

Found 129 Records

CONTROL ID: 3244328

TITLE: Relationship Between Craniofacial Growth Phenotypes and Skeletal Classes

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Skeletal classes represent characteristics in the sagittal plane, however, they must be related to all the dimensions for a better diagnosis. In a vertical plane, the growth phenotype could be related to sagittal aspects and may produce anteroposterior mandibular rotations. The aim of this study was to relate vertical characteristics of hypo (A), normo (N) and hyperdivergent (H) phenotypes to sagittal characteristics of skeletal classes.

Methods: 316 telerradiographs were measured cephalometrically. This study was approved by the scientific and ethical board of Universidad de los Andes, Chile. Subjects were classified by phenotype according to Anterior Face High/ Posterior Face High and Sella Nasion / Gonion Gnathion angle, modified by a previous exploratory study. Four variables were measured in the different subjects (SNA, SNB, ANB, and mandibular body length), and related to craniofacial phenotypes. The descriptive analysis was made with measures of central tendency and dispersion. The relationship was measured with an ANOVA test (Stata 5.0).

Results: Regarding the SNA and SNB angles, significant differences ($p = 0.00$), were found among all the phenotypes, both angles were reduced in hyperdivergent compared to the other groups (A - H: $p = 0.00$; N - H: $p = 0.00$). Regarding the ANB angle, significant differences ($p = 0.00$), were found, the hyperdivergent group had higher values than the other groups (A - H: $p = 0.001$; N - H: $p = 0.008$). Concerning the length of the mandibular body, significant differences ($p = 0.004$), were found, where hyperdivergent had smaller mandibular bodies (A - H: $p = 0.053$; N - H: $p = 0.004$).

Conclusions: There is a positive relationship between Class II skeletal values with the hyperdivergent phenotype. Similar results in SNA, SNB and ANB were found in literature, this could be explained by the posterior rotation of the mandible.

CONTROL ID: 3244329

TITLE: Craniofacial Growth Phenotypes in Different Stages of Cervical Vertical Maturation

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: This study aims to determine the presence of hypodivergent (A), normodivergent (N) and hyperdivergent (H) phenotypes in the different stages of cervical vertebral maturation (CVM).

Methods: Teleradiographs were randomly chosen from patients (between 5 and 14 years old) treated at Universidad de los Andes Clinical Center in San Bernardo during 2018.

A cephalometric study was done to determine each phenotype (classified by posterior and anterior facial high AFP/AFA, modified from a previous study). Then, divided into 6 groups according to Baccetti's cervical maturation stages. A descriptive analysis using measures of central tendency and dispersion of CVM groups with each phenotype was performed (SPSS®).

This study was approved by the scientific and ethical board of Universidad de los Andes, Chile.

Results: 316 cephalometric studies were made. All CVM groups were described, except CMV 6 because of the small sample number. The AFP/AFA mean values were: CVM1 (A:69,9; N:63,88; H:59,12), CVM2 (A:68,18; N:63,92; H:58,79), CVM3 (A:68,16; N:63,45; H:58,86), CVM4 (A:70,26; N:63,68; H:58,35), CVM5 (A:71,0; N:64,14; H:60,3).

Conclusions: Hyperdivergent phenotype is characterized by a vertical growth of mandible, it's frequently underdiagnosed and difficult to treat. Craniofacial development can be evaluated by CVM. By evaluating the correlations between both, it could indicate hyperdivergent patients in the early stages of their development. This study suggests that early detection (on CVM1) of hyperdivergent patients may be possible since phenotypes remain stable during growth.

As CVM develops, the hypodivergent group decreased their AFP/AFA values, until the pubertal peak, where it increased, probably by late mandibular vertical growth. Normodivergents group remained stable over time. Finally, hyperdivergent group remained stable under the norm, until after the growth peak, where it tended to slightly decrease, maintaining its phenotype.

CONTROL ID: 3251409

TITLE: Evaluation Of Probiotic Cheese With Lactobacillus Casei-01 In Experimental Periodontitis

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to evaluate the effects of a functional food intake, Prato cheese with Lactobacillus casei - 01 in experimental periodontitis (EP) in rats.

Methods: Sixty-six male rats (*Rattus norvegicus*, albinus, Wistar) were divided into 6 groups: C (control): animals without EP induction and fed with conventional feed only (CF); C-EP: animals with EP induction and fed with CF only; CONV: animals without EP induction and fed with conventional cheese + CF; CONV-EP: animals with EP induction and fed with conventional cheese + CF; PROB: animals without EP induction and fed with probiotic cheese + CF; and PROB-EP: animals with EP induction and fed with probiotic cheese + CF. On day 0, either conventional or probiotic cheese was orally administered according to the experimental group (10 g/day/rat) until the end of the experiment. At day 28, EP was induced in the right mandibular first molar of the animals of the C-EP, CONV-EP and PROB-EP groups. On day 42, all animals were euthanized. Microtomographic analysis was performed for assessment of alveolar bone loss.

Results: The PROB-EP group had a higher ($p < 0.05$) bone volume in the bifurcation when compared to the C-EP group ($73\% \pm 13.96$ and $55\% \pm 13.44$, respectively). Higher bone volume ($p < 0.05$) was observed in the bifurcation in the CONV-EP group when compared to the C-EP group ($80\% \pm 4.15$ and $55\% \pm 13.4$, respectively).

Conclusions: Within the limits of this study, it can be concluded that daily consumption of probiotic cheese played a protective role against alveolar bone loss in EP. The results also suggested that regular consumption of conventional Prato cheese may minimize the effects of EP.

CONTROL ID: 3257383

TITLE: Patient Experience With Non-Surgical Periodontal Therapy: A Qualitative Study.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Explore the experiences of patients treated through non-surgical periodontal therapy in the periodontic specialization program of the Universidad de los Andes from a phenomenological qualitative approach.

Methods: Fifty patients at the San Bernardo Health Center in Chile were recruited by telephone call, of which 17 individuals agreed to participate and 15 informants came and signed the informed consent. The experiences were gathered through in-depth interviews to recognize the impact on their quality of life and their satisfaction. The interviews were recorded, transcribed verbatim and analyzed by 3 researchers who codified the answers into categories to establish the emerging topics.

Results: The core categories that emerged from the speeches of the participants were the reason for consultation; discovery of the condition; explanation of the treatment; deal with the professional; consequences of not having been treated; experience during the treatment; post-treatment consequences; given indications; and satisfaction.

Conclusions: There is little knowledge of periodontal disease, the cause of consultation was bleeding, mobility and aesthetics, the treatment generates pain, fear and was invasive and dentine hypersensitivity occurs. However, patients would be willing to do it again and are satisfied with the care and treatment received. More studies are required to better understand the current situation of patients. It is recommended to propose improvements in the teaching on periodontitis, the care to be performed and a rigor in the follow-up and communication at the San Bernardo Health Center.

CONTROL ID: 3258431

TITLE: Histologic assessment of resinous endodontic sealers containing calcium hydroxide.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to evaluate, in vivo, the biocompatibility and mineralization ability of resin epoxy-based endodontic sealers in subcutaneous tissue of rats, implanted with polyethylene tubes filled with Dia Pro Seal, Sealer Plus and Sealer 26.

Methods: Twenty Wistar rats were assigned and received the test groups and a control with empty tube (n= 10 animals/group). After 7 and 30 days the animals were euthanized and the polyethylene tubes removed with the surrounding tissues. Inflammatory infiltrate and thickness of fibrous capsule were histologically evaluated. Mineralization was assessed via Von Kossa staining and under polarized light.

Results: Data were tabulated and analyzed by Kruskal-Wallis and Dunn's test ($p < 0.05$). All the groups induced moderate inflammatory reaction in the initial period with a thick fibrous capsule. In the 30-day period, all groups induced milder inflammatory reactions, and a thinner fibrous capsule, with no statistical difference ($p > 0.05$). Von Kossa staining and birefringent structures were positive only for Sealer 26 in both periods, whereas Dia Pro Seal and Sealer Plus exhibited no signs of biomineralization, similar to control.

Conclusions: Under the conditions of this experiment, all tested sealers were biocompatible, but only Sealer 26 induced biomineralization.

CONTROL ID: 3261461

TITLE: Efficacy of mechanized file systems on the reduction of a multispecies anaerobic biofilm: an ex vivo study

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To determine the efficacy of different instrumentation systems on the reduction of a multispecies anaerobic biofilm on extracted human molars.

Methods: The palatal roots of fifteen extracted maxillary molars were used for this study. After sonication and sterilization, development of a multispecies anaerobic biofilm (7 species) was induced by storing the apical third portion of the roots in an anaerobe broth for 21 days. Root canals were prepared at working length (9 mm) using one of the following instrumentation systems: Reciproc Blue R40(n=3), Wave One Gold (WOG) Medium(n=3), XP-endo Shaper(n=3) and K Flexofile 15-40(n=3). Three samples were left without any preparation (control group). Bacterial viability was determined using a LIVE/DEAD® BacLight™ Kit (Invitrogen, CA). Two- and three-dimensional images of the apical third (3 mm) of the root canals were obtained using confocal laser scanning microscopy (LSM 780, ZEISS, Germany) and further analyzed with the IMARIS software (v. 7.5.2, "Measurement Pro module", USA). The relative biofilm removal after instrumentation was determined for the 2D and 3D images using respectively areal and volumetric parameters. Statistical analyses were conducted using Infostat (2014p)

Results: None of the instrumentation systems used was able to completely remove the bacterial biofilm at the apical third of the root canals. The 2D analysis revealed a significantly higher bacterial reduction for Reciproc Blue treated roots when compared to WOG Medium and XP-endo Shaper ($p < 0.05$). However, no differences were observed between mechanized systems in the 3D analysis. Manual instrumentation (K Flexofile) displayed the lowest bacterial reduction among all systems.

Conclusions: Within the limitations of this study, it can be concluded that mechanized instrumentation is unable to completely clean the apical portion of the root canal, although it provides a significant improvement with regard to manual instrumentation. Reciproc Blue shows higher bacterial reduction compared to WOG Medium and XP-endo Shaper.

CONTROL ID: 3261563

TITLE: Effect of clenching, grinding and chewing on different physiological parameters.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the effect of awake tooth clenching, grinding and chewing on external intercostal (EI) electromyographic (EMG) activity, heart rate and oxygen saturation in subjects with canine guidance or group function. In addition, the total chewing time was correlated to heart rate and oxygen saturation.

Methods: The sample included healthy male participants, 25 with canine guidance and 25 with group function. The selection criteria included complete natural dentition, canine relationship Class I or II and no history of orofacial pain. Bilateral EMG recordings (μV) of EI muscles were performed during following tasks: clenching in the maximum intercuspal position, continuous eccentric and concentric tooth grinding, and unilateral chewing at seated upright position. Simultaneously, heart rate and oxygen saturation with a fingertip pulse oximeter were measured. For the statistical comparisons, the mean value of the three EMG recordings, heart rate and oxygen saturation obtained for each condition were used. Statistical significance was defined in $\alpha = 0.05$.

Results: For canine guidance and group function, no difference among awake tooth clenching, grinding and chewing in EI EMG activity and oxygen saturation were observed. For both groups, heart rate showed higher values during chewing when compared during tooth clenching and grinding. The total chewing time did not show a correlation with heart rate and oxygen saturation. A non-normal distribution for all values ($p < 0.05$; Shapiro-Wilk test) were observed, therefore a Friedman test was used to compare these variables among tasks.

Conclusions: The results suggest that heart rate is modified by a functional activity such as chewing, independent of the participant's occlusal scheme.

CONTROL ID: 3261737

TITLE: Effect of Low Intensity Ultrasound in the Orthodontic Dental Movement

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: This study was carried out with the purpose of analyzing the effect when applying Low Intensity Ultrasound (LIUS) waves on the speed and distance of dental movement, and its effect at the histological level in Sprague-Dawley rats.

Methods: Twenty-three male Sprague-Dawley rats were part of the experiment, which were randomly divided into three groups. Five rats were used as control with no orthodontic tooth movement (OTM), nine rats were subjected to an application of orthodontic force with no application of LIUS and nine were subjected to an application of orthodontic force with LIUS. These orthodontic forces were performed between the buccal mesial aspect of the first upper left molar and the upper central incisor, pulling the molar mesial, applying an approximate force of 50 grams during 21 days, due to problems with sedation these last two groups were composed of six and eight rats respectively.

Results: In the OTM group with no LIUS, a reduction in the space between molars and incisors of 2 mm was recorded, in the OTM group with LIUS, this reduction was 3.4mm, this difference being statistically significant. Histologically, the OTM with LIUS group showed an increased vascular perimeter and marrow spaces compared to the other groups, however, no significant differences were found in the number of osteoclasts.

Conclusions: It was possible to observe and demonstrate quantitatively that the LIUS is a form of efficient mechanical stimulation for the OTM acceleration over an experimental period of 21 days, significant differences were observed between the control group, the OTM group with no LIUS and the OTM group with LIUS in the magnitude of tooth movement. A greater vascularity was observed in the LIUS group, expressing larger vascular perimeters, this could be due to the stimulatory effect of ultrasound on angiogenesis. The increase in angiogenesis and marrow spaces is associated with a facilitation of the OTM.

CONTROL ID: 3262124

TITLE: Risk Factor Of Chemotherapy For Caries And Gingivitis In Children

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate chemotherapy as a risk factor for caries lesions and gingivitis in children with acute lymphoblastic leukemia (ALL) treated with the ALL IC-BFM 2009 chemotherapy protocol compared to a group of unexposed children treated in Valdivia, southern of Chile between 2010 and 2016.

Methods: Retrospective cohort study. Clinical records of 23 pediatric patients were analyzed according to the selection criteria [mean 6.67 (SD 2.86) years old] with a diagnosis of ALL exposed to chemotherapy according to the ALL IC-BFM 2009 international protocol in the Regional Hospital in Valdivia and 46 unexposed patients [7.11 (SD 1.59) years old] in the pediatric dental clinic at the Universidad Austral de Chile assessed every 3 months for 24 months. Data on sex, age, subjects' caries status (number of decayed, missing or filled permanent teeth [DMF-T]), number of teeth with new caries and the presence of gingivitis were recorded (Mann-Whitney U test and logistic regression analysis, $p \leq 0.05$).

Results: The DMF-T of the children after chemotherapy [mean 1.58 (SD 2.87)] increased significantly compared to the unexposed children [mean 0.31 (SD 0.64); $p < 0.01$]. A significantly greater frequency of gingivitis (69.57%; $p < 0.002$) and average of new caries lesions was observed in children treated with chemotherapy than in the unexposed children ($p < 0.01$). The ALL IC-BFM 2009 chemotherapy protocol presented a relative risk of 2.15 (95% CI = 1.22 - 2.66; $p = 0.01$) for new caries lesions and 2.29 (95% CI = 1.76 - 3.82; $p = 0.002$) for the presence of gingivitis.

Conclusions: The ALL IC-BFM 2009 chemotherapy in patients with ALL is a risk factor for new caries lesions and gingivitis. It is suggested that prevention and education measures with respect to a non-cariogenic diet, hygiene and use of fluorides be increased in patients undergoing chemotherapy treatment.

CONTROL ID: 3262867

TITLE: Biodentine Generates Cellular Cytotoxicity and Induces Specific Apoptotic Activity

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The objective of this research work was to evaluate endodontic cement based on tricalcium silicate Biodentine according to its biological properties, specifically its ability to generate cell proliferation. This is why the viability, cell cytotoxicity and the capacity to induce apoptosis by the biomaterial on of human dental pulp cell cultures (HDPCs) were studied.

Methods: HDPCs were obtained through primary cultures. The Biodentine preparation was carried out following the manufacturer's instructions, preparing cement disks (6 x 2 mm) under luminous flux and sterilized by UV radiation. The cytotoxicity and cell viability was measured under the MTT colorimetric method. Besides, the ability to induce apoptosis by Biodentine was performed through Western Blot immureactivity assays for the visualization of three apoptotic proteins; Caspase 3, Caspase 3 clivated and PARP -1. All trials were conducted in three study times 24, 48 and 72 hours, compared with a control group cultured with DMEM.

Results: The results show high cytotoxic activity and low viability by Biodentine ($p < 0.05$) at 24, 48 and 72 hours of exposure compared to control group. In addition, the cement demonstrates high expressivity of Caspase 3 clivated at 48 and 72 hours ($p < 0.05$) and PARP-1 at 48 hours ($p < 0.05$) and 72 hours ($p < 0.001$) compared to control group.

Conclusions: Biodentine exhibits cytotoxic, low viability and specific apoptotic activity on HDPCs. While this study demonstrates the expression of apoptotic proteins, previous trials have also demonstrated apoptotic activity. This is why the use of this biomaterial should be studied for each particular clinical case, especially as a direct pulp capping agent.

CONTROL ID: 3263050

TITLE: Biocompatibility and Biomineralization Assessment of Iodoform and Calcium Hydroxide Pastes

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to evaluate, in vivo, the inflammatory response and the biomineralization capacity of iodoform and calcium hydroxide pastes in subcutaneous tissue of rats. Eighteen Wistar rats (n=6) received implanted polyethylene tubes filled with the following materials: calcium hydroxide + propylene glycol; calcium hydroxide + propylene glycol + iodoform; iodoform + Carbowax; and Carbowax.

Methods: Empty tubes were used as control. After 7, 15 and 30 days, the animals were euthanized and the polyethylene tubes were removed with the surrounding tissues. Inflammatory infiltrate and thickness of the fibrous capsule were histologically evaluated via hematoxylin-eosin (HE) staining, attributing the following scores: 0 (few inflammatory cells); 1 (less than 25 cells); 2 (between 25 and 125 cells); and 3 (125 or more inflammatory cells). The fibrous capsule was classified as thin (<150µm) or thick (>150µm). Mineralization was assessed by Von Kossa (VK) staining and under polarized light (PL) as positive or negative. After tabulated, data were analyzed via Kruskal-Wallis and Dunn's test with a significance level set at 5%.

Results: After 7 days, all groups showed similarity to control with inflammatory score 2, except Carbowax, which showed score 3. All groups showed initial thick fibrous capsule, similar to control. After 15 days all groups, except control, showed a decrease in the inflammatory infiltrate and fibrous capsule thickness. After 30 days, all groups presented score 1 and thin fibrous capsule. Regarding biomineralization, the groups containing calcium hydroxide were positive for VK and PL in all experimental periods, in contrast to the other groups, which showed no signs of mineralization in any period, similar to control.

Conclusions: At the end of the experiment, all materials showed biocompatibility but only the groups containing calcium hydroxide induced biomineralization.

CONTROL ID: 3263337

TITLE: Effect of amorphous calcium phosphate casein and trimetaphosphate on remineralization

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of the present study was to evaluate in vitro if the association of treatments with fluoridated toothpastes and supplemented with sodium trimetaphosphate (TMP) and amorphous calcium casein-phosphate (CPP-ACP) could increase the remineralization of initial lesions of caries.

Methods: Bovine enamel blocks (n = 72) were selected for initial surface hardness (SH). They were then submitted to induction of artificial caries lesions and the post-demineralization hardness (SH1) was determined. The blocks were divided into 6 treatment groups (n = 12): 1) Toothpaste without F (Placebo); 2) Toothpaste with 1100 ppm F (1100F), 3) MI Paste Plus[®] (MI), 4) 1100F associated with MI Paste Plus[®] (1100F + MI), 5) 1100F + 3% TMP (1100F/TMP) and 6) 1100F + 3% TMP associated with MI Paste Plus[®] (1100F/TMP + MI). The blocks were submitted to 6 pH cycling for 6 days. For all groups, treatments were performed 2x/day for 1 minute, except for groups 3 and 6, which after treatment with 1100F and 1100F/TMP, MI was applied for 3 minutes. Data were submitted to ANOVA (one-way), followed by Student-Newman-Keuls test (p < 0.001).

Results: 1100F and 1100F/TMP + MI groups presented similar values, as did MI and 1100F + MI. The 1100F/TMP group remineralized the enamel surface by ~ 41% and 111.5% over 1100F and MI (p < 0.001).

Conclusions: It was concluded that the combination of treatments with 1100F/TMP + MI did not promote an additional effect on remineralization of initial lesions of caries, but its isolated use significantly increased %SHR.

CONTROL ID: 3263767

TITLE: Pattern of Skeletal Class in Orthodontic Population with Agenesis

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The skeletal class is a factor to be considered in the planning of orthodontic treatments, which may be influenced by different characteristics, one of them being dental agenesis. The objective of the study was to determine the most frequent skeletal class in the Chilean population evaluated in orthodontics with dental agenesis.

Methods: A transversal descriptive study was designed, composed of 9207 patients evaluated in orthodontics in a private center, applying the following inclusion criteria: patient who entered the evaluation between January and December 2017, between 5 and 43 years, diagnosis of agenesis of one or more tooth performed by radiologist through report and confirmed by orthodontist; and exclusion: radiographs of patients with previous orthodontic treatment, with syndromes and / or with previous extractions without registration of the tooth that was extracted or without knowledge of its absence. The skeletal class was recorded according to the location of the presented agenesis.

Results: A total of 277 patients with agenesis (174 women and 103 men) were obtained, representing a prevalence of 3%. There were more cases in the jaw and in the premolars. A frequency for skeletal class I of 29.96%, skeletal class II of 45.12% and skeletal class III of 24.92% was found.

Conclusions: The most prevalent skeletal pattern for the Chilean population with agenesis was the class II skeletal. This frequency may vary according to the characteristics of the population.

CONTROL ID: 3263943

TITLE: Study of the Skull / Face Ratio in Different Types of Skeletal Patterns

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the Skull/Face ratio in the different types of skeletal patterns according to Miralles

Methods: The lateral radiographs of 50 individuals were studied, all students of the University of Concepción With an age range of 18 to 22 years. From the lateral teleradiography, the SNA, SNB, ANB, GoGn-SN angles and head, skull and face areas were measured. The skeletal structure (Normo, n= 25, Mesio = 8, Disto n= 17) was determined according to Miralles.

All individuals were informed of the Helsinki protocol.

Statistical analysis was performed using ANOVA

Results: Skull/Face ratio according to miralles

Area $\text{cm}^2 \pm$ se (standart error)

Normo (n=25) Head area=288,20 \pm 4,2; Skull area=211,73 \pm 3,0; Face area=76,46 \pm 1,8; Ratio Skull/Face=2,79 \pm 0,6

Mesio (n=8)Head area=285,92 \pm 9,7; Skull area=201,21 \pm 7,1; Face area=84,70 \pm 3,8*; Ratio Skull/Face=2,39 \pm 0,1*

Disto (n017)Head area=280,34 \pm 6,3; Skull area=206,46 \pm 5,1; Face area=73,87 \pm 2,5; Ratio Skull/Face=2,83 \pm 0,1

* p< 0,05

Conclusions: In the different skeletal patterns, the Mesio group presents significant differences in the Skull/Face ratio with class I and class II skeletal pattern according to Miralles. This indicates that class III individuals present a larger face area compared to class I and II, at the expense of greater mandibular growth, which entails greater work to maintain posture.

CONTROL ID: 3263976

TITLE: Cervical Spine Morphology Related to Malocclusions: A Geometric Morphometric Approach

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To compare facial-cranio-cervical morphology between Class II and Class III individuals applying Geometric Morphometric Methods (GMM).

Methods: The sample consisted in 79 lateral cephalometric radiographs of adult patients of the Dental Clinic of the University of Chile. The patients were classified according to Delaire criteria, resulting in 40 Class II and 39 Class III individuals. To assess the pattern of shape variation of cervical spine in relation to skeletal Classes II and III 13 craniofacial and 13 cervical landmarks were digitalized, and Generalized Procrustes (GPA) and Principal Component (PCA) Analyses were carried out. Differences between groups were analyzed through the corresponding thin-plate spline deformation grids.

Results: The first two principal components (PC1, PC2) explained 62% of the total shape variation. The individuals were mainly separated in relation to PC1 (40%). With respect to facial morphology, differences in maxillo-mandibular sagittal relationship can be clearly observed. Additionally, craniocervical features indicate morphological differences related to a decreased cervical lordosis and an anterior inclination of the cervical spine in skeletal Class II individuals compared to the skeletal Class III ones. These differences were statistically significant (expected PC1, PC2 values= 28%, 18%, respectively; observed PC1, PC2 values= 44%, 25% respectively, after applying a Bayesian broken stick model on $PC1+PC2+\dots+PCn$, where $n=90\%$ of the total variance).

Conclusions: Despite some overlap between the skeletal classes, the morphological characteristics of the cervical spine, such as its curvature and inclination, are contributing to the observed differences between skeletal Class II and Class III malocclusions. In contrast to traditional morphometric assessment, GMM represent an effective approach to analyze visually and numerically the pattern of shape variation in the facial-cranio-cervical system.

CONTROL ID: 3264069

TITLE: L-PRF As An Adjuvant To Scaling And Root Planing.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the use of Leukocyte -Platelet Rich Fibrin (L-PRF) as an adjuvant to conventional non-surgical periodontal treatment (scaling and root planing).

Methods: A split-mouth clinical trial was conducted in patients with periodontitis. Both quadrants randomly received scaling and root planing (SRP) + L-PRF or SRP + irrigation with physiological saline. Periodontal clinical parameters, sensitivity and values of Porphyromonas gingivalis were evaluated.

