Periodontal Self-Examination: Is patient able to do it?

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Objectives: To assess the ability in performing periodontal self-examination and periodontal health status in self-detection of periodontal disease. Methods: A cross-sectional study involving eighty-six patients with mean age 47.26 ± 13.4 years old attended dental Polyclinic of Universiti Kebangsaan Malaysia, Kuala Lumpur. Eligible patients presented with score 3 and 4 from Basic Periodontal Examination (BPE) were selected. All patients performed periodontal self-examination according to the illustrated written instruction manual using periodontal self-examination kit given to patient. Clinical evaluation performed by trained examiner and patients’ findings was compared. Data were analyzed using SPSS software. Results: From 86 patients recruited, 58.1% (n=50) was female with Malay ethnicity (79%) presented with mean total number of teeth 23.6 ± 6.0. The mean probing pockets depth was 3.4± .83mm and mean clinical attachment level 3.8 ± 1.17mm. 58.1% agreement found in bleeding on brushing. Generally, 68.6% reported this self-examination technique was not difficult to carry out. The easiest instruction was examining the tooth mobility (58.1%) and the most difficult item was examined color of gingiva (45.3%). In comparison with other items, inspection of bleeding on brushing showed the most informative (50%). Conclusion: From this study, periodontal self-examination was possible to be performed by patients in early detection of periodontal disease with the guide from the good illustrated instruction manual.
The Relationship of Salivary Urea Levels and Dental Calculus Index in Children with Chronic Kidney Disease stage five

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Objectives: The objective of this cross sectional, case-control study was to explore and determine the association between salivary urea and dental calculus in Chronic Kidney Disease (CKD) stage five children. Methods: CKD stage five child patients from HKL and matched healthy controls from UKM Dental Polyclinic were recruited. Patients were examined clinically for Simplified Debris Index (DI-S), Simplified Calculus Index (CI-S), Simplified Oral Hygiene Index (OHI-S) and Volpe-Manhold Index (VMI). Subjects were asked to record daily oral hygiene habits and unstimulated saliva samples were collected for the analysis of urea concentration. The latter was quantitatively measured using the technique consisted of Jung reagent and spectrophotometry. Related clinical and laboratory information were also extracted from patients’ medical records. Results: A total of 33 (33.3%) CKD stage five patients and 66 (66.7%) healthy subjects participated in the study. The oral hygiene status was found to be similar between the two groups but CKD stage five patients had significantly higher calculus deposition (CI-S: 0.35 ± 0.29) as compared to healthy controls (CI-S: 0.27 ± 0.34), p=0.037. Salivary urea of CKD patients was 10 to 20 folds higher than in controls (15.13 ± 5.67 mmol/L and 1.34 ± 0.91 mmol/L respectively, p=0.000). In addition, a statistically significant association was found between salivary and serum urea of CKD stage five patient ($r_s$=0.513, p=0.002). However, no statistically significant association was found between salivary urea and CI-S, oral hygiene habits, duration and type of dialysis. Conclusions: High salivary urea levels have been documented as being one of the contributing factors for calculus formation. However, the calculus deposits in CKD stage five patients in this study are not linked to the high salivary urea levels in these patients. One of the causal factors for the low to moderate levels of calculus deposits found in CKD stage five patients is most probably due to poor oral health awareness in their parents. Improvement in the multidisciplinary management of CKD stage five patients involving both medical and dental personnel are thus required to ensure optimum oral health in these patients.
O – 03 (non-competing)

Knowledge and attitude regarding e-cigarette among health professionals in a university setting

