maxillofacial regions. The main goal of the research in our department is to establish a novel theory and feedback it to the clinic to improve the quality of life of maxillofacial defect patients. In this respect, we are focusing on several projects:

1. Diagnosis of functional impairment in patients with a maxillofacial defect
2. Treatments for functional rehabilitation of patients with a maxillofacial defect
3. Masticatory evaluation in patients with a maxillofacial defect
4. Speech evaluation in patients with a maxillofacial defect
5. Development of new materials for facial prosthesis.

In this presentation, we will give an insight about the methods used to evaluate the prosthetic treatment outcomes of maxillofacial defect patients treated in our department's clinic.

Oral 18 **Trang Ngoc Nguyenvo**
Department of Oral Implantology and Regenerative Dental Medicine, TMDU (Vietnam)

Ligature Induced Peri-Implantitis:
Tissue Destruction and Inflammatory Progression in a Murine Model

Background: Canines have been extensively used in peri-implantitis study. However, mice would be advantageous concerning the precise pathological progression mechanism and host responses to this inflammation.

Aim: to evaluate the possibility to establish an alternative murine model of peri-implantitis.

Material and methods: Thirty male C57BL/6NCrSlc mice (4 week-old) were used. Maxillary left first molar was extracted. Eight weeks after extraction, a custom-made pure titanium self-tapping screw type implant (0.8x1.2 mm) was placed. Four weeks later, a 5-0 silk ligature was applied under the implant head to induce peri-implantitis. All animals were sacrificed at 0 (before ligatures), 7, 14, 21 and 28 days after ligatures for radiological and histological analysis to measure bone level. Osteoclast number, density and distribution were examined after TRAP staining.

Results: Bone levels before ligatures which were 0.81 ± 0.04 mm (mesial), 0.84 ± 0.03 mm (distal), 0.9 ± 0.06 mm (buccal) and 0.84 ± 0.09 mm (palatal) decreased significantly to 0.37 ± 0.03 mm (mesial), 0.37 ± 0.07 mm (distal), 0.53 ± 0.03 mm (buccal), 0.45 ± 0.04 mm (palatal) after 4 weeks of ligatures, respectively ($p < 0.01$). Osteoclast numbers at all post-ligature time points increased significantly ($p < 0.05$). However, their density at day 28 decreased significantly compared to that of day 21 ($p < 0.05$).

Conclusion: Inflammatory response followed by significant peri-implant bone loss suggests 4 weeks ligation is sufficient to successfully induce peri-implantitis in a novel C57BL/6 mice model. This animal model would open a new avenue to study peri-implantitis.

Oral 19

Atsuko Tagami

Department of Cariology and Operative Dentistry, TMDU (Japan)

Effect of Curing Mode and Restoration Thickness on Tensile Bond Strength of a Dual-Cure Resin Cement to Dentin

<Purpose> The purpose of this study was to determine the effect of curing mode and restoration thickness on microtensile bond strength (μTBS) of a dual-cure resin cement to dentin.

<Materials and Methods> Indirect composite disks (1, 2 and 3 mm thickness) were prepared and light intensity of a halogen light curing unit through each composite disk was measured. Two dual-cure resin cements, Panavia V5 and Panavia F2.0 (Kuraray Noritake Dental), were used with either dual-cure mode (DC) or chemical-cure mode (CC) to bond a composite disk to dentin. After the bonded specimens were stored in water for 24 hours, μTBSs were measured at a crosshead speed of 1 mm/min. The data were statistically analyzed by two-way ANOVA with Bonferroni's correction (α=0.05).

<Results> The light intensity [mW/cm2] was attenuated with thickness of a composite disk: 600 (0 mm), 200 (1 mm), 90 (2 mm) and N.D. (3 mm), respectively. The μTBSs of Panavia V5 and Panavia F2.0 [MPa] were 54.2±11.3 and 40.4±6.8 (0 mm, DC), 39.4±6.4 and 22.2±6.7 (1 mm, DC), 28.2±4.5 and 17.1±5.0 (2 mm, DC), 24.3±5.5 and 12.0±3.4 (3 mm, DC), and 22.9±5.2 and 9.1±3.0 (3 mm, CC), respectively. Two-way ANOVA indicated that both curing condition and type of cement affected dentin μTBS ($p<0.001$).

<Conclusions> The dentin μTBSs of the resin cements tended to decrease with increase of a composite thickness due to light attenuation. Panavia V5 provided higher dentin μTBSs than Panavia F2.0 in the same restoration thickness and curing mode.