Results: Scaling and root planing + L-PRF significantly decreased dental sensitivity after one week ($p=0.0036$) and 6 weeks ($p=0.0109$) of treatment, compared with the control group. Although the clinical and microbiological parameters did not show statistical significant differences, there was a tendency towards reduction and improvement in all of them.

Conclusions: The use of L-PRF as an adjuvant to conventional non-surgical periodontal therapy had clinical benefits by reducing post-operative sensitivity in patients with chronic periodontitis.

CONTROL ID: 3264222

TITLE: Integrative analysis of DNA global methylation in Sjögren's syndrome

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: A global DNA hypomethylation has been previously reported in Sjögren's syndrome (SS)-patients. DNA methylation is a dynamic process, where cytosines are methylated (5mC) by DNMTs and hydroxymethylated (5hmC) by TETs enzymes. Pro-inflammatory cytokines are known to induce changes in methylation process.

Objective: To determine global levels of DNA methylation (5mC), demethylation (5hmC), and DNMT TET enzymes in salivary glands (SG) from SS-patients. Additionally, to evaluate cytokine effects on global DNA methylation in human SG cells.

Methods: Labial SG from 23 SS-patients, 15 controls, and 3D-acini stimulated with TNF- α or IFN- γ (1 or 10 ng/mL) were analyzed. 5mC, 5hmC, DNMTs and TET2 levels were assessed by immunofluorescence, quantified independently in epithelial and inflammatory cells, and correlated with focus score. mRNA levels of DNMTs and TETs were determined by RT-qPCR.

Results: SS-patients and cytokine stimulated 3D acini showed significant increase of DNA hydroxymethylation and decrease of DNA methylation. Their 5hmC and 5mC levels correlated positively and inversely with focus score, respectively. A significant increase in mRNA levels of DNMT1, DNMT3a, and TET2 and a significant decrease of TET1 and TET3 was observed. Assays performed in cytokine stimulated 3D acini showed similar results.

Conclusions: Pro-inflammatory cytokines increase global DNA hydroxymethylation and decrease DNA methylation in SG epithelial cells, probably inducing TET2 expression. High DNMTs protein levels reported in inflammatory cells are consistent with high levels of 5mC suggesting that increased DNMTs transcript levels in LSG from SS-patients are produced in inflammatory cells. Changes of DNA hydroxymethylation could have an etiopathogenic role in Sjögren's syndrome.

CONTROL ID: 3264240

TITLE: Epigenetic control of ATF6 α expression in Sjögren's syndrome patients

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Differential expression of endoplasmic reticulum (ER) stress sensors has been reported in labial salivary glands (LSG) of patients with Sjögren's syndrome (p-SS), for example ATF-6 showed a high expression that could be modulated by epigenetic mechanisms.

Objective: To determine the involvement of epigenetic mechanisms (promoter-specific DNA methylation and miRNAs) involved on the expression of ATF6 α in LSG of pSS-patients and sicca controls. Also, the effect of IFN-g on both mechanisms in a 3D-acini model was evaluated.

Methods: The LSG from 12 SS-patients and 10 control subjects were studied. The methylation status of ATF6 α promoter was analyzed by high resolution melting (HRM) PCR. The miRNA expression was profiled by miRNA sequencing. Bioinformatics and in silico analysis were performed and has-miR-424-5p was selected, because its target is the ATF6 α mRNA. 3D cultures of HSG cells were incubated with IFN- γ to evaluate ATF6 α expression, methylation status and the has-miR-424-5p levels. Functional assays using miRNA mimic and miRNA inhibitors were also performed.

Results: LSG from SS-patients showed a significant decrease of ATF6 α promoter DNA methylation ($p=0.04$), and hsa-miR-424-5p levels. Taqman miRNA assays validated the significant decrease of hsa-miR-424-5p levels found in LSG from SS-patients ($p=0.02$). Both results had negative correlation with ATF6 α mRNA levels ($p=0.02$). Functional assays suggest that hsa-miR-424-5p regulates ATF6 α mRNA levels. HSG-3D cells incubated with IFN- γ assays showed similar results.

Conclusions: The DNA hypomethylation of ATF6 α promoter and diminished hsa-miR-424-5p levels are involved in ATF6 α overexpression reported in LSG from pSS-patients. In vitro tests showed that stimulation with IFN- γ induces hypomethylation of the ATF6 α promoter and decreased hsa-miR-424-5p levels, but the mechanism is still undetermined. The recruitment of epigenetic silencing complexes in the hsa-miR-424-5p promoter cannot be ruled out.

CONTROL ID: 3264437

TITLE: Synthesis Of Novel Chalcone Derivatives With Potential Oral Antibacterial Properties

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Currently, due to an alarming increase in antimicrobial resistance, many efforts are being pursued to find novel antibacterial compounds.

Methods: Thus we synthesized a set of naturally occurring compounds, chalcones (1,3-diohenyl-2-propene-1-one), with the aim of identifying potential antibacterial effects against *Streptococcus mutans* UA159. We delineated pathways for the site-directed synthesis of 10 different chalcones with their corresponding NMR analysis. The oral strain *S. mutans* UA159 was cultured in BHI media and bacterial stock inoculums were set at McFarland scale 0.1-0.08. Experiments were carried out in a 96-well micro plate and subsequently analyzed quantitatively using automated plate-reader absorbance measurements and a resazurin viability assay. Initially, 10 structurally different chalcones were evaluated, by treating *S. mutans* with serial dilution concentrations (1 μ M-0.0078 μ M) looking for a possible antibiotic response. In a second experiment, chalcone 12 was analyzed separately and a time-kill kinetics assay was used to determine the drug time-exposure effect. The positive control for all experiments was chlorhexidine 0.12%. Finally, we obtained 3-day mature biofilms using glucose as adjuvant to observe potential biofilm-inhibiting pharmacological effects. For all experiments, nonparametric statistical analysis was used considering gaussian pattern of data distribution and $p < 0.05$

Results: It was observed for the first experiment that chalcone 12 had a minimum inhibitory activity (MIC; CLSI) at 250 nM concentrations. In the second experiment, a bacteriostatic activity was observed for this new compound associated with a slower growing profile when compared to the vehicle group during the first three hours. The last experiment demonstrated no differences in biofilm formation between chalcone 12 and the non-treated groups, which may be explained as an insufficient drug exposure protocol.

Conclusions: Our findings demonstrated that chalcone 12 has promising bacteriostatic effects working in very low concentration (nanomolar range) against *S. mutans*.

CONTROL ID: 3264443

TITLE: Pre dentin Degradation Promotes Biofilm Adhesion In Infected Root Canals.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The present study was designed to analyse the effect of pre dentin degradation on biofilm adhesion in infected root canals.

Methods: 30 tooth roots with clinical and radiographic diagnosis of symptomatic or asymptomatic apical periodontitis and extracted by surgical reason were fixed in formaldehyde-ethanol-acetic acid for 48 hours, demineralized and processed for histological technique. Dewaxed 6 µm sections were incubated in an anti-chondroitin sulfate monoclonal antibody (clone CS-56, Sigma), for 12 hours at 4 ° C. The antigen-antibody reaction was detected using a biotin-streptavidin-peroxidase-diaminobenzidine technique. Sections were counterstained with Gram stain or eosin. Tissues were microscopically analyzed and photographed with a 3.3 RTV Micropublisher cooled digital camera. The images were saved as TIFF files. As control, premolars extracted by orthodontic purposes were studied.

Results: Immunohistochemistry demonstrated that pre dentin layer and dentinal tubules were strongly stained in control specimens. In all experimental specimens, the pre dentin layer disappears from the root canal walls leaving mineralization front and calcospherites exposed to canal space. Gram stain shows bofilm adhesion on the irregular circumpulpar dentin surface. Grooves between calcospherites were observed colonized by biofilm islands. Many infected calcospherites were observed in the canal space.

Conclusions: The endodontic biofilm adheres to the mineralization front and calcospheritic pattern following degradation of pre dentin. Our results highlight the importance of an adequate chemical-mechanical preparation for the disinfection of the root canals in clinical endodontics.

CONTROL ID: 3264562

TITLE: Periodontal Status and Creatinine Correlation in Chronic Kidney Disease Patients

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The association between periodontal and systemic diseases has been proposed by several studies. Although different studies have analysed the possible interaction between periodontitis and chronic kidney disease (CKD), the precise connection between these two diseases remains unknown. The aim of this study was to evaluate the possible correlation between the severity of periodontitis and plasmatic creatinine levels in a Chilean population of CKD patients' candidate to kidney transplantation.

Methods: Two calibrated operators evaluated 17 patients with CKD candidate to kidney transplant. Full periodontal examination comprised probing depth (PD), clinical attachment level (CAL), bleeding on probing (BOP) and plaque index (PI) determined in 6 sites per tooth. Plasmatic creatinine levels were evaluated for all patients. Spearman Correlation to analyse if there exists correspondence between periodontal parameters and plasmatic creatinine levels was done.

Results: Six female (35%) and 11 male patients (65%), whose ages ranged from 23 to 66 (46,2) were included. The average number of remaining teeth was 24,2. The Spearman Correlation Analysis showed no correlation between PD, CAL, BOP or PI and plasmatic creatinine levels.

Conclusions: No correlation was found between periodontitis and plasmatic creatinine levels in this population. The present results represent the partial outcome of an ongoing clinical study. Therefore, it is imperative to increase the number of subjects analysed before generating a final conclusion regarding the interaction between periodontitis and CKD.

CONTROL ID: 3264629

TITLE: Photobiomodulation Of Fibroblasts In Contact With Titanium And Zirconia Surfaces

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The attachment of connective tissue to implant abutments prevents the apical migration of the epithelium and the bone crest reabsorption commonly observed in peri-implantitis. Therapies capable of promoting cell adhesion and modulating tissue inflammation may improve the aesthetic and functional conditions following prosthetic rehabilitations. The aim of this study was to assess the response of gingival fibroblasts seeded on titanium (Ti) and zirconia (ZrO₂) surfaces, submitted to low-level laser irradiation (LLLI) and then exposed or not to lipopolysaccharide (LPS).

Methods: After being seeded on Ti and ZrO₂, the cells were irradiated for 3 times (InGaAsP; 780nm, 25mW) at 24-hour intervals, using 0.5; 1.5 and 3.0 J/cm² doses, and exposed or not to LPS from Echerichia coli (1 mg/mL). Cell viability (Alamar Blue, n=8), interleukin 6 (IL-6) and 8 (IL-8) synthesis (ELISA, n=6), IL-6 and vascular endothelial growth factor (VEGF) gene expression (qPCR, n=5) were assessed and statistically analysed (One-Way ANOVA, a=0.05). Cell morphology was evaluated by fluorescence microscopy (Confocal).

Results: Increased cell viability occurred in all groups cultured on Ti surfaces compared to control, except for the LPS-exposed cells. Fibroblasts cultured on ZrO₂ surface and exposed to LPS exhibited reduced viability. LLLI at 3.0 J/cm² and 1.5 J/cm² down-regulated IL-6 synthesis by cells seeded on Ti and ZrO₂ surfaces, as well as IL-8 synthesis by cells seeded on ZrO₂ surface, respectively. Cells seeded onto both surfaces and exposed to LPS showed increased IL-6 gene expression; however, this activity was down-regulated the fibroblasts were submitted to LLLI at 3.0 J/cm². Increased VEGF gene expression was observed in fibroblasts seeded on Ti surfaces and laser irradiated (3.0 J/cm²). Distinct patterns of cytoskeleton changes occurred in the laser-irradiated cells exposed to LPS.

Conclusions: Specific parameters of LLLI can biomodulate the inflammatory response of gingival fibroblasts seeded on Ti or ZrO₂ and exposed to infectious agents.

CONTROL ID: 3264692

TITLE: Characterization of human T helper-like regulatory T cells and chemokine expression in oral squamous cell carcinoma.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: In this study, we evaluated the phenotype of tissue resident Th-like Tregs and the expression of CCL1, CCL17, CCL18 and CCL22 in cancer tissues from patients with oral squamous cell carcinoma compared to healthy oral mucosa.

Methods: We use flow cytometry to evaluate the phenotype of tissue resident Th-like Tregs. The expression of the chemokines was evaluated by immunohistochemistry of paraffin-embedded tissue sections and ELISA in secretome of tissues from patients with oral squamous cell carcinoma compared to healthy oral mucosa.

Results: Our results demonstrated that patients with oral cancer exhibited higher percentages of Th2-like Tregs with high CCR8 expression. In addition, levels of CCL18 were increased in cancer samples in comparison with healthy mucosa.

Conclusions: These results suggest that CCL18 may supports the migration of CCR8-expressing Th2-like Tregs to malignant areas in oral cancer.

CONTROL ID: 3264709

TITLE: Systemic Inflammatory Burden of Porphyromonas spp. in Apical Periodontitis.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the systemic inflammatory burden to Porphyromonas (P) gingivalis and endodontalis in young adults with Apical Periodontitis (AP).

Methods: Clinical intraoral examinations were performed and serum samples from 39 patients with AP and 40 healthy controls were obtained from volunteering individuals ≤ 40 years consulting at the Dental Clinic of the Faculty of Dentistry of Universidad de Chile. Serum levels of hsCRP and specific anti- P. gingivalis and P. endodontalis IgA and IgG antibodies were evaluated by ELISA assay. Intracanal tooth samples from 36/39 of the patients with AP were obtained using sterile paper-points and presence P. gingivalis and P. endodontalis was evaluated by conventional PCR. Intraoral covariates were registered. Results were analyzed in STATA V12 using Mann-Whitney, Chi-square tests and multiple regression models ($\alpha=0.05$).

Results: Serum concentrations of hsCRP and anti-Porphyromonas IgG and IgA tended to be higher in AP patients nonetheless, differences with controls were only significant for hsCRP and Pe-IgG ($P<0.02$). A multivariate analysis was performed: aside from AP diagnosis ($P=0.03$), neither age nor any of the oral parameters influenced in Pe-IgG serum concentrations ($P>0.2$). Within the AP group, P. endodontalis and P. gingivalis were detected in 33.3% and 22.86% of patients, respectively. Patients with positive bacterial-detection tended to have higher immunoglobulin levels nonetheless, differences were non-significant when compared with AP patients with negative bacterial-detection.

Conclusions: Young adults with AP evidenced elevated serum levels of anti-P. endodontalis-IgG and hsCRP. Intracanal P. endodontalis and P. gingivalis accounted for almost one third of AP in young adults.

CONTROL ID: 3264722

TITLE: Analysis of Biocompatibility of Bioceramic Cements on CD4+Tcells

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to evaluate the effect of Bioceramic cements on proliferation, viability and cytokine secretion of polyclonal activated CD4+Tcells.

Methods: Bioceramic cements are recently-developed endodontic cements that exhibit several bioactive characteristics and improved biocompatibility in comparison with widely used resin-based cements. However, up to date, there are no studies aimed at evaluating their biocompatibility and bioactivity on human CD4+Tcells. Bioceramic cements Total Fill Putty, Biodentine, Total Fill Sealer, Bioroot-RCS and resin-based cement Top Seal were prepared according to manufacturer of instructions under sterile conditions. After preparation, cement extracts were obtained after incubating 3.5x1.5mm disc cement in 1ml of RPMI for 7 days at 37°C. Next, cement extracts were spun at 3.500rpm, filtered with 0.45um and stored at -80°C for further use. Human CD4⁺ T cells were isolated from oral tissue biopsies using cell sorting and expanded with aCD3CD28 beads. Then, CD4⁺ T cells were cultured with or without each cement extract (25%v/v) for 5 days. Proliferation, viability and cytokine secretion were assessed using Cell Trace Violet, Live-dead dye and Cytokine Bead Array, respectively. Samples were acquired on a FortessaX20 and analyzed with FlowJo.

Results: Our data showed that in terms of viability, the extract of Total Fill Putty did not affect the viability of CD4+Tcells, whereas Biodentine, Total Fill Sealer and Bioroot-RCS reduced percentages and numbers of cells. Top Seal was the most cytotoxic cement, inducing a drastic reduction of live cells. On the other hand, proliferation rates were not affected in the remaining live CD4+Tcells cultured with cement extracts. Finally, cytokine secretion was compared between CD4+Tcells alone or in the presence of Total Fill Putty and the data revealed that the production of cytokines was affected by the presence of the former cement extract.

Conclusions: Our data demonstrated differences in biocompatibility between Bioceramic cements on CD4+Tcells cells.

CONTROL ID: 3264742

TITLE: External Deforming Forces Alter Craniofacial Architecture During Development

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to compare the strength of covariation between the face and the CB (median and lateral) and to describe shape covariation patterns in individuals with and without artificial deformation of the neurocranium.

Methods: Lateral cephalograms of 165 individuals were used; 99 showed either vertical (erect) or oblique deformation of the neurocranium; 66 non-deformed individuals (ND) were used as controls. Nineteen landmarks representing the facial skeleton, median and lateral CB were digitized. Using geometric morphometric tools (partial least squares analysis), we tested the null hypothesis that artificially deformed crania show the same strength of covariation and pattern between the CB (median or lateral) and the face.

Results: Our results show that ND has the highest magnitude of covariation strength (high z-scores) among parts; erect deformation (ED) disrupts architectural relationships the most (i.e. lowest z-scores). ED causes an anteroposterior shortening of the median CB, which relates to a vertically oriented profile with a prominent nasal skeleton. The lateral CB, more relevant in determining facial projection, is vertically deeper in ED, which subsequently presents with a vertically oriented profile. On the other hand, oblique deformation elongates the anterior CB and projects anteriorly the lateral CB, which results in an elongated face with a prognathic maxilla. Thus, all face shapes present as expected according to lateral CB shape, but the strength of this relationship is lowered in the presence of deformation.

Conclusions: These findings highlight the importance of the environmental forces in the normal development of the cranium. This knowledge is relevant for craniofacial research in dentistry and related fields, like morphology and developmental biology

CONTROL ID: 3264746

TITLE: Evaluation of Periodontal Parameters of a Mouthwash containing Malva Sylvestris

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the clinical effectiveness of a mouthwash for based on the extract of Malva sylvestris to promote periodontal health using as a parameter the gingival and plaque index.

Methods: A randomized clinical trial was designed and approved by the Scientific Ethics Committee of the Valdivia Hospital Health Service (ORD 181/2017). Fifty-four patients, ages between 18 and 75 years, diagnosed with gingivitis or chronic periodontitis were divided into three groups by block randomization. Group I patients were asked to rinse with 10 ml of M. sylvestris mouthwash twice daily, group II with 10 ml of chlorhexidine 0,12% mouthwash twice daily, and group III with 10 ml of vehicle twice daily. The plaque index was recorded according to the O'Leary protocol (1972) and the gingival bleeding index according to Löe (1967) in the initial registry and after 7 days. The effect of each mouthwash over indexes change were analyzed (ANCOVA; $p < 0.05$).

Results: A statistically significant decrease was observed in the gingival index for the M.sylvestris group (0.04 ± 0.12 , 95% CI: 1.09-1.34; $p = 0.0104$). However, no differences were observed between the gingival index ($p = 0.73$) and the simplified oral hygiene index ($p = 0.11$) between the study groups over a period of 7 days.

Conclusions: The mouthwash of M. sylvestris was more effective reducing the gingival index compared to chlorhexidine and the control group. The pharmacological phenomenon is associated with the anti-inflammatory capacity of the plant and its absorption in contact with oral local tissues.

CONTROL ID: 3264814

TITLE: Comparison of Clinical Parameters in Periodontal Patients Treated with Antibiotics

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Determine if there are differences in clinical parameters of patients with severe generalized chronic periodontitis (SGCP) treated with non-surgical periodontal therapy (NSPT) v/s non-surgical periodontal therapy and adjunctive systemic antibiotic therapy.

Methods: A retrospective cohort study was performed with records of patients of Universidad Mayor diagnosed with SGCP. From a total sample of 45 clinical charts, 21 files corresponded to patients treated with NSPT plus systemic antibiotic therapy (Group one), and 24 files corresponded to patients treated only with NSPT (Group two). A total of 2,891 files were reviewed, from which 2,846 were excluded because they did not comply the inclusion criteria.

Results: Six weeks after treatment, both groups showed clinical improvements in periodontal parameters (Probing epth, Clinical attachment level and Loe and Silness gingival index), with greater reductions in probing depth in Group one ($P = 0.0352$) with statistically significant differences.

Conclusions: Despite the fact that adjunctive antibiotic therapy provided clinical improvements, before prescribing an antibiotic, each case should be evaluated by analyzing the patient's characteristics, systemic diseases, drug interactions and the heterogeneity of biofilm within the population, even considering the option of performing a microbiological analysis to choose the optimal antibiotic therapy that provides the best clinical results.

CONTROL ID: 3264818

TITLE: Effect of toothpastes with nano-sized calcium glycerophosphate on enamel demineralization

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to evaluate in vitro the anticariogenic potential of conventional toothpaste supplemented with microparticles and nano-sizeds of β -Calcium Glycerophosphate (β -CaGPm/ β -CaGPn).

Methods: Bovine enamel blocks (4 mm x 4 mm, n = 120; 12/group) were selected through the initial surface hardness (SHi) and then divided into 10 groups of experimental toothpastes: Toothpaste without fluoride/ β -CaGPm/ β -CaGPn (Placebo); Toothpaste with 1100 ppm F (1100F); Toothpastes with 1100 ppm F associated with concentrations of 0.125%; 0.25%; 0.5% and 1.0% of β -CaGPm and β -CaGPn, which were subjected to pH cycling for five days. The treatment was performed daily with 2mL of toothpaste slurry, 2x/day. Next, the final surface hardness (SHf) was determined for the calculation of surface hardness loss (% SH) and integrated surface hardness loss (Δ KHN). Data were submitted to analysis of variance (ANOVA-one-way) followed by Student-Newman-Keuls test ($p < 0.001$).

Results: Toothpastes containing 1100F associated with 0.5% β -CaGPm and 0.25% β -CaGPn had lower SH% values than the conventional toothpaste (1100F) ($p < 0.001$). The Δ KHN for 1100F associated with 0.25% β -CaGPn was ~ 43% and ~ 10% lower when compared to 1100F and 1100F associated with 0.5% β -CaGPm, respectively ($p < 0.001$).

Conclusions: It is concluded that the supplementation of toothpaste with 0.25% β -CaGPn produced a greater protective effect in the inhibition of the enamel demineralization when compared to the conventional toothpaste (1100 ppm F).

CONTROL ID: 3264830

TITLE: Comparison Between Novel Caries Removal Methods and Adhesion to Dentin

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The purpose of this study is to compare Polybur P1 burs and gel Brix 3000 to conventional caries removal method using carbide burs and to study the tensile bond strength to remaining dentin after being restored with composite resin.

Methods: 45 permanent premolars and/or molars with clinically cavitated dentin caries were selected. Teeth were randomly distributed in three groups for caries removal using carbide burs, Polybur P1 burs and chemomechanical method using Brix 3000. After removal, samples were divided in half, obtaining a portion for histologic analysis and another for restoration and evaluation of tensile bond strength.

Results: Statistical analysis showed significant differences between the method used and the presence of caries after removal, however, there were no differences when comparing the method used and the presence of affected and infected dentin. Regarding the tensile strength variable, there were significant differences between samples treated with carbide and Brix 3000, the latter being which showed the lowest bonding strength values. Regarding the interaction between the variables "removal method", "substrate obtained after removal" and "tensile strength", there were no statistically significant differences.

Conclusions: Of the studied methods, Polybur P1 and Brix 3000 show the highest amount of remaining carious dentin, suggesting they are more conservative removal methods. Nevertheless, when comparing adhesive bond strength after using Brix 3000 and carbide, the best results are obtained with carbide burs.

CONTROL ID: 3264831

TITLE: Localization of Interleukin-6 Signaling Complex in Epithelialized Apical Lesions

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: IL-6 signaling complex is key in the development of apical lesions, though its localization and role in epithelialized lesions is unknown.

The objective is to determine the immunolocalization of the interleukin (IL)-6 signaling complex in epithelialized and non- epithelialized apical lesions of endodontic origin (ALEOs).

Methods: Epithelialized (n = 8) and non-epithelialized (n = 7) ALEOs were obtained from teeth with indication of extraction. All tissues were subjected to routine processing for histopathologic examination, immunohistochemistry and double immunofluorescence to determine the tissue localization of IL-6, IL-6 receptor (R) and glycoprotein (gp)-130.

Results: IL-6, IL-6R and gp-130 were immunolocalized in endothelial cells and mononuclear leukocytes within the connective tissue of epithelialized and non-epithelialized ALEOs. In the epithelialized lesions, the IL-6 signaling complex was also identified to the proliferating immature epithelium in a diffuse pattern; and in the basal and suprabasal layers of mature lining epithelium. In this later epithelium type, IL-6R was markedly distributed in a cell membrane pattern.

Conclusions: IL-6 complex was ubiquitously identified in epithelialized ALEOs. IL-6R was consistently localized to epithelial cells in two different patterns: diffuse for proliferating immature epithelium and cell membrane for mature lining epithelium.

CONTROL ID: 3264848

TITLE: Evaluation of Experimental Intracanal Medication Pastes Based on Glass-Ceramic Materials

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Studies have shown that Biosilicate-two phase (BS-2P) and F18 glass-ceramic materials release ions responsible for inducing osteogenesis. We evaluated experimental pastes prepared from these materials for biocompatibility and antimicrobial activity. Paste of calcium hydroxide ($\text{Ca}(\text{OH})_2$) was used for comparison.