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Introduction: E-cigarettes have gained considerable popularity since their invention in 2003, and continuing popularity is generating considerable debate among tobacco control and public health specialists. Regarding e-cigarette, health professionals are confused lot today, about it being a nicotine replacement therapy or just a gateway to traditional cigarette smoking. Objectives: The objectives of this study were to determine knowledge and attitude of health professionals working in university settings in Malaysia. Materials & Methods: A validated questionnaire was used to collect data by using Google form. The questionnaire was sent out to health science faculties in various universities in Malaysia via emails. Ethics approval for the study was obtained from the institutional review board and informed consent was obtained from the participants. Descriptive statistics were conducted to obtain the results. Results: Almost 67% of the participants had no knowledge about the prevalence of e-cigarette use in Malaysia. Similarly 69% had no knowledge about the FDA(US) disapproval of e-cigarette as a traditional cigarette cessation aid. Majority of the participants (86%) agreed for the need to include emerging methods of tobacco use such as e-cigarette in the undergraduate curriculum. Around 97% of the participants opined the necessity for workshops to be offered to clinicians/academicians updating them on the emerging trends of tobacco use. Conclusion: Knowledge regarding e-cigarette usage and its harms is very pooramong the health professionals in Malaysia. The educators in the health profession need to be updated about the newer methods of tobacco delivery so that the correct information is passed on to the students and the general public.
An In-Vitro Study To Compare Titanium Surfaces Biofunctionalized With SBF

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Introduction: One of the fundamental factors of dental implant therapy is the occurrence of osseointegration. The surface of the implant plays a key role in its success. There has been a shifting paradigm in implant surface technology in recent times. Objectives: This study interrogates the viability of coating commercially pure titanium surfaces and titanium alloy surfaces with a thin hydroxyapatite coating using a simulated body fluid (SBF) solution. The possibility of achieving the required hydroxyapatite coating and roughness in a short period of time is also investigated. Methodology: A thorough analysis was undertaken to investigate the consequence of the time of coating, 3, 4, 5, 6 and 7 days respectively, on the morphology and the chemistry of the hydroxyapatite coatings. Prior to immersion in SBF, the samples were sandblasted and acid etched to mimic the morphology and roughness of commercially available dental implants. Analysis of the surfaces and their coatings was performed with Alicona, Scanning Electron Microscope, X-Ray Diffraction and Fourier Transform Infrared Spectroscopy. With sandblasting and acid etching, it was possible to achieve an average roughness (Sa) of 1.684 ± 0.101 µm for pure titanium surfaces and 1.309 ± 0.061µm for titanium alloy surfaces. Results: The SBF aided in the formation of a crystalline hydroxyapatite coating on all the samples. The coatings were uniform and had roughness values higher than the underlying substrate. The highest roughness values for coatings on pure titanium surfaces were obtained at 7 days of immersion in SBF with Sa values of 2.880 ± 0.248 µm. However, in the titanium alloy surfaces it took 5 days of immersion in SBF to achieve the roughest coatings with Sa of 2.696 ± 0.619 µm. Discussion & Conclusion: This study illustrates that it is possible to obtain a hydroxyapatite coating on pure titanium and titanium alloy substrates in a short period with roughness values that favour the ultimate goal of implants therapy, that is, osseointegration.
Marginal Adaptation of Indirect Composite Crowns

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Objectives: The aim of this study was to assess the marginal adaptation of crowns produced using different types of indirect composite restorative systems (Ceramage Crowns and SR Nexco Crowns) in comparison to Full Metal Crowns. Methods: 1 maxillary first premolar frasaco™ tooth was selected. The tooth was prepared follows the standard manner of all ceramic crown. Silicone putty was used as the tooth preparation template with key lock design. 45 metal dies were produced with the conventional lost-wax technique. An overall of 45 crowns were fabricated for this study. The crowns were divided into three groups with 15 specimens in each group (Ceramage, SR Nexco and Full Metal Crowns). Each individual crown has been placed on the metal die and was cemented with Rely X™ luting cement according to the manufacturer’s recommendations. The mounted tooth specimens were sectioned mesiodistally with an ISOMET 5000 precision diamond saw. Marginal gaps were measured using a stereomicroscope at a magnification of 4.5× and the openings were recorded in microns. Results: Ceramage Crowns and SR Nexco Crowns showed significantly lower marginal gaps compared to Full Metal Crowns respectively (p<0.05). No significant differences were noted between Ceramage Crowns and SR Nexco Crowns (p>0.05). Conclusions: The mean marginal gaps of all three groups were within a clinically acceptable range of 120 μm. Utilisation of indirect composite restorative materials that has been improved for over 40 years can promote satisfactory marginal adaptation which will be beneficial to the clinicians and patients.
Survival of Mobile Teeth in Periodontitis Subjects With Supportive Periodontal Therapy