Methods: The pastes were prepared by mixing the powder with distilled water (ratio 2:1) and inserted in polyethylene tubes that were implanted in 16 rats. Empty tubes were used as controls. After 7 and 30 days ($n = 8$), the rats were euthanized for haematoxylin-eosin analysis. The analysis of direct contact with planktonic cells of *E. faecalis* was performed to determine the antimicrobial activity. Statistical tests were performed ($p < 0.05$).

Results: At seven days from the implantation, the groups had a moderate inflammation and thick fibrous capsule; at 30 days, the groups had and mild inflammation and the fibrous capsule was thin; there was no significant difference among the groups in both periods of analysis ($p > 0.05$). Regarding antimicrobial activity, all pastes reduced the total $\text{CFU}/\text{mL}^{-1}$ number of *E. faecalis*; however, the reduction was significant when comparing BS-2P and $\text{Ca}(\text{OH})_2$ groups to the control ($p < 0.05$).

Conclusions: Experimental pastes based on BS-2P and F18 glass-ceramic materials are biocompatible compared to $\text{Ca}(\text{OH})_2$; however, only the BS-2P paste demonstrated antimicrobial activity compared to $\text{Ca}(\text{OH})_2$.

CONTROL ID: 3264860

TITLE: "Chicha Morada" staining during dental bleaching in composite resin restorations.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Evaluate the staining susceptibility during dental bleaching of one bleached composite resin after the exposure to three different beverages: a peruvian purple corn based beverage (chicha morada), green tea and distilled water.

Methods: Thirty disk-shaped specimens of one nanofill composite resin (Filtek Z350 XT, 3M ESPE, USA) were prepared. The specimens were divided into six groups (n=5): purple corn (P), purple corn + bleaching (PB), green tea (T), green tea + bleaching (TB), distilled water (W), and distilled water + bleaching (WB). In bleached groups, two bleaching sessions of two 15 minutes applications each with 35% hydrogen peroxide (HP Maxx, FGM, Brazil) were performed following the manufacturer instructions. Following bleaching, specimens were exposed to each liquid thirty minutes daily. Color was measured with a digital spectrophotometer (EasyShade Advance, VITA Zahnfabrik, Germany). For statistical analysis, color measurement differences between the obtained results were used: during bleaching, after bleaching, and during + after bleaching. Two-way ANOVA was used to compare the color change (ΔE) in the resin composite specimens of all groups.

Results: All evaluated beverages decreased the ΔE of the dental composite resin. The exposure to purple corn caused major statistically significant color differences when compared to green tea and distilled water.

Conclusions: All the evaluated beverages produced color CHANGES in the composite resin regardless of the bleaching procedure. However, purple corn was the only beverage that caused a perceptible color change ($\Delta E > 3.3$).

CONTROL ID: 3264870

TITLE: Effectiveness of bone-substitutes versus autogenous-graft for cleft-palatal repair. Systematic review

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Establish effectiveness of bone-substitutes (BS) versus autogenous-bone-grafts(ABG), on treatment of alveolar cleft-palate(CP), through a systematic review of articles published between 2015-2019.

Methods: Search of literature on: MEDLINE, SCIEDIRECT, SCIELO, EBSCO, EMBASE database where searching to identify : systematic-reviews (SR), observation studies(OS), Using MeSH "cleft palate" "synthetic bone graft" "bone graft" with the boolean AND, language: English and Spanish, published 2015 -2019., RS evaluated with the PRISMA protocol, and OS using the STROBE protocol.

Exclusion criteria: studies performed on animals; application BS, ABG in different treatment of CP, 2 authors make a review of articles, in case of conflict, a 3rd will make the jump-off.

151,595 potential articles, 9 articles were selected according to method.

Results: The year of publication of articles was, 2019 = 1% (n = 1), 2018 = 44% (n = 4) ,2015-2017 22% (n = 2), no articles of relevance for the year 2016 were found. All articles were published in English.

The 55% (n = 5) are RS and 44% (n = 4) are OS, the analyzed studies compared or related the use of BS and ABG for repair of CP. No significant differences were found within use of the different types of bone-graft (BG), all the results demonstrated the efficacy of ABG and also the use of BS. The 66.7% (n = 6) evaluated bone volume.

Conclusions: 5 types of BG are described, the autogenous-grafts, the isografts, the allografts, the xenografts and finally synthetic bone substitutes that have been developed to mimic the natural bone tissue.

The ABG constitutes the Goldstandar for this type of interventions, as well as the iliac-crest that corresponds to the most promoted donor site.

CONTROL ID: 3264876

TITLE: Morphological evaluation of topography of laser-machined surface-modified Ti-cp implants

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Modifications in the morphology, chemical, physical-chemical properties of the implant surface and its influence on the osseointegration process have been the goal of many studies over the last years. The aim of this study was to characterize osseointegratable implants (Ti-cp) with machined surface (MS), laser modified surface (LS) and laser modified surface followed by deposition of sodium silicate (SS).

Methods: For this purpose, topographic characterization was performed by scanning electron microscopy, SEM-EDS dispersive energy spectrometry. Mean roughness, cross-sectional roughness, contact angle, X-ray diffraction (XRD) and laser confocal optical profilometry of the three surfaces were also obtained. The data obtained by the roughness analysis were taken to the analysis of variance and the Tukey t test.

Results: The SEM of Machined Surface (MS) showed smooth surface, contaminated with machining residues, while Laser modified surface (LS) and Silicate Surface (SS) produced rough surfaces with a more regular and homogeneous morphological pattern. The EDS analysis did not reveal any contamination of the analyzed surfaces, and showed Ti peaks for Machined Surface (MS) and Ti and oxygen for Laser modified Surface (LS) and Silicate Surface (SS). The average of values rugosity of Laser modified Surface and Silicate Surface were statistically higher (p five percent) when compared to Machined Surface. The numbers obtained in cross section roughness analysis were 21,76 micrometers and 28,75 micrometers respectively for Laser Surface and Silicate Surface (SS). The contact angle of Laser modified Surface (LS) and Silicate Surface (SS) was 0, allowing high wettability. The XRD of Machined Surface (MS) showed only Ti peaks, while Laser modified Surface (LS) and Silicate Surface (SS) showed the presence of oxides and nitrides. In Silicate Surface (SS) implants the XRD also showed the presence of sodium silicate.

Conclusions: In view of the results obtained, it was concluded that the texturations performed in the Laser modified Surface (LS) and Silicate Surface (SS) implants promoted important modifications in the topography and physical-chemical properties of the analyzed surfaces.

CONTROL ID: 3264886

TITLE: Histological Analysis Of Normal And Inflamed Pulp And Stem Cells

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Evaluate cell morphology of healthy and inflamed human dental pulp and mesenchymal stem cells derived from these tissues.

Methods: Dental pulp diagnosed with irreversible pulpitis and normal pulp explants were grown in Alpha-MEM culture medium, 10% SFB, 1% Pen Strep at 37 ° C and 5% CO₂. Pulp tissues were fixed in 10% buffered formalin for subsequent histological processing. The mesenchymal stem cells were fixed in 70% ethyl alcohol on 1.9 cm² culture plates. Subsequently, hematoxylin-eosin and Trichrome Masson's staining of pulp tissues and mesenchymal stem cells were performed. Images were recorded in inverted optical microscopy and images were evaluated by the Image-J program.

Results: There were no differences in cells characteristics and properties such as immunophenotype and tridifferentiation of cells derived from normal and inflamed pulp tissue. The histological dental pulp analysis showed different patterns between healthy and inflamed tissues. The inflamed tissue showed a mostly lax connective tissue and the nuclei were slightly stained. Mesenchymal stem cells derived from both tissues did not show differences in their morphology and phenotypic features typical of a mesenchymal stem cell.

Conclusions: Both pulp tissues showed morphological differences mainly in the lax connective tissue in inflamed dental pulp, however the cells derived from them do not show changes in their morphology

CONTROL ID: 3264909

TITLE: Repair Proximal Resin With Bulk-Fill. One Year Follow-Up

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Evaluate the clinical performance of proximal restorations repaired with Bulk-Fill composite according to the Ryge criteria at a 12 months follow-up and compare to control groups.

Methods: 40 voluntary patients, with at least two proximal restorations that had repair indication the proximal box, depths ≥ 3.0 mm and antagonist-proximal contact teeth. Restorations were randomly distributed: group BK: 40 Bulkfill Tetric EvoCeram resins (Ivoclar-Vivadent) and Group Z350: 40 Filtek Z350 resins (3M-Espe). The restorative procedure was done with absolute isolation. Only the restoration sector or damaged tooth was removed. All cavities were total-etch with 37% orthophosphoric acid. Sectional matrix system, wooden edge and adhesive Optidond FL (Kerr) was used for both materials according to manufacturer's instructions. The BK restorations were done with only one layer (4mm maximum deep) and Z350 were restored with 2 mm deep multilayer. Restorations were polymerized for 30 seconds with a Bluephase light-curing unit (Ivoclar-Vivadent) with 1100 mW/cm^2 of intensity. Two calibrated operators intra-inter examiner (Kappa > 0.8) evaluated the restorations using the Ryge criteria at two weeks (Baseline) and at 12 months for: marginal staining (MS) adaptation (D), anatomic (A), surface lustre (SL), sensibility (S) and caries (C). For the statistical analysis using 95% confidence were used Wilcoxon and Mann Whitney.

Results: 32 patients were evaluated of the 12 months follow-up (N= 64). Both groups 94%(30) showed score alpha for MS and D. Score alpha for A was Z350 94%(30) and BK 97%(31). Both groups of SL showed 91%(29) like score alpha. There was no score Charlie in any Ryge criteria. There was no significant difference between groups and the baseline ($p > 0.05$).

Conclusions: According Ryge criteria, repair with BK to 12-months follow-up had no significant difference between baseline neither control restorations.

CONTROL ID: 3264914

TITLE: 3 Months follow-up Clinical Performance Dual-Cure Bulk-Fill Composite.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Evaluate clinical performance in proximal or occlusal restorations with dual-cure Bulk- Fill and compare to nanofilled composite by Ryge criteria.

Methods: 47 voluntary patients with 2 proximal or occlusal caries lesions in posterior teeth with proximal and antagonist teeth. The depths of the lesions were $\geq 3.5\text{mm}$. Were distributed randomly: Group FU: 47 Fill-Up resins Bulk-fill-Brilliant Everglow (Coltene) and Group Z350: 47 restorations Filtek Z350 (3M-Espe). The restorative procedure was performed with absolute isolation. The proximal preparations was used sectional matrix system and wooden wedge. Preparations were conditioned in enamel for 20 seconds with 37% phosphoric acid. Single Bond Universal adhesive (3M-Espe) was applied for Z350 and One Coat 7 Universal in the cavities of the FU (Coltene) according to manufacturer's instructions. The FU restorations were done with an only layer ($\geq 3\text{mm}$) and a final layer with Brilliant Everglow. Z350 were restored with 2 mm multilayer. Restorations were polymerized for 30 seconds with a Bluephase light-curing unit (Ivoclar-Vivadent) with an intensity of 1.100mW/cm^2 . Calibrated operator ($\text{Kappa} > 0.8$) evaluated the restorations by Ryge criteria; marginal staining (MS) and adaptation (AM), anatomy (A), postoperative sensibility (S) and caries (C) from the baseline to 3 months. The Wilcoxon test was used for the statistical analysis. (95 % of significance).

Results: 3 months for follow-up were evaluated 47 patients (N total=94). Score alpha for AM was 100% Z350 and 97,8 % for FU; MS, A,S and C there were 100% for both groups. There were not significant differences between the groups ($p > 0.05$).

Conclusions: For 3 months follow up the two posterior restorations composites there were not significant differences in clinical performance evaluated by Ryge criteria.

CONTROL ID: 3264917

TITLE: Perception of Educational Environment from the Undergraduate Dentistry Students.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To measure the perception of educational environment (PEE) considering the opinion of the undergraduate dentistry students from the University of Antofagasta (UA).

Methods: The social study was approved by the ethical committee from UA. DREEM survey (Dundee Ready Educational Environment Measure) was applied to the students from the second to the sixth-year undergraduate dentistry degree. The sample was intentional because it included all students presents at the moment of the survey application. The survey was validated for its use in Spanish and in Chile. DREEM survey has 50 questions and classifies the educational environment in according to the following score: 0-50 points, "Poor PEE"; 51-100 points, "PEE with many problems"; 101-150 points, "PEE more positive than negative"; 151-200 points, "Excellent PEE". Global analysis of the sample and the comparison among the undergraduate levels were realized. ANOVA test was applied by SPSS software.

Results: A total of 209 surveys were correctly completed, 41, 42, 41, 47 and 38 from the second, third, fourth, fifth, and sixth undergraduate level respectively. The global average was 107.2, that means a more positive than negative educational environment perception. On the other hand, the average of undergraduate levels in ascendant order was 120.7, 106.9, 101.6, 107.5 and 96.9. ANOVA test showed a statistical difference ($p < 0,05$) among DREEM punctuation obtained from the different undergraduate levels.

Conclusions: In general, the perception of educational environment observed is more positive than negative, except for the students from the final course (sixth-year), who seem to have "many problems". Additionally, the results observed showed lesser values in comparison to another dental school in Chile. Future studies are necessary to establish the factors that affect the educational environment analyzed in this study and their possible solutions.

CONTROL ID: 3264919

TITLE: SIX MONTH FOLLOW-UP CLINICAL PERFORMANCE PROXIMAL BULK-FILL COMPOSITES

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Compare to 6-month follow-up of clinical performance in proximal restorations with two Bulk- Fill composite and nanofilled composite by FDI criteria.

Methods: 52 patients with 3 proximal caries lesions in posterior with antagonist and proximal teeth. The depths of the lesions were ≥ 3.5 mm. Were distributed randomly: Group TB: 52 Resins Bulkfill Tetric N-Ceram (Ivoclar Vivadent), Group FB: 52 restorations Filtek Bulkfill (3M-Espe) and Group control Z350: 52 restorations Filtek Z350 (3M-Espe). The restorative procedure was done with absolute isolation. Used proximal matrix sectional system and wooden wedge. All preparations were conditioned in enamel for 20 seconds with 37% phosphoric acid and applied adhesive Single Bond Universal (3M-Espe) of the groups FB and Z350 and TB group was applied adhesive AdheSE Bond Universal (Ivoclar-Vivadent). Steps adhesive were according manufactures instructions. The TB and FB restorations were done with an only layer (maximum deep 4mm) and Z350 was restored with 2 mm deep multilayer. Restorations were polymerized for 30 seconds with a Bluephase light-curing unit (Ivoclar-Vivadent) with intensity of 1.100mW/cm². Calibrated operator (Kappa>0.8) evaluated the restorations by FDI criteria, adaptation (AM), marginal staining (MS), surface lustre (SL), proximal contact (PC), fracture-retention (FR) sensibility (S) and caries (C) 6 month later. For the statistical analysis of the test Friedman was used (95 %of significance).

Results: For follow-up 6 months were evaluated 40 patients (N=120). There were 100% score 1 for FR, PC, C and S. There was score 1 for: AM 93%(37) in Z350, 98%(39) FB and 95%(38) TB; MS 88%(35), 93%(37) FB and TB; SL 98%(39) Z350, 95%(38) and 98%(39) TB. There was not significant difference between the groups ($p > 0.05$).

Conclusions: Two bulk-filled proximal composites had not significant difference in 6-month follow-up compared with nanofilled control restorations evaluated by FDI.

CONTROL ID: 3264920

TITLE: External Intercostal Electromyographic Activity Between Subjects With Different Laterotrusive Schemes.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To compare the effect of canine guidance or group function on external intercostal (EI) electromyographic (EMG) activity, heart rate and oxygen saturation during awake tooth grinding and chewing.

Methods: Fifty healthy male participants, 25 with canine guidance and 25 with group function were included. They had complete natural dentition, canine Class I or II and no history of orofacial pain. Bilateral EMG recordings (μV) of EI muscles were performed during clenching in the maximum intercuspation (MIC), during continuous tooth grinding from MIC to right lateral edge-to-edge contact position and vice versa, and chewing at seated upright position.

Simultaneously, heart rate and oxygen saturation were measured with a fingertip pulse oximeter (Choicemmed[®]).

The mean value of the three EMG recordings, heart rate and oxygen saturation obtained for each condition were used for the statistical comparisons. Statistical significance was defined in $\alpha = 0.05$.

Results: EMG activity during awake tooth grinding, heart rate and oxygen saturation presented a non-normal distribution ($p < 0.05$; Shapiro-Wilk test), therefore a Mann-Whitney U-test was used to compare these variables between both groups. EMG activity of EI muscles was similar in the working side as well as in the non-working side between participants with canine guidance and group function. The heart rate and the oxygen saturation showed no significant differences between both groups.

Conclusions: The results suggest that the activity of EI in its role as an obligatory respiratory muscle is not significantly modified by the laterotrusive occlusal scheme.

CONTROL ID: 3264921

TITLE: Low-fluoride dentifrices containing trimetaphosphate and polyols on enamel erosion.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: This in vitro study evaluated the effect of low fluoride (200 ppm F) dentifrice associated with sodium trimetaphosphate (TMP) (0.2%), 16% xylitol and 4% erythritol on initial enamel erosion.

Methods: Bovine enamel blocks were selected by initial surface hardness (SHi) and divided into 5 groups (n=12/group): placebo (no fluoride, TMP, xylitol and erythritol); 16% xylitol + 4% erythritol (XE); 200 ppm F + 0.2% TMP (200TMP); 200 ppm F + 0.2% TMP + 16% xylitol + 4% erythritol (200TMP+XE); and 1100 ppm F. For the analysis of the protective effect, sound enamel were immersed in toothpaste slurry in human saliva once for 2 minutes. Hereafter, enamel blocks were submitted to 4 erosive challenges in citric acid (0.75%, pH 3.5) by 1 minute, under stirring. For the analysis of the repair effect, demineralized enamel were treated and submitted to erosive challenges as describe previously. Percentage of surface hardness change (%SH) was calculated after treatments, demineralization, and 1, 2, 3 and 4 minutes. Variables were submitted to two-way repeated measures analysis of variance followed by Student-Newman-Keuls test (p<0.05).

Results: The successive challenges increased the enamel softening independent of the group (p<0.001). The 200TMP+XE group presented the highest protective capacity followed by XE>200TMP=1100 ppm F>Placebo (p<0.05). The highest reparative ability was observed with 200TMP+XE toothpaste followed by XE>200TMP>1100 ppm F>Placebo (p<0.05). The product formed with 200TMP+XE toothpaste was more resistant to successive acid challenges than XE, 200TMP and 1100 ppm F.

Conclusions: It was concluded that the toothpaste containing 200 ppm F, 0.2% TMP and XE showed superior ability to resist and repair initial erosive lesions.

CONTROL ID: 3264930

TITLE: Longitudinal Evaluation of Preventive Methods of Dental Caries in Molars.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: This study aimed to evaluate the longitudinally the evolution, stabilization or regression lesions of caries of pigmented grooves of first permanent molars, correlating with different preventive methods.

Methods: Children (n=60 - aged 6 to 12 years old) attending from a public daycare center of the city of Presidente Prudente (SP, Brazil) diagnosed with pigmented grooves in first permanent molars were randomly assigned into 4 groups, according to the interventions: Group 1: no intervention; Group 2: fluoride gel application; Group 3: application of Fluorniz[®] varnish; Group 4: application of Duofluorid XII[®] varnish. Children were examined at daycare center at the beginning of the study and every 6 months (up to 12 months), the interventions were performed on the same occasions. Data were analyzed by Mann-Whitney test, and values $p < 0.05$ were considered statistically different.

Results: At 6 and 12 months the number of healthy teeth was higher than the number of teeth with caries lesion, with a statistical difference in all groups studied. When comparing the evaluation period (6 and 12 months) no statistical differences were observed in the group without intervention, fluoride gel, Fluorniz[®] and Duofluorid XII[®] varnish alone and had similar effects, therefore were no intergroup differences.

Conclusions: Lesions of grooves and fissures in permanent molars either longitudinal follow-up or the use of preventive methods can lead to paralysis of the development of carious lesion, however, this protective effect will depend on the patient's risk of individual caries.

CONTROL ID: 3264931

TITLE: "Prevalence of Carotid Artery Calcifications detected on panoramic radiographs"

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Establish prevalence of carotid artery calcifications (CAC) detected on panoramic radiographs of patients treated at the dental radiology center of the Universidad Mayor, Temuco between 2014-2017.

Methods: Cross-sectional design. The census type sample includes all panoramic radiographs of adult patients over 30 years old treated at the dental radiology center of the Universidad Mayor, Temuco between 2014 and 2017.

Anonymized radiographs were collected from the database "Romexis" and age and sex data of each patient were recorded^{1,2}

Results: 500 radiographs were evaluated, CAC were found in 68 patients representing 13.6% of cases; 5.6% CACs were observed bilaterally, 2.8% on the right side and 5.2% on the left side. Otherwise, it was observed that 10.2% of patients that presented CAC were women, the most frequent location among them was bilateral and a 3.4% of patients were men where left unilateral location was more frequent. The highest percentage of calcifications was found in the 50 to 70 years age range with 71.9% of cases.

Conclusions: Atheromas located near the carotid bifurcation are common causes of stroke. That is the reason of the importance of the proper use and analysis of panoramic radiography in this scenario, taking into account that it is a minimally invasive and easy examination.^{3,4,5,6}

The prevalence of CAC is considerable, especially in old age. Knowledge of this disease is required so professionals that request and those who daily report panoramic radiographs can properly refer patients for diagnostic confirmation by more specific tests.

CONTROL ID: 3264934

TITLE: Facial Paralysis Subsequent to Injection Intraoral Anesthetic: a Systematic Review

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To analyze the association intraoral anesthetics injection used in dentistry with the Facial Paralysis.

Methods: A systematic review was performing considering the methodology of the Cochrane manual and PRISMA declaration. The search strategy used was the follow: "Palsy AND Facial" and "Paralysis AND Facial" as key concepts; Science Direct, Pubmed and Scopus as databases; searching without year restriction and with the filter "dentistry journal." The inclusion criteria were the following: studies that describe facial paralysis after or during dental procedures using intraoral anesthetic in humans, published in dental journals. The CARE (Case Reports Statement and Checklist) was applied for methodology evaluation of case reports.

Results: 2462 articles were found after the first search (algorithm). After title and abstract revision, 18 articles met the study objectives. After the full reading of these articles, 14 met the inclusion/exclusion criteria and were analyzed (all were case reports). A total of 19 cases described facial paralysis, 13 "early" (presented before 24 hours) and 5 "late" (presented after 24 hours), while one case reported no time of affectation. The main relation described in the "early" cases was the anesthetic effects over the facial nerve, while the mains relation described in the "late" cases was the presence of herpes virus and the vascular effect of vasoconstrictor included in the anesthetic formula. Poor compliance of CARE was observed in the studies included.

Conclusions: A scarce and low level of evidence was observed in this study regarding the relation between intraoral anesthetics and facial paralysis was observed in this study.

CONTROL ID: 3264957

TITLE: Oxidative stress induces senescence and alters the cytoskeleton in fibroblasts

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Connective tissue cells of the periodontium are exposed to chronic or acute oxidative stress that may derive from inflammation. In the present study we have evaluated whether oxidative stress can induce senescence and alter important functions for tissue homeostasis in the gingival tissue.

Methods: Human gingival fibroblasts (HGF) were obtained from 5 healthy young donors. HGF were exposed to hydrogen peroxide (600 mM) for 2 hours twice. Senescence was evaluated by measuring cell area, Ki67 staining, g-H2A.x phosphorylation and expression of SA-b gal. Cytoskeleton organization and function was evaluated through immunofluorescence for actin, vinculin and collagen gel contraction. Statistical analysis was performed by the student's t test.

Results: Oxidative stress induced a significant reduction in cell proliferation, an increase in cell size and g-H2A.x phosphorylation and SA-b gal expression as indicators of DNA damage and cellular senescence. Oxidative stress also induced a reduction in actin stress fibers distribution and in focal adhesions. In addition, hydrogen peroxide treated cells manifested a deficiency in collagen gel contraction.

Conclusions: The present study shows that acute oxidative induces senescence and alters the organization and function of the cellular cytoskeleton in HGF. This response may have detrimental effects in the regulation and homeostasis on gingival connective tissue cells.

CONTROL ID: 3264960

TITLE: Effect of Osseodensification on Primary stability, Insertion and Removal Torque

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives:

To determine the effect of Oseodensification on insertion torque, RFA and removal torque

Methods: 50 osteotomies were performed in pig tibiae to install dental implants using the standar protocol and 50 to install similar implants using Oseodensification technique

Results:

insertion torque, ISQ value and removal torque were significantly higher ($p \leq 0.05$) for the experimental compared to the control group

Conclusions:

osseodensification protocol obtains statistically significant higher values for the insertion torque, ISQ value and removal torque associated with the installation of implants in low-density bone compared to the conventional milling protocol.

CONTROL ID: 3264969

TITLE: Evaluation of maxillary and mandibular characteristics in orthodontics patients with and without agenesis of third molars.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To assess differences in mandibular, maxillary and facial biotype dimensions among patients with and without third molar agenesis in cephalograms of patients treated at the National Institute of Orthodontics (INO).

Methods: A descriptive, cross-sectional and analytical study was conducted, where the population consist in all the patients that were treated in orthodontic treatment at the INO and must comply with agenesis of the 4 third molars or presence of the 4 third molars in the ages between 15 and 19 years old, in relation to odontogenesis of the third molar. The sample was recruited through non-probabilistic sampling for convenience, establishing two groups: Group 1: with agenesis of the 4 third molars and Group 2: with the 4 third molars.

Results: All the parameters that have represented the anteroposterior dimensions of both jaws (A-Ptm, CoA, ENA-ENP, CoGn, CoPog, GoMe) did not show significant differences between the group of patients with agenesis and the group without agenesis.

The parameters that fit the vertical growth pattern do not represent any difference between the groups.

Conclusions: In subjects with bilateral or third molar agenesis, the anteroposterior dimensions of the maxillary and jaw bones do not show significant differences in comparison with subjects without agenesis.

CONTROL ID: 3264970

TITLE: Mean Cephalometric Values in a Population from San Bernardo, Chile.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Cephalometric norms derived for Caucasians population are routinely used for investigations. As these norms show a great variation when applied to different population, it became necessary to establish our ethnic group norm for future research¹.

The aim of this study was to describe vertical, sagittal and soft tissue new means cephalometric parameters and compared them with the standard norm.

Methods: 315 cephalometries were analyzed, 17 vertical, sagittal and soft tissue parameters were measured. Normality test and central tendency measures were used to evaluate the new norm of this study group. With a student t-test, the new measures were compared with those described by their respective authors. This study is approved by the scientific board of the Dental Faculty and the central ethics Board from Universidad de los Andes.

Results: The 17 variables have a normal distribution. 14 had statistically significant difference ($p = 0$) respect to the standard norms. The variables that stand out are posterior facial height / anterior facial height x 100 (N = 63.8% SD 4.2), sella-nasion angle / gonion-gnation (N = 35.76 DS 5.2), facial axis (N = 88.41 DS 4.1), height of mandibular ramus (N = 39.89mm DS 4.7), mandibular body (N = 58.53mm DS 6.3) and chin projection (N = -8.76mm DS 0.3).

Conclusions: The new results presented for the variables that represent proportions or angles proved to be more representative when diagnosing patients, especially in relation to vertical phenotype of craniofacial growth². On the other hand, the linear measurements, were significantly lower than the norm and could be explained by anthropological modifications³, or environmental changes that may cause a decrease in the mandibular body and ramus growth²

CONTROL ID: 3264972

TITLE: Severity of Complications in Third Molar Surgery by SCATMS Scale

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To determine the most frequent degree of severity of post-surgical complications in exodontics of lower third molars using the SCATMS measurement scale and Identify the possible predisposing factors in the occurrence of complications.

Methods: The SCATMS scale was applied during post-operative control (at 7 days) to a total of 48 patients. During the preoperative period, data from the treating surgeon, the patient and the surgical procedure itself were recorded. Responses were statistically analyzed with SPSS v.22 software with a 95% confidence interval.

Results: The most frequent degree of severity was mild (68.8%) and the most frequent complication was pain (35.5%). The variables that showed statistical significance in relation to the degree of severity found were: smoker ($p = 0.049$), position of the intraosseous tooth ($p = 0.049$), wound closure by second intention ($p = 0.014$), type of suture (silk) ($p = 0.011$) and use of post surgery ATB "NO" ($p = 0.014$). According to the analysis of the bibliography and the statistical significance found in these variables, their participation could be confirmed, together with surgical trauma as a predisposing factor for the generation of a complication.

Conclusions: The most frequent degree of severity found was mild. Being a smoker, position of the intraosseous tooth, wound closure by second intention, use of silk (suture), no use of ATB after surgery and surgical trauma of the procedure, are associated as predisposing to post-surgical complications in lower third molar extraction .

CONTROL ID: 3265077

TITLE: Morphological Characteristics of the Craniofacial Growth and Development Phenotypes

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Vertical mandibular growth shows large morphological variations during its development as it matures late. Is important to study these variations since hyperdivergent patients are clinically difficult to manage, exhibiting aesthetic and functional problems. The aim of this study was to describe morphological characteristics of hypo (A), normo (N) and hyperdivergent (H) phenotypes.

Methods: 316 teleradiographs were measured cephalometrically. 27 variables were measured, including (and discussed) height of the mandibular ramus (HMR), goniac angle (GA), upper and lower lip protrusion, and chin projection. Continuous variables were measured with central tendency and dispersion measures. The relationship between variables with the phenotypes was measured with an ANOVA test. All statistical analyzes were performed using Stata 5.0. This study was approved by the scientific and ethical board of Universidad de los Andes, Chile.

Results: Significant differences were observed between the groups for the HMR (AH: $p = 0.00$; NH: $p = 0.03$) where the hyperdivergent was significantly lower, the GA (AH: $p = 0.00$; NH: $p = 0.00$) where the hyperdivergent was significantly higher, upper lip protrusion (N H: $p = 0,035$), lower lip protrusion (AH: $p = 0,041$; N – H: $p = 0,01$), where hyperdivergent were lower and chin projection (AN: $p = 0.03$; AH: $p = 0.00$), where hypodivergent were higher than other groups.

Conclusions: Mandibular growth includes physiological processes that involve movement and displacement of bone structures and soft tissues. The mandibular ramus is one of the main places of vertical mandibular growth. If a clockwise mandibular rotation occurs, it prevents vertical growth of the ramus and generates an increase anterior facial height. The anterior rotation is fundamental for the projection of the chin, as we see in our study. In conclusion there are characteristics of posterior rotational growth in the hyperdivergent phenotype, that have consequence at sagittal level of soft tissues.

CONTROL ID: 3265098

TITLE: Diagnostic precision of panoramic radiography for canine impaction: systematic review

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Early detection of impaction of permanent maxillary canines (PMC), as well as associated complications, is important for pediatric dentistry and orthodontics. In addition, panoramic radiography is a quick, relatively inexpensive, low-dose examination that is used to control tooth development. The aim of this systematic review is to evaluate the diagnostic accuracy of panoramic radiography compared to cone-beam CT (CBCT as gold standard for the detection of PMC, as well as the detection of radicular reabsorption of the permanent lateral incisor, placement of the permanent maxillary canine in the vestibular sense, palatine and the relationship of contact with the permanent lateral incisor.

Methods: We searched for diagnostic accuracy articles published between years 1996 and 2016 that compared the detection of stated radiographic signs using panoramic radiography and CBCT as an index test in the PubMed, ProQuest and WOS[1] databases. The methodological quality of the reports was evaluated using the STARD guideline. The quantitative synthesis was performed by a diagnostic meta-analysis using diagnostic odds-ratio (DOR). The statistical significance was $p=0.05$.

Results: We found 213 studies. After removing the duplicates, there were 148 studies, of which 3 had the required methodological quality and reported the necessary information to be included in the meta-analysis. The diagnostic precision for the reported signs were: root resorption of the lateral incisor (DOR: 0.522, $p=0.334$); vestibular location (DOR: 0.547, $p < 0.001$), arch line (DOR: 0.765, $p=0.156$); palatine location (DOR: 1.073, $p=0.474$), and contact (DOR: 0.650, $p=0.320$).

Conclusions: Panoramic radiography detects some signs of impaction of the maxillary permanent canine: the presence of root resorption of the lateral permanent incisor, the palatal location of the maxillary canine and contact, while it does not detect the location in the vestibule-palatine direction, or on the arch line.

CONTROL ID: 3265099

TITLE: Anatomical Localizacion of Mental Foramen Using Cone-Beam Computed Tomography

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Confirmation of the foramen mental (FM) location is essential to avoid nerve injuries during dental procedures. The distance from the FM to the adjacent tooth can be assessed by cone beam computed tomography (CBCT) safely and accurately. The objective was to determine the average distance between the upper cortex of the FM and the nearest dental apex, in a population Valdivia, Chile.

Methods: An observational study was performed that measured the distance in millimeters (mm) from FM to the nearest dental apex of 99 CBCT examinations that met the inclusion criteria (patients over 18 years of age, complete mandibular dentition excluding third molar, complete root formation) and exclusion criteria (Bone pathology in the mental region, mandibular fracture, history of periapical surgery, presence of foraminae, non-diagnostic CBCT, patients undergoing orthodontic treatment). The measurement was made in a cut that intercepts the FM and the nearest dental apex.

Results: A total 99 cases were evaluated (72 women/ 27 men), with an average age 34.7 years and a range of 18-73 years. The FM was located at 3.22mm from the nearest dental apex, the minimum distance found was 0.81mm and the maximum 6.99mm and 47.93% of the distance are less than 3mm from the upper cortex of the FM to the nearest dental apex. It is related to the second premolar in 79% of cases and first premolar in 17%

Conclusions: The FM is located close to the premolar area, its location can vary considerably in relation to the apices of these teeth. This study confirms the importance of being cautious during endodontic and / or surgical treatments to prevent nerve injuries in relation to this anatomical structure

CONTROL ID: 3265117

TITLE: Enamel Evaluation After Removal Of Orthodontic Adhesive With Polymer Bur

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives:

This in vitro study aimed to test a polymer bur designed to selectively remove carious dentin on the efficacy of resinous remnant removal after bracket debonding.

Methods: The crowns of 28 bovine incisors were embedded in acrylic blocks, and the buccal surfaces were analyzed by a profilometer to initial roughness measurement (Ra-T1). The brackets were bonded with a light-cured resin and debonded with a debonding plier. The samples were randomly divided into four groups, according to the bur used (n = 7): A- Tungsten carbide; B- Fiberglass; C- Polymer; D- Polymer associated with 75% ethanol pretreatment. The second roughness measurements were made after resin removal (Ra-T2). The time for removal procedures was also recorded. The third measurements were made after polishing (Ra-T3). Scanning Electronic Microscopy (SEM) was performed in two samples of each experimental group: one after resin removal, and the other after polishing. Results of roughness and time measurements were statistically analyzed by analysis of variance with post-hoc Bonferroni.

Results: Tungsten carbide and fiberglass burs provided final surface roughness statistically similar to the baseline ($P > .05$). Polymer burs, associated or not to ethanol, provided surface roughness statistically significantly higher when compared to Ra-T1, even after polishing ($P < .05$).

Conclusions: Polymer burs were more time consuming than tungsten carbide and fiberglass burs. Still, regardless of the system of choice, the polishing step must be considered essential after all resin has been removed, since it creates smoother surfaces regardless the burs used for resin removal.

CONTROL ID: 3265122

TITLE: Antimicrobial and Synergistic Effects of Phenolic Acids on Oral Bacteria

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: This study aimed to evaluate the antimicrobial activity of phenolic acids derived from cinnamic acid, alone or in combination, against some oral bacteria

Methods: The antimicrobial activity of the following phenolic acids: cinnamic acid and its derivatives coumaric acid, caffeic acid, ferulic acid and synapic acid was evaluated by determination of Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) on *Streptococcus mutans*, *Lactobacillus casei*, *Actinomyces israelii* and *Enterococcus faecalis* for 24h. The phenolic acids with antimicrobial effect were combined and determined the Fractional Inhibitory Concentration (CIF).

Results: MIC and MBC values ranged from 0.25 (caffeic acid) to 1 mg ml⁻¹ (cinnamic, ferulic and coumaric acids) for *A. israelii*. The same compounds had inhibitory effect (MIC=1 mg ml⁻¹) against *L. casei*. Cinnamic and caffeic acids presented antimicrobial effect against *S. mutans* (MIC=1mg ml⁻¹) and *E. faecalis* (MIC MBC 1mg ml⁻¹). No antimicrobial effect was observed for synapic acid. The combination of cinnamic acid and caffeic acid presented synergistic or additive effect against all bacteria tested, with FIC lower than the MIC values.

Conclusions: Cinnamic acid and its derivative caffeic acid, alone or in combination, showed antimicrobial activity against all oral bacteria tested and could be promising antimicrobial agents for oral applications.

CONTROL ID: 3265130

TITLE: Fluoride Content of Black-Tea Commercialized in Chile and the U.S.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Tea has become a popular drink in western diets, and part of the regular diet of most Chileans. Black tea has been shown as a natural source of fluoride (F), but with variable fluoride content. Here, we assessed the actual fluoride concentration found in tea infusions prepared from black teas commercialized in Chile and in the U.S.

Methods: Commercialized black teas were acquired from fifteen different grocery-stores and coffee-shops in the Chicagoland area (n=149) and in a major grocery-store in Chile (n=12). Tea infusions were prepared by adding 1 tea-bag or 2.0 ± 0.05 g in 200 mL of boiled deionized-water for 5 min. Chilean tea samples were prepared in triplicate. All individual samples were analyzed in duplicate. Fluoride was determined by using a calibrated ion-specific electrode and expressed as ppm F ($\mu\text{g F/mL}$). Fluoride values (mean \pm SD) were compared to the optimal level of fluoride in drinking water. Additionally, 4 samples (containing 0.7-1.6-3.2-6.5 $\mu\text{g/mL}$) were prepared in triplicate with fluoridated tap-water.

Results: Black tea commercialized in the U.S. (2.56 ± 1.57 $\mu\text{g/mL}$ [mean \pm SD]; min.0- max.8.95) and in Chile (3.567 ± 1.757 $\mu\text{g/mL}$ [mean \pm SD]; min.0.78- max.6.03) exhibited a large variation in fluoride concentration. Samples prepared with fluoridated tap-water (0.7 $\mu\text{g/mL}$) increased fluoride-content by 0.7 $\mu\text{g/mL}$ regardless of tea F-concentration released and measured in deionized-water.

Conclusions: Our data indicated that most of the black tea samples acquired in Chile and the U.S. are rich in fluoride, but with variable F concentrations among commercialized brands. The use of fluoridated tap water in preparing the tea has an additive effect to the F released from the tea.

CONTROL ID: 3265133

TITLE: Effect of Glass Ionomers Cements in the Cariogenicity of a *S. mutans* Biofilm

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to analyze the effect of glass ionomer cements on the cariogenicity of a *S. mutans* biofilm (bacteria viability and acidogenicity) submitted to sucrose-induced cariogenic challenges.

Methods: UA159 *S. mutans* were cultured for 4 days over 2mm x 4 mm circular disks (n = 18) made from 3 different materials: (i) Cavity lining resin-modified Glass Ionomer cement (GC Fuji Lining), (ii) high density restorative Glass Ionomer cement (GC Fuji 9) or, (iii) restorative resin-modified Glass Ionomer cement (GC Fuji 2). Disks were exposed to ultrafiltered saliva to simulate formation of acquired pellicle. All samples were exposed to a 10% sucrose solution 3 times a day. On the fourth day, biofilm was extracted to estimate the colony forming units (CFU) as indicator of bacteria viability. The pH of the culture media in different times was assessed as indicator of the acidogenicity of the biofilm. Data was compared by using a Kruskal-Wallis test ($p < 0.05$).

Results: Statistically significant differences were found for acidogenicity of media related to cements; resin-modified cements had significantly less acidogenicity at 72 hours ($p = 0.016$). No statistically significant differences were observed between the cements when viable microorganisms were compared ($p = 0.1314$).

Conclusions: Despite the limitations of this experimental study, we can conclude that the Glass Ionomer and resin-modified Glass Ionomer cements tested had a similar effect on bacteria viability and in the acidogenicity of a *S. mutans* biofilm.

CONTROL ID: 3265144

TITLE: Phytotherapy and alcohol free mouthwash: an important approach against oral pathogens

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of the present study was to develop an alcohol free mouthwash phytotherapeutic formulation containing pomegranate peel extract for application, and to evaluate its antimicrobial potential.

Methods: The dehydrated and triturate pomegranate peel was subjected to maceration and filtration to obtain the alcoholic extract. This extract was concentrated in a rotary evaporator under reduced pressure and controlled temperature (40-60°C), and subsequently resolubilized in propylene glycol. Next, a formulation was prepared with the following active ingredients: 3% pomegranate peel extract, 0.3% sodium trimetaphosphate (TMP) and 225 ppm sodium fluoride (F). After the characterization of the formulation by Folin-Denis colorimetry pharmacopoeial analysis, a broth microdilution assay was performed to determine the minimum inhibitory concentration (MIC), minimum bactericidal concentration (MBC) and minimum fungicidal concentration (MFC) for the *Streptococcus mutans* (35668) and *Candida albicans* (10231) ATCC strains.

Results: The concentration of phenolic compounds expressed as gallic acid in the formulation was 11.59 mg/mg. For *S. mutans* MIC and MBC values were 0.97 and 5.12 mg/mL, and for *C. albicans* MIC and MFC values were 1.95 and 4 mg/mL.

Conclusions: The formulation showed antimicrobial activity against the strains tested, revealing its potential to be used in the prevention or treatment of oral diseases such as caries and candidiasis.

CONTROL ID: 3265152

TITLE: Midpalatal Sutural Maturation in Adolescents and Young Adults: Cross-sectional Study.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate midpalatal suture maturation in Chilean adolescents and young adults through morphological assessment of cone-beam computed tomography (CBCT) images of the maxilla.

Methods: CBCT volumes from 200 patients (100 women; 100 men), ages 15 to 35 years, were selected from a university clinical center database. In each patient, an axial cross-sectional slice was assessed to determine midpalatal suture maturation, using the method proposed by Angelieri et al., which classifies the state of maturation in 5 stages (A, B, C, D & E). Also, midsutural width was measured in the same axial slice, in two sites (anterior and posterior). Intraexaminer and interexaminer agreements were assessed using Pearson's correlation coefficient, while differences between sutural maturation stage and sex were evaluated with Student's T-Test.

Results: High intraexaminer and interexaminer agreement was achieved ($r > 0.94$, $p < 0.00$). The most frequent stage of maturation was stage C (39.5%), followed by stage E (34.5%) and D (24.5%). In men, stage C was most prevalent with 44%, while in women the most frequent stage was stage D with 41%. However, no statistically significant differences were found between sutural maturation stage and sex ($p = 0.114$). In terms of sutural width, the study showed it decreases gradually from anterior to posterior.

Conclusions: Although the majority of the sample (59%) was classified into a late stage of sutural maturation, where fusion is observed, the other 41% presented previous stages, where non-surgical sutural expansion is possible. Because of the variability observed in adolescents and young adults, the individual evaluation using CBCT is advised for clinical purposes.

CONTROL ID: 3265169

TITLE: TNF- α increase Cdk5 activity in the spinal trigeminal nucleus at brainstem

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Cdk5 is involved in orofacial pain through phosphorylation of several channel/receptors expressed in trigeminal sensory neurons. Previously, we demonstrate that TNF- α increase p35 protein expression and Cdk5 kinase activity in trigeminal ganglion from TNF- α conditional transgenic mice (TNF- α cTg). Here, we evaluate whether TNF- α secreted by central projections of trigeminal neurons of TNF- α cTg mice, could regulates Cdk5 kinase activity in the Spinal Trigeminal Nucleus (STN), place where first synapse occurs between trigeminal sensory neurons and second-order neurons located in brainstem.

Methods: By western blot, ELISA, and immunofluorescence analysis, we evaluated TNF- α protein expression, signaling (p-p65 and IL-6), and neuronal (p-ERK1/2) and glial (GFAP) activation in the STN from TNF- α cTg and control mice. We also evaluated Cdk5/p35 protein expression and Cdk5 kinase activity in the STN from TNF- α cTg and control mice.

Results: We did not find significant changes in TNF- α protein expression between STN from TNF- α cTg and control mice. Nevertheless, we report a significant increase in TNF- α signaling (p-p65 and IL-6), neuronal activation (p-ERK1/2), and glial activation (GFAP) in the STN from TNF- α cTg as compared with control mice. Importantly, we found a significant increase of both p35 and Cdk5 protein expression, as well as Cdk5 kinase activity in the STN from TNF- α cTg mice as compared with controls mice.

Conclusions: We demonstrate that chronic secretion of TNF- α from primary nociceptive neurons to STN increase neuronal and glial activation and Cdk5 kinase activity, suggesting that Cdk5 could play a role in central sensitization and/or maintenance of chronic pain.

CONTROL ID: 3265171

TITLE: Third Molar Agenesis and Mandibular Morphology, A Geometric Morphometry Study.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the relation between third molar agenesis and mandibular size and morphology.

Methods: The panoramic radiographs of 84 patients (aged 14+) were divided into four groups: agenesis of 38 (38A), 48 (48A) or both (BilA), and control (NonA) group without agenesis. Twenty-two landmarks representing mandibular morphology(fig. 1) were used in subsequent geometric morphometric analyses. Shape variables, controlled by sex, underwent principal components analysis (to assess general shape variation), and canonical variate analysis (to assess differences among groups).

Results: Aproximately 70% of the sample's variability was discribed by the first three principal components, with a large amount of shared traits among groups. When group structure was considered, subtle differences were found: NonA and BilA are more similar and symmetric, with only small differences in the size of the condylar and coronoid processes. 38A and 48A showed more marked differences, related to asymmetric features resulting in more gracile features in the ramus and body of the affected side of the mandible. None of these differences were statistically significant.

Conclusions: Subtle differences can be found in the shape of the mandible of individuals which have one, two or none agenetic third molars. Specifically, when only one mandibular third molar is agenetic, there is a slight asymmetry consisting in more reduced features in the side of the agenesis. In comparison, when both molars are agenetic, a slightly more gracile, but symmetric mandible can be seen.

CONTROL ID: 3265175

TITLE: CLINICAL STUDY 9 MONTH FOLLOW-UP CERVICAL TWO BULK-FILL COMPOSITES

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Compare to 9-month follow-up of clinical performance cervical lesion (LC) restorations with two Bulk- Fill composite and nanofilled composite by FDI criteria.

Methods: 46 patients, with at least 3 cervical lesions in posterior teeth. The depths of the lesions were ≥ 1.5 mm with antagonist teeth. Were distributed randomly: Group TB: 46 Resins Bulkfill Tetric N-Ceram (Ivoclar Vivadent), Group FB: 46 restorations Filtek Bulkfill (3M-Espe) and Group control Z350: 46 restorations Filtek Z350 (3M-Espe). The restorative procedure was done isolation. The preparations were conditioned in enamel for 20 seconds with 37% phosphoric acid and then rinsed, dried. Adhesive Single Bond Universal (3M-Espe) was applied of groups FB and Z350; while the Adhesive Bond Universal (Ivoclar-Vivadent) was applied of the TB group according manufactures instructions. The TB and FB restorations were done with an only layer and Z350 was restored with multilayer. All was polymerized for 30 seconds with a Bluephase light-curing unit (Ivoclar-Vivadent) with intensity of 1.100mW/cm². Calibrated operator ($Kappa > 0.8$) evaluated the restorations by FDI criteria for fracture-retention (FR), adaptation marginal (AM), marginal staining (MS) and sensibility (S) and caries (C) baseline and 9 month later. For the statistical analysis of the information software SPSS 21.0 was used, Friedman tests were used (95 %of significance).

Results: 9 follow-ups were evaluated 44 patients (N total=132 restoration). There was loss of retention in 2 restorations for Z350 and 1 restoration for TB and FB. Score 1 for AM; Z350 91%(40), FB 96%(42), 93%(41) TB. Score 1 in MS of Z350, FB and TB was: 84%(37), 91%(40), 98%(43) respectively. Score 1 for S: Z350 91%(40), FB 93%(41), 98%(43). No caries in the three groups. There was not significant difference between the groups in the 9-month ($p > 0.05$).

Conclusions: Two bulk-filled (LC) composites had not significant difference in 9-month follow-up compared with nanofilled control restorations evaluated by FDI.

CONTROL ID: 3265178

TITLE: Missing teeth affect anatomical position of the upper third molars

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To compare the anatomical position of the upper third molars (UTM) between complete hemiarch (CH) and incomplete hemiarch (IH), by orthopantomography analysis obtained from the Dentistry Department, University of Antofagasta.

Methods: 154 orthopantomography were analyzed. Winter classification was applied for UTM position, considering: Vertical "V", Disto-angled "DA", Mesio-angled "MA", Horizontal "H", Inverted "I", Vestibule-version "VV" and Palato-version "PV". Retromolar space (for eruption) was also studied, considering: Sufficient "S", Reduced "R" and Insufficient "In". Finally, eruption level was also identified considering: "A", at the level of the occlusal plane of the second molar (SM); "B", between occlusal plane and the cervical line of the SM; "C", apical to the cervical line of the SM; "D", over the occlusal plane of the SM. Descriptive and comparative statistical analysis of variables were performed between CH and IH.

Results: 116 UTM from CH were observed with the following distribution: Winter, "V" 78.4% (91), "D-A" 12.9% (15) and M-A 8.6% (10); Retromolar Space, "S" 65.5% (76), "R" 25% (29) and "In" 9.5% (11); Eruption Level, "A" 58.6% (68), "C" 20.7% (24), "B" 11.2% (13) and "D" 9.5% (11). Besides, 59 UTM from IH were observed with the following distribution: Winter, "V" 69.5% (41), "D-A" 23.7% (14) and "M-A" 3.4% (2); Retromolar Space, "S" 65.5% (76), "In" 18.6% (11) and "R" 10.2% (6); Eruption Level, "A" 45.8% (27), "B" 30.5% (18) "C" 20.3% (12) and "D" 3.4% (2). Chi-square statistical analysis showed significant difference between CH and IH in relation to Retromolar Space (p -value = 0.029) and Eruption Level (p -value = 0.010) of UTM. Winter Classification of UTM showed no differences (p -value = 0.070).