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Introduction: Literature on the fate of the mobile teeth is still not clearly focused in previous studies. By knowing the fate of the mobile teeth in five years will provide a guide for its management. Objectives: The objective of this retrospective study was to determine the fate of mobile periodontally involved teeth following five years of periodontal therapy. Methodology: This longitudinal study utilized clinical records of patients with at least 30% of sites that had periodontal probing depth of at least 4 mm. These patients had undergone five years of periodontal treatment by the same periodontist at a public sector specialist unit. We identified 672 mobile teeth in 100 patients with periodontitis at baseline and monitored through for their fate and degree of mobility at five years. Results: At 5 years, 552(82.14%) teeth retained intra orally. Grade I improved the most with 328(76.88%) teeth, 115(62.8%) teeth in Grade II and Grade III showed the least in improvement in mobility status with 16(25.8%) teeth. Grade III showed the most percentage in tooth loss with 46(74.2%) teeth, 44(24.0%) teeth in grade II and grade I showed the least tooth loss with 30(7.0%) teeth. Deterioration in mobility status where found in grade I and Grade II with 16(3.7%) teeth and 4(2.2%) teeth respectively. A total of 53(12.4%) teeth grade I mobile teeth maintained the same mobility status in 5 years, 20(10.9%) teeth of grade II, however, no reported data on grade III. Overall retention rate was 0.16 teeth per patient per year. Conclusion: All grades of mobility have shown improvement in the mobility status with five-year of periodontal therapy.
Shear Bond Strength of Nano-zirconia and Veneering Porcelain

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Introduction: A major failure of veneered zirconia crowns is porcelain chipping. Literature identified low bond strength of veneered porcelain as the main reason. Phase transformation toughening which adapted by zirconia framework to resist cracks was not happening in veneering layer of feldspathic porcelain. The difference in temperature changes between the bonded materials contributed to the failure. A more compact and stable Nano-zirconia substructure was then developed to bond with veneering porcelain. However, the interfacial bond strength improvement of nano-zirconia was still debatable. The aim was to investigate the bond strength of nano-zirconia and veneering porcelain using shear bond test. Method: A total of 60 samples evenly allocated to Nano-zirconia (YSZ)/Ceramkiss group, Nano-zirconia/InLine®, Cercon®(zirconia)/Ceramkiss group, Cercon®/InLine®, Metal (noble metal alloy)/InLine® group, Metal/Ceramkiss® group fabricated by slip-casting, milling and lost-wax techniques respectively to form 11mmx3mm discs. Every core in each group was sandblasted and lined with opaquers prior to the veneering porcelain. Lithium disilicate (CeramKiss®) and feldspathic porcelain (InLine®) been built up with double firing to accommodate size of 3mmx3mm dimension. After 24 hours water storage, the samples were subjected to shear test until debonded and value recorded in megapascal unit (MPa). Selected sample from each group was examined under SEM to identify failure pattern. Two-way ANOVA as statistical analysis was carried out to assess the mean shear strength value of three different core system with two veneering materials. Friedman test and Wilcoxon signed ranks test carried out to detect any significant differences among the tested groups. Result: Mean shear bond test value recorded as 18.6±8.0 MPa for Cercon®/Ceramkiss® group, 28.9±11.9 MPa for Metal/InLine® group and 23.1±7.7 MPa for Nano-zirconia/Ceramkiss® group. A significant different of shear strength value (P<0.05) noted between every core systems veneered with Ceramkiss® and InLine®, Cercon®/Ceramkiss® and Nano-zirconia/Ceramkiss® showed no significant different to Metal/InLine® as a control group. Both veneered zirconia groups showed non-significant results. Conclusion: An experimental nano-zirconia and its compatible veneering porcelain showed better bond strength compared to commercially available veneered zirconia while porcelain fused to metal materials strength still remained to have superior bonding than other bi-layered materials.
Potent anti-inflammatory effects of Gelam Honey on periodontium and aorta in experimental periodontitis