Conclusions: Preliminary, the hemiarch with missing teeth seems to modify the Retromolar Space and Eruption Level of the UTM but does not affect their position according to the Winter classification.

CONTROL ID: 3265179

TITLE: Association between LINE-1 Hypomethylation and the Risk of Non-Syndromic Orofacial Clefts in a Chilean Population.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Nonsyndromic cleft lip with or without cleft palate (NSCL/P) is one of the most common birth defects worldwide and in Chile. Numerous studies show that changes in the DNA methylation are present in different pathologies. This study aims to evaluate the association of the global methylation levels of the DNA, using the methylation of Long Interspersed Nuclear Elements 1 (LINE-1), and the risk of non-syndromic orofacial clefts in a Chilean population.

Methods: In a pilot study, we evaluated 45 case and 43 controls paired by age and sex. Oral mucosa swabs were taken from them and total DNA was extracted. We evaluated the global methylation status using 4 points susceptible of methylation of the repetitive elements LINE-1, the percentage of methylation in each point was measured using pyrosequencing of bisulfite-modified DNA. Then, these levels were compared in case and controls.

Results: Our preliminary results showed that there are lower levels of methylation of LINE-1 in global terms in the cases (mean=63.42% \pm 5.39) than the controls (mean=67.06% \pm 8.2) (p-value=0.0078). The analysis point by point showed no difference in 1 point comparing cases (mean=69.62% \pm 6.46) and controls (mean=70.12% \pm 11.21) (p-value=0.3998) and the other 3 points presents lower levels of methylation in the cases (mean=58.93% \pm 5.18; 59.11% \pm 6.6; 66.02% \pm 6.43) than the controls (mean=61.42% \pm 5.19; 65.49% \pm 9.54; 71.21% \pm 9.89) (p-values=0.0136; 0.0002; 0.0022 respectively).

Conclusions: The results suggest an association between hypomethylation of the repetitive elements LINE-1 and the risk of non-syndromic orofacial clefts in Chilean population. These results are in concordance with a previous study which reported lower levels of 5-methyl-cytosine in Chilean patients with non-syndromic orofacial clefts.

CONTROL ID: 3265184

TITLE: Factors Associated to Apparition of Post-Exodontia Complications: a Systematic Review

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To analyze the factors associated with post-surgical complications of the simple exodontia.

Methods: A systematic review was performed, considering the methodology of the Cochrane manual and PRISMA declaration. The search strategy used was the following: "Complication" and "Exodontia" as key concepts; Science Direct, Pubmed and Scopus as databases; searching without year restriction. The inclusion criteria were the following: retrospective studies that describe post-exodontia complications in humans. The exclusion criteria were the following: non-clinical studies, exodontia realized under general anesthesia and third molars extractions of high complexity

Results: 1386 articles were found after the first search (algorithm). After title and abstract revision, 12 articles met the study objectives. After the full reading of these articles, 3 met the inclusion/exclusion criteria and were analyzed. The information collected from these three articles was as follows: 22.084 patients attended, 31.401 teeth extractions, 8.792 post-exodontia complications (27.9%). In descendent order, the most frequent complications were Trismus 12.87% (4.042), dry socket 8.45% (2.655), post-operative pain 2.81% (883), wound dehiscence 2.48% (779), surgical site infections 0.28% (88) and retained roots 0.06% (21), among others. All studies included the participation of undergraduate students. Two articles showed a statistical difference by chi-square test in the apparition of post-surgical complications comparing the professional dentist procedures with the student procedures (p-value <0.05); Similar results were observed among the undergraduate students from sixth, fourth and fifth year (p-value <0.05). Additionally, one study showed a statistical difference between the exodontia finished before and after thirty minutes (p-value <0.05).

Conclusions: The higher incidence of post-exodontia complications is associated with the level of experience of the dental surgeon and a longer surgical time (greater than thirty minutes) of the surgical procedure.

CONTROL ID: 3265196

TITLE: Incomplete hemiarch influences the lower third molars position. Radiographic study.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To compare the anatomical position of the lowers third molars (LTM) between complete hemiarch (CH) and incomplete hemiarch (IH), by orthopantomography analysis obtained from the Dentistry Department of the University of Antofagasta.

Methods: 150 orthopantomography were analyzed. Winter classification was applied for LTM position, considering: Vertical "V", Disto-angled "DA", Mesio-angled "MA", Horizontal "H", Inverted "I", Vestibule-version "VV" and Palato-version "PV". Pell and Gregory (PyG) classification was also applied, which consider molar localization by analyzing the horizontal and vertical third molar position. The horizontal position is described by roman numbers (I to III) and the vertical position with letters (A-C). For example, in the position IA, the number I considers the LTM position at the same level of the second molar occlusal plane, and the letter A considers the LTM position with sufficient space between the mandibular ramus (anterior border) and the lower second molar for the LTM eruption. Descriptive and comparative statistical analysis of variables were performed between CH and IH.

Results: 108 LTM from CH were observed with the following distribution: Winter, "V" 59.3% (64), "M-A" 21.3% (23), "H" 13% (14); PyG, Class IA 41.7% (45), Class IIB 26.9% (29) and Class IIA 13.9% (15). On the other hand, 84 LTM from IH were observed with the following distribution: Winter, "V" 51.2% (43), "M-A" 33.3% (28) and "H" 11.9% (10). PyG, Class IA 63.1% (53), Class IIA 13.1% (11) and Class IIB 7.1% (8). Chi-square statistical analysis showed significant difference between CH and IH in relation to PyG classification (p -value=0.03). Winter Classification of LTM showed no differences (p -value= 0.628).

Conclusions: The LTM from IH were more erupted than those found in CH. On the other hand, the partial teeth loss in the hemiarch does not affect the position of the LTM according to Winter classification.

CONTROL ID: 3265201

TITLE: Oral Appliances for Obstructive Sleep Apnoea: An Overview of Systematic Reviews

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To identify and summarize the evidence of the systematic reviews (SRs) comparing treatments based on oral appliances (OA) and continuous positive airway pressure (CPAP) in Obstructive Sleep Apnoea (OSA)

Methods: We performed a search in Epistemonikos, the largest database of SRs in health, which is maintained by screening in multiple information sources, including Pubmed/Medline, Embase, Cochrane, among others. SRs comparing the use of OA and CPAP in patients with OSA were included. We did not impose any restriction on language, country or published status. Selection of systematic reviews, data extraction and quality assessment were undertaken in duplicate. Review quality was assessed using the AMSTAR tool.

Results: Of 72 SRs identified, 30 were included. The number of randomized clinical trials (RCT) in the different SRs ranged from 1 to 17. In total, 21 different RCT were identified and none of the SRs included all relevant RCTs. 18% of SRs were high and 36% were low quality. Following outcomes were reported in SRs: daytime sleepiness (17), apnoea hypopnoea index (15), quality of life (7), cognitive (6), blood pressure (5), side effects (5), patient preferences (4) and others. The quality of the evidence for specific comparisons ranged from low to moderate. Limitations in the evidence included risk of bias in the primary studies, inconsistency between the studies, and imprecision in effect estimates.

Conclusions: There is a large amount of SRs about this topic, but high quality SRs are needed. New RCTs are required to evaluate the safety and preferences of patients regarding this intervention. CPAP appears to be more effective in reducing daytime sleepiness and improving the quality of sleep of patients with OSA. There is evidence of moderate methodological quality that indicates that MAD is a good treatment option for patients in whom CPAP is not well tolerated or cannot be indicated.

CONTROL ID: 3265203

TITLE: Periodontal Status in Individuals with Rosacea: Pilot Study

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Compare periodontal status and hygiene habits of individuals with rosacea and healthy controls.

Methods: An observational pilot study was designed. The selection of subjects > 18 years old was done by convenience. Patients with autoimmune or inflammatory disease that had received in last three months periodontal therapy, non-steroidal anti inflammatory drugs or antibiotics were excluded. The dermatological diagnosis of rosacea was made via telemedicine by an expert dermatologist. All control patients were recruited from Andrés Bello University Dental Clinic of Santiago, Chile, where both rosacea patients and healthy controls were examined by a periodontal specialist. The statistical analysis was performed with Prism6 software.

Results: 26 individuals were included, of which 84.61% were women. Both the rosacea and control group has 13 patients each. The mean age was 31.69 ± 10.63 and 34.77 ± 9.6 years old, respectively ($p < 0.05$). The probing depth average, clinical attachment level and bleeding on probing in rosacea patients were 1.896 ± 0.3 mm, 1.58 ± 0.65 mm and 6.18%; and in the healthy controls were 2.12 ± 0.52 mm, 1.54 ± 0.82 mm and 10.01% ($p < 0.05$). There were no significant differences in hygiene habits.

Conclusions: Patients with rosacea had better periodontal parameters than healthy controls. Rosacea could be a protective factor for periodontal disease; however, more studies are needed to confirm it.

CONTROL ID: 3265204

TITLE: Bilateral Symmetry of Caries in Primary Dentition of Chilean Children

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Describe the presence of caries symmetry in primary dentition of Chilean children between 2 to 4 years old, receiving dental care in a community program.

Methods: Data from 1232 children between 2 to 4 years old who are part of the “Sembrando Sonrisas” program from “El Bosque” in Santiago, Chile, were selected to form part of this study. The clinical information from each subject was obtained from the program’s database. Pearson correlation coefficient and paired-sample t-test were calculated using SPSS 26.0 statistics software (Mac OS X). The ratio of bilateral caries was calculated in those children with one or more caries lesions.

Results: The average age was 2,89 years ($\pm 0,82$). In the sample, 598 (48,5%) were girls and 634 (51,5%) boys. Girls had 0,91 ($\pm 2,16$) dft index and boys 1,24 ($\pm 0,10$), difference which showed to be statistically significant (p-value: 0,014).

Pearson’s correlation ranged from 0.379 (upper canines) to 0.716 (lower first molars) in relation to the dft index according to the dentition side (left or right). The difference in the dft values of primary teeth on the left versus right side was not significant (p-value > 0.05) for all deciduous teeth set.

The proportion of teeth with bilateral caries lesions among individuals with one or more lesions ranged from 22.2% (superior canines) to 79.7% (upper central incisors).

Conclusions: These results suggest that dental caries in primary dentition show a degree of symmetry between caries lesions of the right and left side. Differences in the degree of symmetry were observed according to the deciduous teeth set. Nonetheless, it is needed to consider zero-inflated data in future analyses.

CONTROL ID: 3265205

TITLE: F-varnish containing TMP reduces caries progression in the permanent dentition

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: This study assessed the clinical effectiveness of a fluoride varnish supplemented with sodium trimetaphosphate (TMP) on the development of caries lesions in the permanent dentition, in a randomized, double-blinded and controlled clinical trial.

Methods: Subjects (n=570, 11-15 years old) attending public schools in the city of Boa Vista, northern region of Brazil, were randomly assigned into 3 treatment groups, according to the varnishes: 5% NaF (F-varnish), 5% NaF + 5% TMP (F/TMP-varnish) and placebo (PLA; no fluoride or TMP). Randomization considered age, gender and baseline DMFS (decayed, missing, or filled surfaces). Fluoride dentifrices (1100 ppm F, as NaF) and toothbrushes were provided to all volunteers every three months, along with instructions regarding brushing frequency (twice/day) and amount of dentifrice (smear) used during toothbrushing. Volunteers were examined at schools by a single calibrated dentist, at the beginning of the study and every 3 months until 24 months (totaling 9 examinations), by visual inspection using a plane mirror and a ballpoint probe. Varnishes were applied on the same occasions. Data were submitted to two-way, repeated-measures ANOVA, Tukey's HSD test and multivariate linear regression analysis ($p < 0.05$)

Results: Significant increases in mean DMFS were observed at 9 and 15 months follow-up examinations, respectively for PLA and F-varnish; no significant increase was observed in F/TMP-varnish group in any time evaluated. At the end of the follow-up period (24 months), the lowest DMFS increment (final – initial DMFS) was observed in F/TMP-varnish (0.03), followed by F-varnish (0.15) and PLA (0.31), with significant difference between PLA and F-varnish. The variables "school", "type of varnish" and "initial DMFS" significantly affected the results.

Conclusions: It is possible to conclude that the anticaries effect of F/TMP-varnish is higher than the effect observed to F-varnish in caries lesions in the permanent dentition.

CONTROL ID: 3265208

TITLE:

Identification of Bone Remodelling in Functionally-Loaded Craniofacial Surfaces

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives:

The human face has been described to have anatomical areas that are highly stressed during mastication. These areas would likely undergo bone remodelling processes that lead to facial differences among adult individuals. The aim of this preliminar study was to explore the validity of this assumption by assessing the remodelling activity of bone surface using reflected-light based surface microscopy on resin casts, a method used in other disciplines but that has been largely overseen in dental sciences.

Methods: Resin casts were built from silicone impressions of three skulls from current Chilean territory that differ in diet consistency and thus exerted different magnitudes of masticatory forces in life. Using reflected-light digital microscopy at 90x-100x magnification, the casts of the anterior face of the maxilla, mandible ramus and body, and mandibular fossa were divided in grids and based on the presence of collagen bundles and/or Howship's lacunae, their surface activity was classified as "resorption", "deposition" and "rest". Colour-coded maps were built to depict activity patterns for qualitative comparative analysis

Results: In general, resorption/deposition areas were consistent with areas where previous studies show the occurrence of high stress during mastication: nasal notch, mandibular body at the posterior teeth, posterior slope of the articular tubercle of the temporal bone. Among individuals, the individual that exerted larger masticatory forces shows the largest areas of bone resorption, suggesting higher remodelling activity.

Conclusions:

This is a preliminary study that shows promising results, aiming to include a larger number of individuals to study the process of bone plasticity in response to the functional environment. The technique proposed here could have an impact in fields like craniofacial research and forensic dentistry.

CONTROL ID: 3265213

TITLE: Adhesion of Metal Brackets on Provisional Materials: In-Vitro Study.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the resistance to shear bond strength, (SBS) of metallic brackets bonded to acrylic resin of PMMA and BisGMA using three types of adhesives.

Methods: 120 samples of PMMA resin (Duralay® (D)) and BisGMA (Protemp™ 3 (P)) were manufactured. 12 groups were established (n = 20), according to provisional material, adhesive and thermocycling (TC). Each group had a sandblasted control that allowed to discard the mechanical effects in the results. Metal brackets were cemented using composite resin (Transbond®XT) (1), urethane methyl methacrylate (UMM-Triad®Gel) (2), or Cyanoacrylate (3). The immediate and subsequent SBS was measured. The Adhesive Remnant Index (ARI) was evaluated to determine the type of union failure. Statistical analysis: The Kruskal-Wallis test was performed to determine differences between groups, the Mann-Whitney test for intra-group paired comparisons and The Dunn post-hoc test (P <0.05) to compare groups according to type of adhesive failure.

Results: No differences in the SBS were observed between sandblasting and no surface treatment, except for the P3-TC group. According to the type of provisional, P3 had greater SBS than D3; P2 and P2 (control) to D2 and D2 (control), respectively. For the thermocycling treatment, P3-TC had lower SBS compared to P3. Regarding to adhesive: SBS of composite resin and Cyanoacrylate were significantly greater than UMM at 24 hours. Post-thermocycling, P1-TC was superior to P3-TC.

Conclusions: There are differences in the in vitro SBS of cemented brackets over the provisional of BisGMA and PMMA, when using composite resin, UMM and Cyanoacrylate. SBS depends on the provisional material, the TC and sandblasting. Composite resin should be the adhesive of choice, UMM is not recommended.

CONTROL ID: 3265216

TITLE: Clinical Evidence of Periodontal Stability with Orthodontic Treatment in Patients with Reduced Periodontium

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To determine the changes in periodontal clinical parameters in patients with reduced periodontium and pathological tooth migration under a specific orthodontic protocol.

Methods: An experimental study of uncontrolled clinical trial type, of follow-up was carried out. Sample of 16 patients with periodontal discharge, pathological tooth migration and periodontal support therapy. Orthodontic treatment was performed with bracket cementation according to the remaining bone level using light and intermittent forces. The periodontal clinical parameters were recorded on probing depth, gingival recession, clinical insertion level, plaque index and bleeding on probing at the time of periodontal discharge (t0) and 18 months after orthodontic treatment (t1) started by the same clinician previously calibrated.

Results: There is no difference on probing depth between t0 and t1 ($p>0.05$). There are differences in gingival recession and clinical insertion level ($p<0.05$), but without clinical significance ($\leq 1\text{mm}$). There is an increase in dental biofilm and a decrease in bleeding on probing in t1.

Conclusions: The periodontal parameters of probing depth, gingival recession, clinical insertion level and bleeding of probing of patients with pathological dental migration and reduced periodontium present a minor clinical change during orthodontic treatment under a specific protocol, maintaining the periodontal stability obtained at the time of periodontal discharge. The periodontal treatment and periodontal support therapy is a requirement for performing orthodontic treatment. Dental biofilm control should be more cautious during orthodontic treatment as it increases at 18 months.

CONTROL ID: 3265220

TITLE: Local–Systemic Treatments for Stability of Orthodontic Miniscrews: Systematic Review

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The objective of this systematic review is to identify in the current literature the local and systemic treatments that improve the stability of the miniscrews in orthodontics.

Methods: This systematic review was carried out under the PRISMA criteria. A systematic search was conducted in the electronic databases of Cochrane, Pubmed, Tripdatabase, EBSCO and Epistemonikos until February 2019. The inclusion criteria of the studies were: use of miniscrews in orthodontics with local or systemic treatment, in vivo experiments in humans and animals, including randomized and non-randomized clinical trials; and exclusion criteria: clinical trial protocols, case reports, systematic reviews, topical or systemic treatments in dental implants and surface treatments of the miniscrew. The risk of individual bias of the publications found was evaluated using the tools: RoB2, Syrcle and RoBANS.

Results: Of a total of 935 results, 8 approved the inclusion requirements. A low risk of individual bias was identified in most of them. It was not possible to perform a meta-analysis due to the heterogeneity of the included studies. Five studies were found in animals and three in humans, with different treatments: Low level laser therapy (LLLT), Low intensity pulsed ultrasound (LIPUS), Platelet-Released growth factor (PRGF), Light emitting diode mediated photobiomodulation (LPT), Antibiotic prophylaxis and Zoledronate.

Conclusions: It was found a weak scientific evidence regarding the treatments that influence the stability of the miniscrews. The LLLT, LIPUS, PRG and LPT therapies showed an increase in the stability of the miniscrews, on the other hand, antibiotic prophylaxis did not show an improvement. More studies are needed to apply these treatments in randomized clinical trials in humans.

CONTROL ID: 3265221

TITLE: Immediate Performance BulkFill Self-etch Versus Selective Etch With Universal Adhesive

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Compare the immediate clinical performance in posterior restorations with Bulk-Fill composites performed with self-etch mode and selective etching mode with the same universal adhesive.

Methods: 36 patients with at least 3 occlusal or proximal caries lesions in posterior teeth with antagonist. The depths of the lesions were between 2.5mm-4.0mm and with proximal teeth. The groups were distributed randomly: Group EB: 36 restorations Filtek Bulkfill (3M-Espe) mode selective etching Group TE: 36 restorations mode total self-etch and Group control Z350: 36 restorations Filtek Z350 selective etch. The restorative procedure was done with absolute isolation. Z350 and EB were conditioned in enamel for 20 seconds with 37% phosphoric acid and then rinsed, dried and applied. Group TE Was not etching. For three groups was used Adhesive Single Bond Universal (3M-Espe) according to manufacturer's. The EB and TE restorations were done with an only layer (maximum deep of 4 mm) and Z350 were restored with 2 mm deep multilayer. Restorations were polymerized for 30 seconds with a Bluephase N light-curing unit (Ivoclar-Vivadent) with intensity of 1.100mW/cm². Calibrated operator (Kappa>0.8) evaluated the restorations by FDI criteria: marginal staining (MS) and marginal adaptation (MA), fracture and retention (FR), surface luster (SL), anatomy (A), color (C) and postoperative sensibility (PS) two weeks later. The Friedman test was used for the statistical analysis. (95% level of significance).

Results: For follow-up 36 patients were evaluated (N=108). For the three groups all parameters were evaluated score 1. There were not significant differences between the groups (p>0.05).

Conclusions: For the two groups bulkfill with different etching mode and group control composite-resin restorations there were not significant differences in the immediate performance according to FDI criteria.

CONTROL ID: 3265225

TITLE: Variation Pattern Of Mesiodistal Dimension Of Mandibular Molars

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Through evolution, humans have experienced changes in the maxillofacial territory. The teeth, specifically, have undergone changes in the proportions of the elements that constitute them, also decrease in size and delay in the chronology of the eruption.

According to a previous landmark study, the dimension of the teeth of different populations of hominids, it is concluded that in the permanent dentition and from the first mandibular molar, there is an inhibitory gradient towards distal, which is expressed as a gradual decrease of size between this tooth and the third molar.

The purpose of this study is to know if, in permanent mandibular molars of a Chilean sample, there is a pattern of reduction of mesiodistal length to distal.

Methods: Using the TpsDig2 software, mesiodistal length of the crowns of the first, second and third mandibular molars were measured from images of panoramic radiographs of 100 people. The data were statistically analyzed using the PAST software (3.21).

Results: According to the results of these analyses, statistically significant differences were found between the means of the proportions $M1/M1+M2+M3$ (mean \pm sd $M1= 0.3376 \pm 0.01119$) and $M2/M1+M2+M3$ (mean \pm sd $M2= 0.3327 \pm 0.01137$) (Dunn's post-hoc test for Bonferroni corrected p value= 0.001705), and the means of the proportions $M1/M1+M2+M3$ (mean \pm sd $M1= 0.3376 \pm 0.01119$), and $M3/M1+M2+M3$ (mean \pm sd $M3= 0.3287 \pm 0.01536$) (Dunn's post-hoc test for Bonferroni corrected p value= 3.56E-08).

Conclusions: In conclusion, statistically significant differences were found for $M1$ compared to $M2$ ($M1>M2$), and for $M1$ compared to $M3$ ($M1>M3$). $M2>M3$ occurs but it is not statistically significant, however it is still possible to appreciate a decreasing relationship towards distal from $M2$. The method of measurement that we used is different of the used by Evans. More studies and analyses are required.

CONTROL ID: 3265227

TITLE: Apoptotic Effect of Three Universal Dental Adhesives in SaOS-2 Cells

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the potential apoptosis-mediated cytotoxicity of three universal dental adhesives in the SaOS-2 osteoblast-type cell line

Methods: Three universal dental adhesives (Universal Single Bond - 3M ESPE; Universal Ambar - FGM; Prime & Bond Universal - Dentsply) were evaluated at a concentration of 0.1% v/v in the Saos-2 cell line. Three apoptosis indicators were evaluated after 2-4-6h incubation with the adhesives: phosphatidylserine and propidium iodide detection through flow cytometry, detection of cleaved Caspase-3 by immunoblot and evaluation of nuclear morphology through fluorescence microscopy. The cytotoxicity of the adhesives was determined after 24h incubation by MTT assay, in the absence or presence of the Z-VAD-FMK apoptosis inhibitor.

Results: A higher percentage of cells in early apoptosis was observed by flow cytometry with the Single Bond adhesive, while the Ambar and Prime & Bond adhesives showed a significant increase in death through necrosis. Only the Single Bond adhesive displayed a significant increase of cleaved Caspase-3 compared to the control. The immunofluorescence imaging evaluation showed apoptosis-compatible cell nucleus for the Single Bond adhesive, while Ambar and Prime & Bond adhesives presented necrotic-like nucleus. The MTT test indicated that the three adhesives significantly reduced cell viability: Single Bond (47,9%), Ambar and Prime & Bond (0%); The Z-VAD-PMK apoptosis inhibitor combined with the Single Bond adhesive significantly increased viability to 79,8%.

Conclusions: The evaluated adhesives induce cytotoxicity in Saos-2 cells, with Single Bond being the least aggressive. The results suggest that the Single Bond adhesive mainly causes cell death by apoptosis, while Ambar and Prime & Bond show a tendency to cell death by necrosis

CONTROL ID: 3265229

TITLE: In vitro effect of oral mouthwashes on Streptococcus Salivarius proliferation.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to compare the antibacterial effect of eight different mouthwashes on Streptococcus Salivarius (SS) bacteria (ATCC 13419) using the agar well diffusion method.

Methods: Eight commercial mouthwashes (MWs) (Periogard®, Perio-Aid®, Halita®, Cariax Gingival®, Vitis Orthodontic®, Vitis Encia®, Colgate Plax Soft Mint® and Microdacyn®) were compared. Antibacterial effect was measured using the Agar well diffusion method⁵. The bacteria were extracted from Cultiloops®, rehydrated in brain-heart broth and activated in blood agar plates. Then, bacteria were incubated for 24 hours at 37°C in anaerobiosis using Gaspak ez anaerobe container system®. The colonies were then suspended in trypticase soy agar and diluted to 1.5×10^8 CFU/mL (Mc Farland standard turbidity 0.5). Eighteen Mueller-Hinton plates were streaked and 4 equidistant perforations (wells) were made. Then, 130 µm of each MWs were deposited in wells. The plates were incubated for 24 hours at 37°C in anaerobiosis. The R[©] software was used to perform statistical analysis.

Results: The inhibition zones were measured using an electronic digital caliper. The highest inhibitory effect was observed using Periogard®. Statistically significant differences ($p = 0.0001$ One-way ANOVA, Post-hoc Tukey; Table 1) were found when comparing the inhibition zones of different MWs. However, no significant differences were detected when comparing Periogard® and Perio-Aid®, Halita® and Cariax Gingival®, Microdacyn® and Physiological Saline solution. Only one MW exhibited no antibacterial effect (Mycrodacyn®).

Conclusions: SS is a commensal bacteria that has been associated with the production of bacteriocins. It may play a significant role in oral biofilm stabilization. Thus, selection of MWs as a therapeutic tool should be performed carefully and prescribed for limited time periods, to avoid negative effects in the oral homeostasis, but with the aim of controlling potentially pathogen microorganisms.

CONTROL ID: 3265231

TITLE: Co-cultivation of *Helicobacter pylori* and *Porphyromonas gingivalis* affects biofilm formation and virulence of *P. gingivalis*

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The objective of this work is to determine if the co-culture of *H. pylori* and *P. gingivalis* promotes changes in the ability of *P. gingivalis* to promote biofilm formation, hemagglutination and invasion into gingival epithelial cells. We also aim to determine if the changes in *P. gingivalis* virulence are associated with gene expression modulation of some relevant virulence factors of *P. gingivalis* involved in adhesion and recognition of the bacteria by the gingival epithelial cells and promoting the internalization of *P. gingivalis*, such as fimbriae, hemagglutinins, lipopolysaccharide and gingipains.

Methods: To perform the co-culture, a liquid culture was standardized in which *H. pylori* 26695 and *P. gingivalis* W50 can grow (BHI, hemin, menadione, VITOX and equine serum, 37 ° C, anaerobiosis). After that time, *P. gingivalis* was isolated from the co-culture to perform hemagglutination tests by combining red blood cells with the bacteria by 3 h and observing the formation or not of a "clot". Biofilm formation tests was performed by staining the formed biofilm after 48hrs with safranin and measuring the amount of stain adhered to the biofilm by spectrophotometry. Invasion ability to gingival epithelial cells was assayed after 2hrs after infection by CFU counting after cell lysis. Finally, qPCR was performed to measure the mRNA expression of virulence factors of *P. gingivalis*.

Results: Our results showed that *P. gingivalis* previously co-cultivated with *H. pylori* for 1 or 2 days, has a greater capacity to form biofilm, a higher hemagglutination rate and it is able to invade in a greater amount epithelial cells with respect to *P. gingivalis* grown in monoculture. Also, the co-culture promoted an increase of the expression of 3 virulence factors: 2 hemagglutinins (HagA and HagC), and 1 gingipain (RgpB). These factors are reported to be important in the adherence and infection of *P. gingivalis* and could be clinically important due to reports that associate more virulent strains of *P. gingivalis* to the severity of chronic periodontitis.

Conclusions: Together, these results suggest that *H. pylori* enhances the virulence of *P. gingivalis*, in part, increasing the mRNA expression of virulence factors associated with adhesion and invasion of the bacteria and migration of gingival epithelial cells infected with *P. gingivalis*.

CONTROL ID: 3265235

TITLE: Clinical performance class I bulk-fill composites: 9 months follow-up

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Compare to 9-month follow-up of clinical performance in occlusal restorations with two Bulk- Fill composite and nanofilled composite by FDI criteria.

Methods: 48 voluntary patients, with 3 occlusal caries lesions in posterior teeth. The depths of the lesions were between 2.5mm-4.0mm with antagonist teeth. Were distributed randomly: Group TB: 48 Resins Bulkfill Tetric N-Ceram (Ivoclar Vivadent), Group FB: 48 restorations Filtek Bulkfill (3M-Espe) and Group control Z350: 48 restorations Filtek Z350 (3M-Espe). The restorative procedure was done with anesthesia and absolute isolation. All cavities were conditioned in enamel for 20 seconds with 37% phosphoric acid and then rinsed, dried and applied adhesive Single Bond Universal (3M-Espe) in cavities of groups FB and Z350, while in the cavities of the TB group was applied adhesive AdheSE Bond Universal (Ivoclar-Vivadent) according manufactures instructions The TB and FB restorations were done with an only layer (maximum deep 4mm) and Z350 was restored with 2 mm deep multilayer. Restorations were polymerized for 30 seconds with a Bluephase light-curing unit (Ivoclar-Vivadent) with intensity of 1.100mW/cm². Calibrated operator (Kappa>0.8) evaluated the restorations by FDI criteria, adaptation (A), sensibility (S), surface lustre (SL) marginal staining (MS) and caries (C) of the 9-month later. For the statistical analysis of the information software SPSS 21.0 with the Friedman test was used (95 %level of significance).

Results: For 9 month follow-up were evaluated 42 patients (N=126). All restorations were present and were not C neither S. There was score 1 for: A 98%(41) in Z350, FB and 100%(42) TB; SL there was 90%(38), 93%(39) FB and 95%(40) TB; MS 93%(39) Z350, 95%(40) and 100%(42) TB. There was not significant difference between the groups ($p > 0.05$).

Conclusions: The two bulk-filled composite-resin restorations occlusal had not significant difference in 9-month follow-up performance compared with the nanofilled control restorations evaluated by FDI.

CONTROL ID: 3265240

TITLE: Criteria for Referral of Pregnant Women to The Periodontics Specialty

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To know the criteria for referral to the periodontics specialty used by dentists who care for pregnant women in Primary Health Care (PHC).

Methods: Cross-sectional and descriptive study. A questionnaire was electronically sent to PHC dentists belong to the 29 Health Services who attended pregnant women during 2018 to investigate about the criteria for referral to the periodontists. Their participation were voluntary and anonymous. Data were transferred to an Excel spreadsheet and description was made using absolute and relative frequency.

Results: 522 dentists (57.5% of women and 42.5% of men), with an average age of 32 years, belong to the 29 Health Services of the country answered completely the questionnaire. The presence of probing depth, tooth mobility, bone loss and clinical attachment loss are mainly mentioned as criteria for referral to the periodontics specialty. 64.6% of them sometimes use the basic periodontal exam (BPE), but only 29.4% mentioned it as a referral criterion, although 87.2% considered it a useful tool in the clinic. In addition, only 9% of them know the recommendation of the Clinical Guide of the Ministry of Health to derive through the result of the EPB.

Conclusions: PHC dentists use mainly as a criterion to refer to the periodontics specialty late signs of periodontal destruction. It is necessary to strengthen the examination training in periodontal tissues to give every pregnant woman early diagnosis and timely treatment.

CONTROL ID: 3265277

TITLE: Social Determinants Associated with Dental Caries in Adults in Chile

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To analyze the structural and intermediate social determinants measured at the individual and regional level associated with dental caries in adults in Chile.

Methods: A secondary analysis of data from the 2016-2017 National Health Survey was performed. Dentate adults aged 25 and older were included. The outcome variable was having one or more cavitated untreated caries. A bivariate analysis ($p < 0.1$) and a multivariate logistic regression model, with the stepwise backward method ($p \leq 0.05$, 95% CI) and adjusted for the number of remaining teeth, were performed.

Results: 6,419,862 (58.1%) of Chileans aged 25 and older have cavitated dental caries untreated. Of the individual variables, have between 35 and 44 years old (OR 1.67 95% CI 1.13 - 2.45), be male (OR 1.46 95% CI 1.14 - 1.87), and live in a household with an income below the national median household income (OR 1.68 95% CI 1.18 - 2.38) is associated with caries ($p \leq 0.01$). The only regional variable associated with caries was a Social Vulnerability and Living Conditions Index lower than the national average (OR 1.44 95% CI 1.14 - 1.82 $p \leq 0.01$).

Conclusions: The prevalence of caries in adults living in regions with a Social Vulnerability and Living Conditions Index below the national average reaches 64.9%, compared to 53.9% of adults living in regions with a Social Vulnerability and Living Conditions Index higher than the national average. Of the individual variables, the one with the highest association correspond to living in a household with an income below the national median household income. None of the individual intermediary social determinants was associated with dental caries. These findings indicate the need to analyze the role that the social determinants in a regional level can have on the occurrence of caries, together with analyzing the impact of existing dental programs.

CONTROL ID: 3265285

TITLE: Adhesion of Streptococcus mutans on Ceramic with Different Polishing Protocols

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to evaluate in vitro the influence of five different polishing protocols on lithium disilicate ceramic on the adhesion of Streptococcus mutans biofilm.

Methods: Fifty specimens of pre-sintered lithium disilicate (IPS e.max CAD) with dimensions of 5 x 5 x 1.2 mm were fabricated and divided into 5 groups: G1- positive control (Glaze Group – treatment just with glaze); G2 (Glaze Group + Wear + Glaze) – wear simulating occlusal adjustment with diamond tip and new glaze; G3 (Wear group - negative control) – wear; G4 (Ceramisté Wear Group) - wear and polishing with Ceramisté Polishing Kit (Shofu); G5 (Optrafine Wear Group) - wear and polishing with Optrafine Polishing Kit (Ivoclar). In order to observe the smoothness surface obtained after the polishing protocols of the specimens, surface roughness (Ra - μm) was evaluated. Biofilms of S. mutans were formed on the surfaces of the samples. For biofilm quantification, the number of cultured cells was evaluated by counting colony forming units (CFUs). The data were submitted to statistical analysis (one-way ANOVA, followed by Tukey's test, $p \leq 0.05$).

Results: There was a difference in surface roughness of all groups in relation to G3 (Negative control; $p \leq 0.05$), presenting an average Ra of $1.68 \mu\text{m}$. There was no statistically significant difference between groups that were polished (G4 - $1.32 \mu\text{m}$ and G5 - $1.06 \mu\text{m}$). The lowest mean roughness values were those of group G1 (positive control; $0.4 \mu\text{m}$). There was a difference in Log values (CFU/mL) only between the G3 group and the glaze groups (G1 and G2, $p \leq 0.05$). The highest adhesion of S. mutans occurred in group G3 (4.53 Log).

Conclusions: The best polishing protocol of lithium disilicate ceramics after wear is glazing on surface, presenting the lowest values of roughness and CFUs.

CONTROL ID: 3265289

TITLE: Effects of Tooth Bleaching on the Shear Bond Strength of Orthodontic Brackets

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the effect of three bleaching agents on the shear bond strength (SBS) of metal brackets and to compare their SBS.

Methods: Brackets were cemented on 76 human premolars surfaces extracted by orthodontic indication (76 = sample size). 4 groups were established: (0) Control, (1) enamel treated with peroxide of Carbamide 16%, (2) Hydrogen Peroxide 35% and (3) Hydrogen Peroxide 10% Whitening strips. All brackets were cemented with Transbond XT (3M, Unitek, USA). Once the adhesive protocol was completed, all samples were treated with 5,000 cycles of thermocycling. Shear bond strength was evaluated with a Bisco machine and the amount of adhesive material at the base of the brackets with optical microscopy according ARI index. Shapiro-Wilk test was applied to perform the normality test data. Kruskal-Wallis test was used to compare groups, and the Mann-Whitney test for the comparison between pairs of groups.

Results: The results of adhesive resistance to shear bond strength for groups 0, 1, 2, and 3 were 12.64, 11.06, 6.4 and 9.34 MPa respectively with a statistical difference between the groups ($p < 0.05$). ARI index was significantly different in some groups ($p < 0.05$), indicating failures within the bonding cement. Cohesive type for control, adhesive type for group 2 ($p < 0.05$) and adhesive faults (resin/enamel interface) with cohesive characteristics for groups 1 and 3.

Conclusions: The 35% hydrogen peroxide office bleaching agent significantly reduces adhesion values in the metal brackets cemented 24 hours after bleaching and thermocycling.

CONTROL ID: 3265296

TITLE: Mechanical Behaviour of Bulk-Fill Composite Resin After Different Challenges

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was evaluate the microhardness (KH) and superficial roughness (SR) of bulk-fill composite resin compared to conventional resin after different challenges.

Methods: Sixty specimens (diameter: 5mm; height: 4mm) were obtained from two composites resin: bulk-fill (Filtek One Bulk Fill - BK, n=30) and conventional (Filtek Z350 XT - FT, n=30). After polishing, the specimens were coated with nail varnish for create a control side and subjected to challenges in different solutions: Saliva (pH 7.0); Coca-Cola (pH 2.93) and pH cycling (DES: 4.0) during 15 days. The solutions were changed every day, and the specimens were stored in remineralizing solution (pH 7.0) at the end of each challenge until next day. The nail varnish was removed after the experimental period and the analysis were performed. Data were analyzed through ANOVA two-way repeated measures test with a significance level of 5%.

Results: Regarding the KH, comparing materials submitted the same challenge, BK showed higher values than FT only for saliva. BK specimens suffer the action of pH cycles and immersion in Coca-Cola, since lower values were obtained after these challenges if compared to saliva. FT specimens presented similar KH values for all storages. There was no statistical significant difference between groups for SR data.

Conclusions: In conclusion, in spite of the hardness of Bulk-fill composite resin had been affected by the challenges proposed, both types of composite resins were similar hardness.

CONTROL ID: 3265313

TITLE: "PULL-OUT BOND STRENGTH OF ANATOMIC RESIN FIBER POST VERSUS FIBER POST"

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Evaluate the values of pull-out bond strength of anatomic fiber post with composite Filtek Z350 XT, in premolars treated endodontically with flared roots

Methods: 70 human unirradicular premolars, coronal sectioned and endodontically treated were divided into 2 groups randomly. Each group was made up of 35 unirradicated, treated, desobtured and canals were flared to receive: Group A (control) fiber post and Group B, an anatomized post with composite Filtek Z350 XT (3M ESPE). The post preparation was with Silane (Prosil) and Universal Single Bond adhesive (3M ESPE). A RelyX Fiber Post size 2 (3M ESPE) was used in both samples. In both groups, RelyX U200 AutoMix (3M ESPE) was used according to the manufacturer's instructions and with the Elipar DeepCure-L LED lamp (3M ESPE) previously calibrated at 1200 mW / cm². The samples were subjected to a 500 cycle thermocycling process and tested on a Zwick / roell z100 universal traction machine. Pull-out resistance and type of failure were evaluated by 4x optical microscopy. The results were statistically analyzed using the shapiro wilck test and the student t test, with a significance level of 95%.

Results:

The mean and standard deviation in megapascals (Mpa) for group A was 6.85 (+/- 2.06) and for group B, 7.40 (+/- 2.25). Failure mode distribution for group A was 57% adhesive and 43% mixed, for Group B was 31% adhesive, 54% cohesive and 15% mixed. There was not significant difference in the strength bond between the groups ($p>0.05$).

Conclusions: There are no statistically significant differences in the pull-out adhesive resistance in conventional and anatomical posts in unirradicated premolars with flared roots.

CONTROL ID: 3265321

TITLE: Anticariogenicity of Fatty Acids in an Experimental Caries-Biofilm Model

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: A protective effect of dietary unsaturated fatty acids has been reported, as they would induce a decrease in the cariogenicity of *Streptococcus mutans* biofilms and inhibition of enamel demineralization. However, the effect of other fatty acids or the combination of the already tested stearic, oleic, linoleic in a matrix with surfactant is unclear. Therefore, the aim was to test the anti-cariogenic potential of emulsified fatty acids in a biological model of caries, in vitro.

Methods: Enamel slabs were used to grow *S. mutans* biofilms. Once mature, biofilms were exposed 3 times per day to 10% sucrose for 5 minutes and then to a panel of different fatty acids or to combinations, at a final 10mM concentration and dissolved with tween 80. Positive and negative controls were included. Spent media were used to measure pH twice per day, after each exposure to fatty acids. After 5 days, biofilms were evaluated for biomass, viable microorganisms and the slabs were assessed for the percentage of surface hardness loss to estimate demineralization. Three independent experiments, each in triplicate, were carried out ($n = 9$). Outcomes were compared among the fatty acid groups using ANOVA and Tukey with a significance level of 95%.

Results: Biofilms exposed to 18-carbon fatty acids with surfactant agent induced a reduction in the demineralization of enamel and viable microorganisms when compared to a cariogenic control ($p < 0.05$). Palmitic acid and the mixtures failed to show a reduction in demineralization. No statistically significant differences in acidogenicity and biomass were observed across the experimental fatty acids or their combinations ($p > 0.05$).

Conclusions: In conclusion, a potential anti-caries effect for the 18-carbon fatty acids, either saturated or unsaturated is confirmed. Unlike previous reports, emulsified stearic acid also has a potential anticariogenic properties. Further research is strongly advised. Funding: Fondecyt 1140623 to RAG.

CONTROL ID: 3265322

TITLE: The Psychometric Properties of the Psychosocial Impact Questionnaire of Dental Aesthetics

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the Psychometric Properties of the Impact Questionnaire of Dental Aesthetics (PIDAQ), applied to a population of adolescents from 14 to 18 years in the city of Temuco-Chile.

Methods: Descriptive cross-sectional study randomized stratified of adolescents from 14 to 18 years of public subsidized and private schools of Temuco-Urbano, who agreed to participate in this research. The sample consisted of 254 adolescents, who met all eligibility criteria, and informed consent signed by participants or their legal guardians in case of minors. The Psychosocial Dental Aesthetics Impact Questionnaire (PIDAQ) was used. Statistical analysis of the data was through the SPSS, statistics version 23 program.

Results: The psychosocial dental aesthetics Impact questionnaire (PIDAQ), presented good psychometric properties, 74% internal consistency, 83,8% ICC reproducibility, and construct validity through confirmatory factor analysis (CFA), was performed the Kaiser-Meyer-Olkin (KMO), statistical test and Bartlett test yielding a value of 0.896 and a statistical significance of $P= 0.00$, these values being high determination.

Conclusions: The Psychosocial Impact of dental aesthetic questionnaire (PIDAQ) is an efficient tool for assessment the effect of dental esthetics on the psychosocial status of young adult, from 14 to 18 years of the Temuco-Chile population.

CONTROL ID: 3265326

TITLE: Is there a relationship between Rheumatoid Arthritis (RA) and Clinical Attachment Loss (CAL) in patients with periodontitis?

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: We aimed to evaluate the association between RA and CAL in patients with periodontitis.

Methods: A systematic research was carried out in the Medline, Science direct, Scopus, Liliacs and Embase databases with the terms "periodontitis", "rheumatoid arthritis", "severity", "extent", "distribution" and "complexity" using "AND" and "OR" as Boolean terms.

Results: Five hundred and thirteen articles were obtained in total. After elimination of duplicates and selection by title, abstract and finally full text, 13 articles were finally included. Patients with RA had higher CAL than controls without RA. The most part of patients with RA in the studies were located in stage II severity of periodontitis, as estimated by the average of CAL and the percentage of bone loss.

Conclusions: Periodontal treatment in the early stages of periodontitis would help decrease bacterial levels. This situation could positively influence RA activity. However, longitudinal studies of larger samples are required to investigate the causality of the relationship.

CONTROL ID: 3265333

TITLE: A retrospective Analysis of Panfacial Fractures and Polytrauma: Case Series

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Panfacial fractures (PFFs) are commonly defined as those that simultaneously involve the three transverse thirds of the facial region, as a result of high-energy trauma. The purpose of this study was to analyze the epidemiological features of polytrauma patients (PTP) treated for PFFs in the Mutual de Seguridad Clinical Hospital (MSCH).

Methods: This retrospective observational study was conducted on cases at the MSCH, where the data of patients treated by the Maxillofacial Surgery unit between January 2016 and December 2018 were reviewed. The inclusion criteria was: patient with simultaneous fractures of at least 3 of 4 axial segments of the facial skeleton and diagnosis of polytrauma. Exclusion criteria: insufficient data or not available. 785 files were reviewed, of which 5 were included according to criteria.

Results: The 5 patients had a total of 55 types of fractures (table 1). The most predominant etiology was car accident (60%). The patients were aged between 21 and 57 years with mean age of 45 years. There was only one female patient. All patients had associated other injuries, multiple complications and sequelae (table 2). 80% of the patients underwent reintervention for internal fixation removal (table 3). The time between the accident and the last surgical procedure varies between 8-36 months, while the follow-up time varies between 10-49 months.

Conclusions: The PFFs have a complex nature even for the most experienced surgeons, especially in polytraumatized patients. Among the many possible complications, the most prevalent was wound sepsis. As for sequels, they were aesthetic, dental, neuropathic or ocular problems. In order to reduce the rate of complications, reinterventions and sequelae, it is recommended to resolve the PFFs early, with a multidisciplinary medical team, with emphasis on antiseptic surgical procedures.

CONTROL ID: 3265359

TITLE: Reliability Of Demirjian&Goldstein-Method For Dental Age Assessment Of Chilean Population

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To assess the reliability of the Demirjian&Goldstein method in the assessment of dental age in panoramic radiographs of Chilean children and adolescents.

Methods: A non-probabilistic sample of 182 digital panoramic radiographs of Chilean children and adolescents ranging in age from 3 to 18 years were used to determine their appropriateness to a Chilean population. The stages of mineralization of the seven left mandibular permanent teeth were assessed using the eight stages described by Demirjian&Goldstein by one calibrated evaluator. Intra-observer reliability was evaluated using intraclass correlation coefficient method on data from re-scoring 30 radiographs. The mean age and standard deviations (SD) were calculated separately for males and females of preschool (2-5 years old), child (6-12), adolescent (13-18) and all child (0-18). The reliability was measured with the intraclass correlation coefficient with 95% confidence interval between estimated and real age. Analyses were performed by age subgroups using the student T-test with a significance level of 0.05.

Results: The mean estimated age (SD) was 11.72(3,88) and real was 10.83(4.23). The ICC was 0.875 (95%-Confidence Interval 0.836, 0.905). Difference was found for children less than 6 years old and over 12 years old.

Conclusions: Demirjian's method is reliable for determining the dental age on digital panoramic X-rays of children in Chile, particularly between the ages of 6 and 12.

CONTROL ID: 3265388

TITLE: Prevalence and quality of root canal treatment in a Chilean subpopulation

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Dental caries is a highly prevalent disease, affecting approximately 95% of the Chilean population. Among its consequences, pulpal and periapical pathologies ultimately will require Root Canal Treatment (RCT) to maintain the tooth function. The technical quality of RCT may impact the tooth outcome and survival. To date, the prevalence of RCT in Chile is unknown. The aim of this study was to determine the prevalence of RCT and the technical quality of root canal fillings (RCF) in a Chilean sub-population.

Methods: In this observational cross-sectional study, total periapical radiographs of 1000 patients (582 females, 418 males) aged from 18 to 95 ages, attending to IMAX imagenology center during 2016 were examined to identify the presence of RCT teeth. The technical quality of RCF was also evaluated according to Tavares criteria by two calibrated endodontists. Statistical analysis was performed with Stata V12 software.

Results: 72% of the patients had at least one RCT, within a range from 1 to 23. From the 26216 evaluated teeth, 11% had RCT. No gender-differences were observed when considering relative frequencies. Posterior-superior teeth had the highest prevalence of RCT; meanwhile the antero-inferior had the lowest. Non-RCT teeth showed a proportional drop off as the patients age increased. The quality of RCF was adequate in 55.2% of anterior teeth, 49.7% in premolars and 37.6% in molars.

Conclusions: The present study found a high prevalence of RCT teeth. The older the patients, the higher the frequency of RCT. The technical quality of approximately half of RCF was adequate. The more difficult the RCT, the lower quality of RCF.

CONTROL ID: 3265409

TITLE: Prevalence of dental wear in dental students of Andres Bello University (Santiago) in year 2018

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Determine the prevalence of dental wear in undergraduate dentistry students of Andres Bello University, Santiago, in year 2018 and analyze if there are differences between the genders, age and compromise of dental sextants.

Methods: Accomplished study was descriptive. 200 students from the dental school of the Andrés Bello University were evaluated. Participants were randomly selected according to the inclusion criteria (permanent dentition, without missing teeth that generate spans, absence of diastema) and exclusion criteria (Orthodontic treatment). Intraoral inspection was performed by 2 qualified and calibrated evaluators with an intra and inter examiner using Kappa index (0.8). All patient were recorded using intra oral photographs with Nikon 3100, macro 50mm. Scoring was awarded to examinees according to the BEWE rating. Data were recorded as age, gender, undergraduate year and sextant. To evaluate statistical differences between wear according to BEWE with gender, age, course and sextant, the Chi-square test was used.

Results: In relation to gender, 100% of the men presented physiological and / or pathological wear, while 97.4% of the women presented it. In the age distribution, a group between 21-24 years old presented 97.6% with physiological and / or pathological tooth wear, while a group between 25-33 years old presented 99.1%. As for the academic year, 98.7% of students in 4th year presented wear, 98.7% presented 5th year, and 98.1% in 6th year. Finally, a higher prevalence of score 1 was observed in sextant 2 and 5, with 92% and 93.5% respectively.

Conclusions: A high prevalence of physiological and / or pathological tooth wear was observed in the undergraduate Dentistry students evaluated. There were no statistically significant differences between tooth wear and the three variables analyzed, however, there is a significant increase in tooth wear in sextants 2 and 5.