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Introduction: Periodontitis, an inflammation disease, is a risk factor for the development of atherosclerosis. Gelam honey is viscous, liquid natural product with various biological activity such as anti-inflammatory and anti-oxidant. Its proven to have high level of flavanoids and phenolic content that showed anti inflammatory effects. Aim: The aim of this study is to study the effects of gelam honey on the pro-inflammatory cytokines (Interleukin 6 (IL6) and Tumour Necrosis Factor-α (TNF-α)) systemically and locally on periodontium and aorta in experimental periodontitis. Methodology: Twenty rats were randomly assigned into 4 groups; CS (control treated with saline), CH (control treated with Gelam honey, 3g/kg body weight), TS (periodontitis treated with saline), TH (periodontitis treated with Gelam honey, 3g/kg body weight). Periodontitis was induced by ligating the lower left first molar with 4/0 Black Silk Suture. On day 15, the levels of IL6 and TNF-α in plasma were assayed by enzyme-linked immunosorbent assay (Elisa) techniques, and those within mandible and aorta were measured by immunohistochemistry. Result: The TS group exhibited significantly higher number of IL6 and TNF-α on mandible and aorta. However, no significant difference of plasma IL6 and TNF-α level between all the groups. Gelam honey was able to reduce the number of IL6 and TNF-α on mandible and aorta of diseased rats, TH. Discussion: IL6 and TNF-α are important cytokines in periodontitis progression. Gelam honey is potentially useful in the treatment of inflammatory conditions and even has the ability in inhibiting the production of pro-inflammatory cytokines such as IL-6 and TNF-α in rats. Thus raises the possibility that honey will act as a therapeutic agent for periodontitis and reducing the risk of other inflammatory disease such as atherosclerosis. Conclusion: Gelam honey was able to reduce the level of IL6 and TNF-α on mandible and aorta in periodontitis rats, but no effects on the systemic level.
O – 09 (non-competing)

**Extraction protocols for orthodontic treatment - a retrospective study**

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**Objectives:** Various extraction protocols have been followed for successful orthodontic treatment. The purpose of the study was to evaluate the extraction protocols in patients who had previously undergone orthodontic treatment and also who had reported for continued orthodontic treatment from other clinics. **Methodology:** A total of 138 patients who registered for orthodontic treatment at the SEGi Oral Health Center were divided into 10 groups of extraction protocols based on Jansonet al.'s orthodontic treatment protocol and were evaluated statistically. **Results:** The descriptive statistics of the study revealed a total of n=40 (29%) patients in protocol 1, n=43 (31.2%) patients in protocol 2, n=18 (13%) patients in protocol 3, n=16 (11.6%) patients in protocol 5, n=12 (8.7%) patients were in the Type 3 category of protocol 9. The Type 3 category in protocol 9 was 8.7% and was statistically significant compared to other studies. Midline shift and collapse of the arch were noticed in these individuals. **Discussion:** Extraction of permanent teeth like canine and lateral incisors without rational reasons could have devastating consequences on the entire occlusion. The percentage of the cases wherein extraction of permanent teeth in the crowded region instead of orthodontic treatment is still prevalent in dental practice. The shortage of orthodontists in Malaysia and the long waiting period, lack of subjective need for orthodontic treatment at an earlier age group were the reasons for the patient’s to choose extraction of the mal-aligned teeth like the maxillary canine or maxillary lateral incisors. These patients have received orthodontic treatment at a later age, when collapse of the arch and shift in the midline are additional complications together with impairment of the patient’s self-esteem and confidence level at a sensitive period of their lives.