CONTROL ID: 3265413

TITLE: Drug Delivery System for Lidocaine and Sensitization of TRPV1 Receptor

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Local anaesthetics are clinically used to control pain in dental procedures. Thus, it was seen that lidocaine modulates TRPV1 receptors, which are expressed by nociceptive cells and are activated at high temperatures. We propose a modified drug delivery systems to improve the properties of anaesthetics, increasing the duration of anaesthesia and decreasing the toxicity using complex with 2-hydroxypropyl- β -cyclodextrin (HP-B-CD). The aim of this study was to characterize these molecules, establish optimal pharmacological concentrations and evaluate the activity of the HP-B-CD-Lidocaine complex exposure in TRPV1 pain channels.

Methods: The complex inclusion of HP-B-CD and the lidocaine was conducted in 1:1 molar ratio. The solution was shaken for 24h at RT and lyophilizate for storage. To evaluate the stability of samples and possible changes in the crystals after the complexation it was conducted SEM method of analysis. Intracellular calcium measurements were recorded in HEK293 cells transfected with rTRPV1 in different set of concentrations and compared with capsaicin control group. Cell viability was also checked for all concentrations tested in the experiments. For all experiments, nonparametric statistical analysis was used considering gaussian pattern of data distribution and $p < 0.05$.

Results: The HP-B-CD-lidocaine complex was observed as a three-dimensionally stable molecule. At a concentration of 100 μ M HP-B-CD-lidocaine complex demonstrated to enhance the IC50 parameter for cell viability when compared to the lidocaine as itself. The lidocaine hydrochloride alone had a very low ability to activate the TRPV1 channels, however, when complexed with HP-B-CD, an intense signal for calcium levels was found. The HP-B-CD-lidocaine complex is stable and decreases the cytotoxicity of lidocaine in gingival fibroblasts

Conclusions: Due to the nature of the TRPV1 channels, pain caused by burns could be blocked locally by HP-B-CD-lidocaine. In addition, this complex could be useful as a drug delivery formulations to treat chronic pain due to the prolonged pharmacological release observed.

CONTROL ID: 3265426

TITLE: Shear Bond Strength of Recycled Brackets Using Different Adhesive Materials.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To determine and compare the shear bond strength (SBS) of new and recycled orthodontic brackets bonded to enamel, using two different adhesive materials. To compare enamel surface and bracket base characteristics after SBS test.

Methods: A total of 72 extracted human premolars were collected and randomly divided into 6 groups representing different adhesive treatments, using light cured composite (LCC) and resin-modified glass ionomer (RMGI): group 1 (control), new bracket bonded for the first time/ LCC; group 2 (control), new bracket bonded for the first time/ RMGI; group 3, rebonding with a new bracket/ LCC; group 4, rebonding with a new bracket/ RMGI; group 5, rebonding with a recycled bracket/ LCC; group 6, rebonding with a recycled bracket/ RMGI. For groups 5 and 6, the same brackets were sandblasted, bonded and debonded for SBS testing. SBS was recorded in all groups using a Bisco® testing machine. Enamel and bracket bonding interfase were assessed using light microscopy. Adhesive remnant (AR) on bracket base was calculated using a computer software.

Results: Bracket type effect: No statistically significant differences were found in SBS and percentage of AR between new or recycled brackets (groups 1, 2, 3, 4 5 and 6). Adhesive type effect: LCC SBS was significantly higher than RMGI (p-value= 0,00592). Also, brackets bonded with LCC showed significantly higher AR than those bonded with RMGI (p-value= 0,00013). There are no statistically significant differences for the presence of enamel fractures between groups.

Conclusions: Bracket recycling during rebonding is a reliable option in terms of bond strength. According to the literature, both LCC and RMGI accomplish acceptable SBS values. The clinical meaning of these results is that clinicians could use either of these types of adhesive, focusing on patient needs. Also, enamel fractures after debonding were not associated with any type of adhesive system or bracket.

CONTROL ID: 3265436

TITLE: Deciduous Teeth are Lesser Affected in Regions with Endemic Fluorosis.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To compare the dental fluorosis among deciduous, mixed and permanent teeth of children living in a community affected with endemic fluorosis.

Methods: The study was authorized by the ethics committee of the University of Barcelona and the Director of the Kalyandur Hospital, India. Children between 4 and 16 years old from the rural community of Anantapur, India, were examined. All examinations were carried out with the prior child consent and informed consent of the parents or legal guardian. The patients were grouped according to the type of dentition in Deciduous, Mixed, and Permanent. Inclusion and exclusion criteria were applied to generate adequate information for the study objectives. Three dentists were calibrated to determine the level of fluorosis by the Thylstrup and Fejerskov Index (ITF), which sets the level of fluorosis from 0 (normal) to 9 (severe). The data were analyzed by the SPSS statistical program and was considered as a level of significance $p < 0.05$.

Results: 631 patients met the inclusion criteria (56.9% girls and 43.1% boys). The average age was 10.03 years. A 6% presented deciduous dentition, 70.4% Mixed, and 23.6% Permanent. The 4.9% did not show dental fluorosis (ITF=0), 7.8% had mild dental fluorosis (ITF=1-3), 12% had moderate dental fluorosis (ITF=4-5) and the 75.3% had severe dental fluorosis (ITF=6-9). The Chi-square test did not show significant differences between gender about the severity of fluorosis ($p=0.452$). However, a significant difference was observed among the type of dentition considering the severity of fluorosis ($p < 0.05$), being the Deciduous teeth group the least affected.

Conclusions: In the study group, dental fluorosis was especially severe in patients with mixed and permanent dentition, regardless of gender, which suggests that fluoride intake transmitted from mother to child during the pregnancy has generated a lesser effect on the deciduous dentition.

CONTROL ID: 3265448

TITLE: Evaluation Of The Initial Stability Of Orthodontic Self-Drilling Miniscrews Re-Inserted

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The purpose of this in-vitro study was to evaluate the initial stability of miniscrews re-inserted, through maximum insertion torque (MIT) and resonance frequency analysis (RFA), and the structural integrity under scanning electron microscopy (SEM).

Methods: Thirty titanium self-drilling miniscrews were inserted with an electric motor, at iliac crest bone of porcine specimens. Later, the miniscrews were deinserted with the same device. These miniscrews were sterilized and re-inserted like the same way as the first insertion, but in another place. After each insertion, MIT and RFA were evaluated. The MIT was assessed through a digital torque meter and the RFA was evaluated through Osstell device, which delivers an "Implant Stability Quotient" (ISQ) value. The structural integrity of the miniscrews was evaluated under scanning electron microscopy (SEM) after the first and second insertion. Descriptive and inferential statistics were performed.

Results: The average of MIT value for the first insertion was 13.17 Ncm (SD +/- 4.96) and for the re-insertion was 15.4 Ncm (SD +/- 4.95). The average of ISQ value for the first and second insertion was 49.31 (SD +/-1.86) and 45.74 (SD +/-1.76) respectively. The MIT increased and the ISQ decreased both significantly, at the time of comparing the second insertion with respect to the first. There was a statistically significant negative correlation between the MIT and ISQ at the second insertion. The SEM evaluation showed that after the first insertion, 60% of the miniscrews had damage to their tip and after the re-insertion, the tip damaged increased until it was present in 87% of the miniscrews.

Conclusions: Under this study model, re-insertion of self-drilling miniscrews produces a deterioration of the integrity of their tip, affecting the initial stability through the MIT and ISQ values.

CONTROL ID: 3265453

TITLE: Functional Dentition And Its Association With Educational Level: ENS 2016-2017.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives:

Analyze the association between the educational level (EL) and the prevalence of functional dentition in the population aged fifteen and over, based on the results of the Chilean National Health Survey 2016-2017 (ENS 2016-17).

Methods:

With data obtained from the ENS 2016-17, the prevalence of functional dentition (presence of 20 or more teeth in the mouth) was calculated, and its association with the educational level, through logistic regression models and adjusted odds ratios (OR) for the variables sex, age, and area (urban or rural). EL was divided in three categories: low (LE), middle (ME) and high educational level (HE).

Results:

The study considered of 5473 individuals, with an average age of 43.13 years old and of which 36.6% were men. The distribution of sample according to EL was 24.3% for LE, 53.9% for ME and 21.8% for HE. The global prevalence of functional dentition was 75.30% [73.98 - 76.62]. In relation to the EL, the prevalence of adjusted functional dentition for LE was 28.82% [25.51-32.13], for ME was 79.53% [78.18-80.88] and for HE was 94.42% [93.23-95.61]. The adjusted OR in subjects of HE was 13.33 [8.02-22.15] and in ME was 2.81 [2.03-3.87] with respect to the LE (OR = 1). In men, the prevalence of functional dentition for each category of EL was 31.83% [26.04-37.61] for LE, 82.20% [80.36-84.04] for ME and 94.50% [92.83-96.15] for HE. In women, the prevalence of functional dentition in LE was 26.74% [22.86-30.62], 77.03% [75.20-78.86] in ME and 94.34% [93.06-95.63] in HE. The differences in prevalence were all statistically significant (p -value<0.01).

Conclusions:

This study showed that a low educational level was associated with a significant tooth loss in the Chilean population. Similarly, there is a gradient in the prevalence of functional dentition which increased as the educational level of individuals increases, independent of age.

CONTROL ID: 3265454

TITLE: Occlusal Appliances Effects on Airway and Respiratory Variables: Systematic Review

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the effect of occlusal appliances used in management of temporomandibular disorders (TMD) and sleep bruxism (SB) on airway and other respiratory variables

Methods: An electronic search was conducted between 1960 and 2018 in PubMed, Cochrane Library, Embase, EBSCOhost, Web of Science, ScienceDirect, Lilacs, Bireme and Scielo including all languages. The articles were selected and analyzed by two authors independently and the methodology of selected studies was assessed by The Grading of Recommendations Assessment Tool, Development and Evaluation (GRADE)

Results: 3182 potentially eligible articles were identified in the first approach and finally 5 studies were included according to inclusion criteria. 3 were randomized clinical trial (RCT) and 2 controlled clinical trial (CCT). The studies were grouped according to the occlusal appliance therapy in: (a) sleep bruxism (n=2); (b) temporomandibular disorders (n=1) and (c) patients without sleep bruxism and TMD (n=2). One study concluded that the use of OA produces effects on the airway in patients with sleep bruxism and two studies showed increased of apneic events, increase of Apnea-Hypopnea Index (AHI) and an increase in the percentage of sleep time with snoring by 40% in subjects with OSA. The quality of evidence was low due to high risk of bias according GRADE assessment

Conclusions: The amount of evidence was limited with a low quality, so it was not possible to establish consistent conclusions on this topic. Due to heterogeneity of the designs and methodologies it is not possible to assert that occlusal appliance could produced changes in respiratory variables in TMD, AHI and SB patients. RCTs are required, with higher levels of evidence to determine a possible effect of OA on respiratory variables and airway

CONTROL ID: 3265455

TITLE: Effect Of Boldine On Alveolar Bone Resorption During Periodontitis

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Boldine is an alkaloid present in the leaves and bark of Boldo, a Chilean native tree. Traditionally, boldine has been described as a potent natural antioxidant with anti-inflammatory and anti-tumor capacities. Recently, boldine has been associated with inhibition of joint subchondral bone resorption in an animal model of rheumatoid arthritis, by modulating the T-lymphocyte-mediated immune response. Similar than rheumatoid arthritis, periodontitis is characterized by bone resorption and this periodontitis-associated alveolar bone resorption is caused by an immune imbalance; in particular, an imbalance between the Th17-type and T regulatory (Treg)-type of immune response. Thus, this study aimed to determine the role of boldine in alveolar bone resorption during periodontitis and the modulation of the periodontal Th17/Treg imbalance.

Methods: 8-weeks-old mice affected with ligature-induced experimental periodontitis were treated with local or systemic administration of boldine during 15 days. Sham-treated periodontitis and non-infected mice were used as controls. Alveolar bone levels were quantified by micro-computed tomography. The presence of TRAP⁺ osteoclasts and detection of RANKL and OPG in periodontal lesions were analyzed by histochemistry and immunohistochemistry, respectively. The expression levels of Th17 or Treg-related cytokines were quantified by qPCR. Finally, the Th17 and Treg periodontal infiltration were quantified by flow cytometry.

Results: In a dose-dependent manner, boldine-treated periodontitis mice revealed lower levels of alveolar bone resorption compared with sham-treated periodontitis mice, and these lower levels were associated with fewer osteoclast and RANKL detection. In addition, boldine-treated mice shown lower Th17-type of cytokine expression and Th17-cell periodontal infiltration, as well as higher Treg-type of cytokine expression and Treg periodontal infiltration, compared with sham-treated periodontitis mice.

Conclusions: Boldine inhibits alveolar bone resorption during periodontitis and this inhibition could be explained, at least partly, by modulation of periodontal Th17/Treg imbalance.

CONTROL ID: 3265467

TITLE: Cytotoxicity of universal adhesives and autophagy in Saos-2 Cells

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Objective: This study aims to determine if universal dental adhesives have a cytotoxic effect in Saos-2 cells due to activation of the autophagic route.

Methods: Saos-2 cells were stimulated with three different universal adhesives: Ambar universal (FGM), Single Bond universal (3M), Prime & Bond universal (Dentsply) at a concentration of 0.1% v/v. Culture medium with no adhesives or 10 mM Rapamycin was used as a negative or positive control, respectively. Levels of p62 and LC3I/LC3II were evaluated by immunoblot and the presence of autophagosomes was addressed by fluorescence microscopy after 2-6h with the stimulus. The cytotoxicity of the universal adhesives (24 h exposure) was evaluated by the MTT assay, in the presence or absence of the 3-MA autophagy inhibitor.

Results: There was a decrease on the viability percentage for all the samples treated with universal adhesives, as follows: Ambar universal, 2% viability; Single bond universal, 56% viability; Prime & Bond universal, 1.9% viability. When treated with the autophagy inhibitor 3-MA the cell viability decreased even more, especially the ones treated with Single bond Universal (18.9% viability), which suggests that the autophagy is not a mechanism for cell death, but a way to improve cell survival reduced by dental adhesives. There was also an increase in the LC3II/I ratio, and a decrease in the p62 levels measured by immunoblot in the cells exposed to Ambar universal, which is compatible with autophagy events at 6h of exposure. Immunofluorescence imaging evaluation shows autophagosomes formation with the three adhesives after 6h.

Conclusions: Universal dental adhesives evoke cytotoxicity of Saos-2 cells. Autophagy pathways are activated as a strategy for cell survival and adaptation.

CONTROL ID: 3265476

TITLE: Risk Factors and Etiology for Temporomandibular Joint Osteoarthritis. A Systematic Review

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to assess the risk factors and etiology for temporomandibular joint osteoarthritis (TMJ-OA).

Methods: A systematic research was performed on electronic databases in PubMed, Cochrane Library, Embase-Medline, EBSCOhost, Scopus, Scielo, Bireme, Lilacs, ScienceDirect between 1960 and 2018, including all languages. Observational analytical studies were identified. The data were collected and extracted by two independent authors. The methodology of selected studies was assessed by The Grading of Recommendations Assessment Tool, Development and Evaluation (GRADE) and Newcastle-Ottawa Scale (NOS).

Results: 6926 records were identified and only 22 were analyzed. 1 cohort and 21 case-control studies were identified. Quality of evidence was low due to high risk of bias according to GRADE assessment and none of the reviewed articles obtained the highest score based on NOS scale, with an average of 4.68 and a median of 5 points. 16 articles established risk factors for TMJ-OA being grouped according to type of risk factor in: DDwoR or ADD (n=5); Bone marrow edema (n=2); Missing posterior teeth (n=1); Asymmetric molar or canine Angle classes (n=1); 1607 1G/2G polymorphism of the MMP-1 (n=1); greater condylar angle (n= 1); Low condylar bone quality (n=1); Allergy (n=1); Wind instruments (n=1); GDF5, SMAD3 and RUNX2 polymorphisms (n=1) and Matrilin-3 gene polymorphism (n=1). Risk of development TMJ-OA increased in patients with DDwoR and those who have greater condylar angle of the studies that determined it, had a better methodological quality.

Conclusions: The evidence available is insufficient to establish definitive conclusions, since the studies were very heterogeneous and presented a high risk of bias. To establish the etiology of TMJ-OA requires cohort and high-quality studies. However, DDwoR and greater condylar angle seems to be an important etiologic factor to development of TMJ-OA.

CONTROL ID: 3265484

TITLE: In vitro Assessment of the Apatite-forming Ability of Commercial Calcium Silicate Cements

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of the study was to evaluate the in-vitro mineralization capability (apatite-forming ability) of two calcium silicate cements materials for endodontics and restorative dentistry purposes: ProRoot® MTA (Dentsply, MTA) and Biodentine® (Septodont, BD).

Methods: BD and MTA discs (3 x 1 mm) were prepared. The ability of the materials to induce mineral formation was assessed by immersion in simulated body fluid (SBF), during 3 and 7 days. The surface of discs was analyzed using Fourier transform infrared spectroscopy (FTIR) and scanning electron microscopy with energy dispersive X-ray analysis (SEM-EDX) before and after immersion in SBF.

Results: FTIR and SEM analysis revealed that both cements showed the deposit of a layer of apatite after 7 days of SBF immersion. However, greater apatite formation was observed on MTA surface. The EDX compositional analysis of the mineral phase showed that the Ca/P molar ratio of MTA was more similar to hydroxyapatite composition, than BD deposits.

Conclusions: Although both materials demonstrated bioactive properties, it appears that MTA presents greater ability to form apatite than BD. Further assays are required to confirm if the differences are significant.

CONTROL ID: 3265655

TITLE: Development of new biomaterials based on polyamide and sodium trimetaphosphate for biomineralization

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to obtain a biomaterial based on Polyamide 6.6 (PA6.6) and of sodium trimetaphosphate nanoparticle (TMPn) at different concentrations and to evaluate its physicochemical properties for possible dental application.

Methods: TMPn was obtained from the mechanical milling process for 48h. The nanocomposites were obtained by electrospinning technique with the addition of 2.5, 5 and 10% TMPn w/w (TMPn: PA6.6). The nanocomposites were analyzed for their structural properties by ^{13}C solid-state NMR and FTIR technique. The morphology was evaluated by Scanning Electron Microscopy (SEM). Thermal properties were assessed TGA and DSC techniques, while the mechanical properties were evaluated by Dynamic Mechanical Analysis (DMA).

Results: Grinding reduced the TMPn particle size from the micrometer scale to the nanometer scale (73.4 ± 10.4 nm), with spherical morphology and orthorhombic crystal structure. By ^{13}C NMR it was observed all chemical shifts and were assigned according to N6. By FTIR technique it was observed peaks corresponding to PA6.6 and TMPn. SEM images showed the formation of nanofibers with diameter (140 ± 37 nm) for PA6.6 and with the addition of TMP there was an increase in nanocomposite diameter, showing that TMPn increased the viscosity of the polymeric solution leading to this increase in fiber diameter. Regarding the thermal behavior of the nanocomposites, the addition of TMP increased the thermal stability of nanocomposites due to the barrier effect leading to the materials degradation at a higher temperature. Furthermore, the addition of TMP increased the glass transition temperature in nanocomposites, indicating a reduction in polymer chain mobility. Regarding the mechanical properties, the PA6-TMPn-2.5% nanocomposite presented higher elastic modulus, elongation at break and tensile strength.

Conclusions: These results showed an approach for TMPn application in polymeric materials, forming stable nanofibers with potential application of the material as a biomaterial.

CONTROL ID: 3266004

TITLE: Evaluation of the effects of low intensity laser on osseointegration of implants with different surfaces

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of the present study was to evaluate the effects of low intensity laser on the osseointegration process in implants manufactured in Ti-6Al-4V alloy with surface machined (MS) and modified by aluminum oxide blasting followed by acid etching (SBAS), installed in rabbit tibias.

Methods: Twenty Albinus rabbits received 40 external hexagon implant (4mmx10mm) in surgical beds milled in the medial portion of the right and left tibias, and one implant of each surface was randomly installed. The animals were divided into two groups: Group I - animals that did not receive laser therapy and Group II - animals that received laser therapy. After each implant was installed, its stability coefficient was measured by resonance frequency analysis (ISQ). At 21 and 42 days, the implant stability coefficient (ISQ) was measured again, followed by biomechanical analysis by means of removal torque. Data were submitted to analysis of variance and Tukey t test.

Results: The resonance frequency measurements showed no statistically significant differences ($p < 0.05$) between the groups in the analyzed periods. However, Group II removal torque measurements were statistically higher ($p < 0.05$) when compared to Group I at 21 and 42 days.

Conclusions: In view of the results obtained, it can be concluded that the low intensity laser accelerated the early phases of the osseointegration process, allowing higher removal torque values when compared to implants installed without the low intensity laser.

CONTROL ID: 3266068

TITLE: Cariogenic Potential Of Liquid Sweeteners Commercialized In Chile, In Vitro.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Artificial sweeteners in different formats have been developed as sugar substitutes. Our group previously demonstrated that solid commercial sweeteners retain a cariogenic potential, but no information is available on the caries potential of the liquid sweeteners widely available in the market. Furthermore, the effect of these compounds has been tested in their pure, rather than the commercial form. The goal of this study, therefore, was to analyze the cariogenic potential of liquid sweeteners commercialized in Chile.

Methods: An in vitro study with a biological model of caries on enamel slabs with *Streptococcus mutans* UA159 biofilms was used. Six liquid sweeteners commercialized in Chile were analyzed: Saccharin, Sucralose, Tagatose, Fructose, "Balanced" Stevia and Pure Stevia. After biofilm formation, the slabs/biofilms were exposed for 5 days, 3 times per day for 5 min to the treatments, in similar quantities, with the corresponding positive and negative controls. Media pH was monitored twice per day. At the end of the experiment, the following outcomes were assessed: acidogenicity, loss of surface hardness (demineralization) and from the biofilms the biomass and viable cells was analyzed. The entire experiment was repeated three times, each in triplicate (n=9).

For the statistical analysis, ANOVA and Tukey with a level of significance of 95% were used.

Results: Results indicated that the different sweeteners induced an overall reduction of about 35% on acidogenicity and over the enamel demineralization, when compared to 10% sucrose, used as the caries-positive control ($p < 0.05$). All the tested products resulted in higher demineralization and pH than the caries-negative control (p but higher than the negative control ($p < 0.05$). No significant differences we observed on biomass and viable cells among all the sweeteners.

Conclusions: In conclusion, liquid sweeteners marketed in Chile are less cariogenic than sucrose, but they retain the ability to induce demineralization and should be recommended with caution.

CONTROL ID: 3266146

TITLE: Oral Cancer: Sources of Information and Impact on Patients

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: This study was aimed to determine the main sources of information on oral cancer (OC) and its impact on adult patients treated at the Dental Clinics of the University of Valparaíso (DCUV). To compare the knowledge about the existence of OC in relation to other types of cancer, to identify the sources of information and their relationship on the amount of knowledge of OC and to estimate the effect of advertising in cigarette packs on smoking habits.

Methods: Descriptive cross-sectional study in 335 adult patients through a survey validated by a committee of experts and applied face-to-face in the waiting rooms of the DCUV. Data were entered by Microsoft Excel 2007 and analyzed by STATA version 11.

Results: Of the total interviewees, 64% were women and 36% were men. The average age was 42 years (range 18-88 years). The 99% knew the existence of breast cancer, 97% skin cancer, 95% lung cancer and 66.57% OC. With regard to obtaining information, television and internet obtained the same value (30.15%), followed by cigarette packs (27.46%), dentist (16.42%), posters (13.43%) and dentistry students (10.45%). When chi square test was done, a p-value of less than 0.05 was obtained in all relationships, there being statistically significant evidence between the information provided by the different sources and the percentage of knowledge of OC for the sample. Regarding the effectiveness of advertising against smoking, 69% considered that it has not been effective in abandoning this habit.

Conclusions: Patients treated in the DCUV showed a low level of knowledge about OC compared to other types of cancer. Television and the internet were the main sources of information. Most respondents felt that advertising in cigarette packs has been insufficient to combat this habit.

CONTROL ID: 3266450

TITLE: Orthodontic treatment needs in 12 years old children of Cochrane

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Introduction: The city of Cochrane has a population of 728 children under 15 years old, of which 53% could present malocclusions (according to statistics from MINSAL 2007). Cochrane patients referred to orthodontics, must travel to Coyhaique, 331 kilometers away, and only 15 patients entered each year in the fixed orthodontic program of the public health insurance FONASA. Thus, it is necessary to prioritize the referral of patients with greater need for treatment.

Goals:

Evaluate the orthodontic treatment needs in 12 years old children of Cochrane

Evaluate the level of agreement by the three operators

Methods: Method: Three operators individually evaluated the orthodontic treatment needs in thirty nine adolescents out of the forty-four 12-year-old students enrolled in Cochrane Elementary School. Operator A, prior calibrated with an expert (Kappa 0.81), used the "Clinical Reference Guide and Orthodontics for Public Health Services (GRCO)", a standardized and validated instrument. Operator B, applied the GRCO without prior calibration; and Operator C, carried out the evaluation without any guidance. Data were tabulated and the level of concordance was determined with Cohen's Kappa calculation.

Results: Results: Of the 39 patients evaluated, Operator A referred 20 patients (51.3%), Operator B referred 18 (46.2%) and Operator C referred 23 (59%). The level of concordance obtained was moderate between Operator A and B (0.59); moderate between Operator A and C (0.53) and discrete between Operator B and C (0.342).

Conclusions: Conclusions: The low concordance between operators, indicate the need to standardize the referral criteria to the orthodontic specialty.

CONTROL ID: 3266501

TITLE: Mandibular Rest Position Analyzed Through 3D Electromagnetic Articulography. Pilot Study.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study is to determine the linear and angular displacement described by the mandible when applying different methods to reach rest position, employing 3D electromagnetic articulography.

Methods: Three-dimensional electromagnetic articulography (EMA 3D) was employed to register the position of the mandible of a young healthy volunteer (Ethics Committee Approval 080_18). Three reference sensors were glued on glabella, right and left mastoids in order to eliminate head movements from the recordings. Another three reference sensors were used to determine the position of the occlusal plane. Three active sensors were placed on the mandible: on the inter-incisive mid-line, on the midline between first molar and premolar on the right and left sides. The position of each active sensor was recorded during position of maximal intercuspation (MIC) and rest position (RP). Rest position was achieved through different methods: "No Command", "Swallowing", "Mississippi" and "M Phoneme". The linear and angular displacement of each sensor from MIC to each RP was calculated employing custom developed Matlab Scripts.

Results: The maximum displacement was observed in the position achieved by the "No Command" method, with a linear displacement of 1.4 ± 1.0 mm and an angular displacement of 1.4 ± 0.6 grads. The minimum displacement was observed in the position achieved by the "Swallowing" method, with a linear displacement of 1.2 ± 0.5 mm and an angular displacement of 0.5 ± 0.4 grads. The higher standard deviation was observed for the "No Command" method and the lower for the "Swallowing" method.

Conclusions: The proposed methodology could be used to analyze the rest position of the mandible with high precision (0.3 mm). In the future, we expect to analyze the variability of the different methods employed to reach RP, recruiting a relevant number of participants, in order to determine which method is more reliable.

CONTROL ID: 3266534

TITLE: Translocation of Endodontic Pathobionts through Mononuclear Blood Cells.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate bacterial loads of *Porphyromonas gingivalis* (Pg), *Porphyromonas endodontalis* (Pe) and total bacteria (TB) in intracanal exudates and peripheral blood mononuclear cells (PMBC) from apical periodontitis (AP) and healthy individuals.

Methods: Healthy individuals with diagnosis of AP with at least one associated apical lesion and healthy volunteers consulting at Dental Clinic, Faculty of Dentistry, Universidad de Chile were included. Exclusion criteria were recent consumption of AIDs or antibiotics (3 months). Intracanal samples (n=39) were collected with sterile paper tips and transported in RTF medium and DNA was extracted by boiling method. PMBC were isolated from blood samples (n=14 per group) by Ficoll gradient and DNA was extracted using a commercial kit. The presence and number of bacterial DNA copies were measured by qPCR, using previously validated primers. The results were analyzed with software STATA V 11 ($p < 0.05$).

Results: The detection of TB was positive in all intracanal samples; Pe and Pg were detected with frequencies of 41% and 20.5%, respectively. On the other hand, TB was detected in all PBMCs and bacterial load was significantly higher in AP individuals (953.6) compared to controls (300.7) ($p < 0.05$). Pe was detected in 50% and 64.3%, but its bacterial load tended to be higher in PA versus control PBMCs, respectively (262.3 vs 158.8; $p > 0.05$). In contrast, Pg was not detected in PMBC.

Conclusions: Higher bacterial loads can be identified in PMBC from AP compared to healthy individuals. Also DNA from the specific endodontic pathobiont Pe can be detected in PMBC. Accordingly, PMBC translocate specific bacteria or their DNA through circulation to distant tissue/sites and might mediate systemic responses against them.

CONTROL ID: 3266592

TITLE: 3D Structural Variation of L-PRF Under Different Centrifugation Protocols

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To describe and compare the fibrin network architecture, presence and morphology of the leukocytes in the L-PRF under three different centrifugation protocols.

Methods: Twelve blood samples were collected from 6 voluntary dentistry students between 20 and 25 years old, with no medical history, recent aspirin intake or any condition that affects the coagulation process. This was approved by the ethics committee of the Universidad Austral de Chile in June 8th 2018. These samples were separated equally into three groups: (1) 200G x 12 minutes, (2) 400G x 12 minutes and (3) 600g x 12 minutes (3). From each group, two samples were immersed in 10% formaldehyde for the optical microscope, stained with Masson and Giemsa stains respectively. The other two in 2.5% glutaraldehyde for scanning electron microscopy.

Results: Under the optical microscope, the distribution and cellular architecture of the leukocytes were observed and compared among groups, and the density of the fibrin matrix partially, with leukocytes present in all groups, but the distribution and quantity in each group was slightly different, being group (2) the most homogeneous. In the scanning microscope analysis the results shown in the optical microscope were confirmed, and also analyzing the quality of the fibrin matrix and morphological evaluation of cells. The fibrin matrix was dense in all groups, with leukocyte presence, but group (2) was the one with the best quality, quantity and distribution overall.

Conclusions: We can conclude that the 400g x 12 minutes protocol, with the centrifuge we used, shows the best results overall compared with the other two groups, but we must consider that our evaluation was only visual, with one centrifuge brand. To further research the L-PRF quality and ideal protocol, both visual and growth factor measurement should be done, with the same centrifuge and different preparation protocols.

CONTROL ID: 3266794

TITLE: Mononuclear Cell Contribution to Systemic Inflammatory Burden in Apical Periodontitis

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the contribution of peripheral blood mononuclear cells (PBMC)-derived cytokines and TLR-2 gene regulation to systemic inflammatory burden in apical periodontitis (AP).

Methods: Blood samples from otherwise healthy individuals with AP (n=20) and controls with no AP (n=20) were collected at the Dental Clinic, Faculty of Dentistry, Universidad de Chile. PBMC were isolated by Ficoll gradient and DNA and RNA extracted. The RNA was converted to cDNA and TLR2 gene expression was determined by qPCR. The DNA was subjected to bisulfite conversion and amplified with qPCR with validated primers for bisulfite-treated DNA. The PCR products were sequenced, analyzed with BiQanalyzer and methylation profiles determined. A PBMC fraction was cultured for 24 hours in serum-free RPMI and supernatants were collected and IL-1 β , TNF- α , IL-6, IL-6 R α , IL-10 and IL-12p70 protein levels were determined through quantitative multiplex assay. Systemic inflammation was defined by hsCRP levels in serum, measured by turbidimetric method. Results were analyzed with Stata V 12, $\alpha=0.05$.

Results: PBMC from patients with AP showed higher secreted levels of IL-1 β , IL-6 and TNF- α ($p<0.05$) and a slight overexpression of TLR-2 mRNA levels. CpG island on TLR-2 gene was hypomethylated (16% vs 21%, respectively; $p<0.05$), as well as specific CpG dinucleotides localized in -77, -69, -16, -12, and -8 (NF κ B) sites in controls versus AP. hsCRP was significantly higher in AP vs control individuals (2.54 and 0.74 respectively) in bivariate analysis. Multivariate analysis controlling for imbalanced variables (age, smoking and DMTF index) showed that PBMC-derived IL-1 β was the main predictor for serum hsCRP levels (R-squared 0.5629, $p<0.05$).

Conclusions: PBMC from patients with AP exhibited a pro-inflammatory profile compared to healthy controls, with no evident association to TLR2 regulation. Particularly PBMC-derived IL-1 β explained serum elevations of hsCRP.

CONTROL ID: 3266835

TITLE: Extracellular Vesicles in Periimplant Gingival Fluid of Patients with Periimplantitis, Perimucositis and Healthy Implants

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To identify the presence of extracellular vesicles (EV) (microvesicles and exosomes) in peri-implant gingival fluid (PIGF) in patients with healthy implants (HI), perimucositis (PMI) and periimplantitis (PPI); and relate its concentration to different periimplant clinical variables

Methods: 12 patients were recruited with a total of 38 osseointegrated implants. 13 of them were diagnosed as HI, 12 as PMI and 13 with PPI. Clinical variables of periimplant probing depth, bleeding and suppuration on probing, smoking, plaque index, and history of periodontal disease were recorded. PIGF samples were taken from all patients, and they were processed for the isolation of EVs with ExoQuick®. Its quantification was performed using Nanoparticle Tracking Analysis and its morphological characterization with transmission electron microscopy

Results: A higher EVs total concentration ($p = 0.0006$), exosomes ($p = 0.005$) and microvesicles ($p = 0.005$) were observed in patients with PPI compared to HI. Also, in PIM compared to HI, were observed a significantly increase in the concentration of total EVs ($p = 0.001$), exosomes ($p = 0.007$) and microvesicles ($p = 0.0009$). In addition, PPI patients presented higher severity of periodontal disease ($p = 0.018$), bleeding on probing ($p = 0.002$), and periodontal probing depth of implants ($p = 0.009$).

Conclusions: Patients with PPI and PMI have significant increases in total EVs, microvesicles and exosomes in PIGF compared to healthy implants.

CONTROL ID: 3266848

TITLE: Prevalence of posterior crossbite in the Barros Luco Healthcare Complex

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The objective of the study was to study the epidemiology of cases of crossbites in patients treated at the Barros Luco Healthcare Complex.

Methods: It has been made an observational epidemiological study, were was analyzed the data from the anonymous database of patients in treatment during the present year, in the specialty of Orthodontist of the Dental Specialties Service of the Barros Luco Healthcare Complex.

Results: Of the total of 250 patient, 190 was registered with no alteration, 43 registered unilateral posterior crossbite and 17 registered bilateral crossbite.

Conclusions: The cross bites correspond to a malocclusion in the transverse plane of the maxilla, defined as the alteration in the correct articulation of the palatal cusps of the molars and upper premolars with the molars and lower premolars.

Dentomaxillary Abnormalities correspond to the third most prevalent oral pathology in the Chilean population, after dental caries and periodontal diseases.

The professional practice usually generates a number of queries related to cranio faciodental development and especially with the transverse growth that dental arches possess, resulting in the presence of posterior cross bite. An early diagnosis is essential for orthopedic treatment to perform the correction of crossbites at an early age, in mixed dentition 1st Phase, since with our devices we will perform an orthopedic treatment of opening the middle palatal suture and correct skeletal transverse problems.

CONTROL ID: 3266865

TITLE: Clinical symptoms lesion size and smoking status in apical periodontitis

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To assess whether the presence of clinical symptoms and lesion size were associated with smoking status in apical periodontitis individuals.

Methods: Cross-sectional study. Patients with diagnosis of apical periodontitis (AP) and at least one apical lesion consulting at the clinic of surgery in the Faculty of Dentistry Universidad de Chile, and Public Assistance Hospital (HUAP), Santiago, Chile were included. Exclusion criteria were co-existence of any systemic disease or NSAIDs or antibiotics consumption of in the last 3 months. Patients were examined; demographic, clinical and radiographic data, and current smoking status were registered on clinical records. The results were analyzed with Chi squared or Mann-Whitney test in STATA® V12 program.

Results: A total of 50 non-smokers and 34 smokers were included. The demographic variables age, sex and socioeconomic level were similarly distributed among the groups ($p>0.05$). 50% of smokers presented either symptomatic or asymptomatic AP. Larger apical lesions were found in non-smokers, but differences were not statistically significant ($p<0.05$).

Conclusions: No evident association was found between clinical symptoms, lesion size and smoking status in apical periodontitis.

CONTROL ID: 3266929

TITLE: Microstructural Characterization Of Tooth Surfaces In Recessive Dystrophic Epidermolysis Bullosa

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Characterize the structure and composition of healthy tooth surfaces of patients with recessive Dystrophic Epidermolysis Bullosa (RDEB) using scanning electron microscopy (SEM) coupled with energy dispersive X-ray analysis (EDX).

Methods: Extracted teeth of 3 patients with RDEB were analyzed. The tooth samples were dried by using supercritical CO₂ equipment, gold coated in a Denton Desk V coater, and then examined in a JEOL JSM-IT300LV SEM microscope coupled with EDX detector for compositional analysis.

Results: SEM examination revealed that the teeth of patients with RDEB present an irregular surface, porous and disorganized structure as compared to a healthy enamel surface. EDX compositional analysis indicated that teeth of patients with RDEB contain higher Carbon content and lower Phosphorous and Calcium concentrations than those of a healthy tooth enamel.

Conclusions: Tooth surfaces of patients with RDEB present an altered microstructure with lower mineral content than that of a healthy tooth surface.

CONTROL ID: 3266956

TITLE: In vitro performance of different universal adhesive systems on CAD/CAM restorative materials after thermal aging

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the microshear bond strength (mSBS) of ten universal adhesive systems applied on five different CAD/CAM restorative material, immediately and after 10.000 thermo-cycling.

Methods: Five CAD/CAM materials were selected: 1) indirect resin composite (InRC); 2) feldspathic glass ceramic (FeCe); 3) leucite-reinforced glass ceramic (LeGC); 4) lithium disilicate (LiDi); 5) yttrium-stabilized zirconium dioxide (ZiDi). For each material, 15 blocks were cut into 4 rectangular sections (6 × 6 × 6 mm; n = 60 per group), and processed as recommended by the respective manufacturer. For each indirect material, the following adhesive systems were applied according to the respective manufacturer instructions: 1) AdheSE Universal [ADU]; 2) All-Bond Universal [ABU]; 3) Ambar Universal [AMB]; 4) Clearfil Universal [CFU]; 5) Futurabond U [FBU]; 6) One Coat 7 Universal [OCU]; 7) Peak Universal Bond [PUB]; 8) Prime&Bond Elect [PBE]; 9) Scotchbond Universal Adhesive [SBU]; 10) Xeno Select [XEN, negative control]. After the application of the adhesive system, cylinder-shaped transparent matrices were filled with a dual-curing resin cement (NX3) and light cured. Specimens were stored in water (37 °C for 24 h) and tested in shear mode at 1.0 mm/min (μSBS). All data were submitted to statistical analysis ($\alpha = 0.05$)

Results: The μSBS mean among the different universal adhesives varied widely in each CAD/CAM material used. In addition, all universal adhesives showed a statistically significant reduction in bond strength between the immediate time and after 10,000 thermo-cycling, except AMB, FBU and SBU for the FeCe substrate.

Conclusions: Factors such as pH, solvent type and presence of silane and/or MDP in the composition of each adhesive seem to be important in choosing an universal adhesive system for each particular substrate.

CONTROL ID: 3266989

TITLE: Prevalence Of Open Bite In Barros Luco Trudeau Hospital Complex

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The aim of this study was to assess the number of patients with an open bite in the Barros Luco Trudeau Hospital Complex who started orthodontic treatment between the years 2011 and 2019.

Methods: A sample of 250 children, 126 males and 124 females, who started orthodontic treatment between the years 2011 and 2019 from the Barros Luco Trudeau Hospital Complex in the south area of the city of Santiago, Chile, was analyzed.

Inclusion criteria included males and females, from ages 5 to 15 years old at the time they had their first visit in the orthodontic service of the hospital, with an open bite.

Results: The studied sample consisted of 250 children, where 47 of them showed an open bite malocclusion, which correspond to 18.8% of the total.

Conclusions: The open bite is a condition in which certain opposing teeth fail to establish occlusal contact when the jaws are closed. This condition does not only affect the patients ability to cut the food, but it does also affect the speech and self-esteem. Its therapeutic approach commonly consists of orthodontic treatment involving vertical control and/or anterior dental extrusion with removable or fixed appliances. Its prevalence among a Chilean population of the Barros Luco Hospital between 2011 and 2019 was 18.8%, in a sample of 250 children without gender distinction.

CONTROL ID: 3266993

TITLE: Crevicular Inflammatory Profile of Psoriatic and Healthy subjects with/without Periodontitis

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To compare the levels of IL-17A, IL-22, IL-23, S100A7 and S100A8 in the crevicular gingival fluid (CGF) of psoriatic patients and healthy controls with and without periodontitis and their relations to psoriasis severity

Methods: A cross-sectional study was designed with >18-year-old psoriatic patients recruited by convenience from the Dermatology Department of Hospital San José, Santiago. Matching systemically healthy controls were enlisted from the Dental Clinic of Universidad Andrés Bello, Republica. Patients with either autoimmune/inflammatory comorbidities or those who had received periodontal, ATB, NSAID or corticosteroid treatment in the last 3 months were excluded. Intraoral and periodontal examinations were carried and patients were categorized into 4 groups according to Page & Eke's classification for periodontal disease: (H)Systemically healthy with no/mild periodontitis (N=17), (HP)Systemically healthy with moderate/severe periodontitis (N=22), (P)Psoriatic with no/mild periodontitis (N=13) and (PP)Psoriatic with moderate/severe periodontitis (N=30). 30-second GCF samples were obtained with paper strips from the deepest periodontal pocket in each quadrant. Levels of IL-17, IL-22, IL-23, S100A7 and S100A8 were quantified by ELISA and MULTIPLEX analysis.

Results: A two-fold increase in the GCF levels of S100A8 was measured in psoriatic patients versus controls (2218.85+1187.82 and 2171.17+1141.03 vs. 794.58+461.36 and 1110.44+797.91 in P and PP vs. H and HP respectively, $P<0.05$). S100A8 correlated positively with psoriasis severity in psoriatic patients with no/mild periodontitis ($P<0.05$). No significant intergroup differences in the concentrations of IL-17A, IL22, IL, IL-23 and S100A7 were observed ($P>0.05$).

Conclusions: GCF levels of S100A8 could be a prospective tool for psoriasis diagnosis and as well as a novel biomarker for psoriasis severity in adult patients. These immune molecules did not seem to reflect the link between periodontitis and psoriasis

CONTROL ID: 3267014

TITLE: Effect of acid etching pre-treatment of enamel on the microleakage using a universal adhesive

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate quantitatively the marginal microleakage of Class II restorations carried out with universal adhesives with or without prior phosphoric enamel acid etching, subjected to thermal cycling.

Methods: Eighty-eight Class II cavities were prepared at the proximal surface of human third molars and randomly divided according to the following variables: (i) with or without prior etching of the enamel; (ii) thermal cycling [5,000; 10,000 and 15,000 cycles]; and (iii) staining: methylene blue and silver nitrate. The Class II cavities were restored with a universal adhesive [ScotchBond Universal adhesive] with or without prior etching of the enamel, and resin composite [Bulk Fill Posterior] and light-cured using a LED unit. After restorative procedure and thermocycling, the specimens were immersed in methylene blue or silver nitrate for 24h. After that, the specimens were sectioned with a cutting machine with a diamond blade. The teeth were observed in a 100x magnifying stereoscopic magnifying glass and evaluated in occlusal and cervical area. Data were statistically analyzed by 2-way ANOVA ($\alpha=0.05$).

Results: For methylene blue and silver nitrate, the prior etching of the enamel showed lower values of microleakage when compared with the non-etching group, for all thermal-cycles. In addition, the cervical microleakage showed higher values when compared with occlusal microleakage, for all thermal-cycles. Moreover, 15,000 thermal cycles generate more microleakage when compared with 5,000 thermal cycles, for all groups

Conclusions: The use of acid etching prior to universal adhesives used in self-etch mode improve the performance of Class II resin restorations, reducing the microleakage in occlusal and cervical area.

CONTROL ID: 3267015

TITLE: GES for Oral-Health: Structural Changes and Decisions in Health Reform

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To analyze the evolution of oral health actions guaranteed in the regime of explicit health guarantees (GES) since its implementation

Methods: Review of the decrees of law that govern the regime of explicit guarantees since 2005, and the public minutes of the GES advisory council (available on the website of the Ministry of Health). Eleven decrees were reviewed, and all Council minutes, published from 2005 to 2013 (n = 56)

Results: Since 2005 to date there are 4 GES that are directly related to actions of comprehensive oral care. These were gradually integrated into the decrees of 2005 (Comprehensive Oral Health for 6-year-old children), 2007 (Comprehensive Oral Health for 60-year-old adults and Outpatient Dental Emergency) and in 2010 (Comprehensive Oral Health for the pregnant woman). The specific actions guaranteed have modifications for children of 6 years, reducing the pathologies included and including the risk approach only in 2013. The opportunity guarantee, which indicates the maximum time for compliance with the actions, has undergone modifications for the population of 6 years with a reduction of the term for the beginning of the treatment, and for pregnant women extending the time to conclude it. None of the oral health guarantees are discussed in the GES advisory board and the changes have no justification for public access. It is detected that, during the discussions of the council, decisions are made through unofficial means, without respecting the good practices of transparency of decision making.

Conclusions: No justifications for the modifications of the GES were detected. There are deficiencies in the transparency of the decision process of the GES and specifically for oral health.

CONTROL ID: 3267021

TITLE: Clinical Comparison in Temporary Molars: Filtek Bulk Fill v/s Z350

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Evaluate the 6 months clinical performance of a Bulkfill resin and a conventional temporary molar resin using the modified Ryge-USPHS criteria

Methods: Were selected 36 Odontopediatric patients between 4-9 years 11 months, who had at least 2 caries lesions in temporary molars, classes I or II, with minimum depth of 2.5 mm in the occlusal cervical direction and an extension less than 1/3 of the intercuspid distance. Participants who had pulp treatment, dental mobility, direct/indirect pulp lining, children with difficult management, and some underlying disease were excluded from the study. In each of these two lesions were randomized in: Group (Z350) filtek-Z350 (3M ESPE) and group (FBF) Filtek-Bulk Fill (3M ESPE). The operators made the biological preparations and the restorations following the clinical protocol: conditioned with 37% orthophosphoric acid (CONDAC FGM) in enamel for 15 seconds, washed twice the etching time, dried 15 seconds, then a layer of Single Bond Universal scotch bond (3M ESPE) rubbed for 20 seconds and blown for 5 seconds with soft air, photopolymerized for 30 seconds with LED light lamp (Coltene) of 1000 mW/cm² power. After 15 days (baseline) and 6 months of restoration, they were examined using the RYGE / USPHS criteria in marginal adaptation (AD), anatomical shape (AS), surface roughness (SR), contacts (CT), dental sensitivity (DS), color (CL), marginal staining (MS).

Results: At 6 months were evaluated 18 patients (N total=36). Average age 6.8 years. Score alpha for: AD: 25% Z350, 90% FBF; AS: 58,3% Z350, 83,3% FBF; SR: 61,1% Z350, 66,8% FBF; CT: Alpha 83,3% Z350, 100% FBF; DS: Alpha 88,8% Z350, 100% FBF; CL: Alpha 80,5% Z350, 66,8% FBF; MS: Alpha 58,3% Z350, 100% FBF.

Conclusions: There are no critical differences in the behavior evaluated in a period of 6 months between both RC, according to the modified Ryge-USPHS criteria.

CONTROL ID: 3267027

TITLE: Analysis of the masticatory function in subjects with different BMI.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The objective of this study was to evaluate the masticatory function of the superficial muscles of mastication by using surface electromyography (sEMG), kinematic characteristics and Maximum Functional Bite Force (MFBF) in subjects with different Body Mass Index (BMIs).

Methods: A cross-sectional observational study was carried out. The BMI evaluation was made with a Health O' Meter®. Ten participants aged 24 ± 3.8 years were classified in two groups: Five were Normal (18.5-24.9) and Five were Obese (≥ 30), The Chewing evaluation was performed by using Electromagnetic Articulograph(EMA), all the patients were asked to chew 3.7 g of peanuts (3 repetitions). MFBF was evaluated with GM10 Occlusal Force Sensor and the electromyographic activity of the masticatory muscles was assessed with sEMG.

Results: In the kinematic characteristics of chewing evaluation (Table 1), no significant differences were found between groups. MFBF and electromyographic activity for each group were described in Table 2. Significant differences were found when comparing EMG activity in the right temporalis muscle in both groups ($p= 0.03$). The MFBF mean was correlated with the masticatory frequency, with a weak positive correlation in the normal group (0.100) and a weak negative correlation for the obese group (-0.200). The correlation between MFBF with chewing speed was null in the normal group (0.000). However, a weak positive correlation was found in the obese group (0.300).

Conclusions: Our results are inconclusive regarding the kinematic characteristics of chewing and MFBF in the groups. The normal group presented greater electromyographic activity than the obese group in all the muscles analyzed, this means that a higher value BMI, lower is the electromyographic activity that is registred. In order to continue this study, a higher sample is needed to determine significant differences between groups.

CONTROL ID: 3267055

TITLE: RELATIONSHIP BETWEEN SUPERIOR CENTRAL INCISIVES FORM AND FACIAL INDEX

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To determine the parameters of the upper central incisor (UCI) in relation to the Facial Index in a population of young people and adults of the Faculty of Dentistry of Finis Terrae University.

Methods: Volunteers who comply with the inclusion criteria previously established were recruited. Once the informed consent was signed, a brief survey was completed. Each patient had two direct facial measurements, with a vernier caliper, to obtain the facial index. The same was done in the upper right central incisor, where the maximum width and length of the latter was measured, with a compass.

The data obtained through the descriptive analysis will be poured into a collection form, through the Excel program and they were statistically processed using the SPSS 11.5 statistical system. After this, the relationship between the upper right central incisor and the facial index was estimated using the Chi-square statistic.

Results: The total sample was divided into 3 age groups: Group 1: from 20 to 29 years old, Group 2: from 30 to 49 years old and Group 3: ≥ 50 years old, with an average of 40.5 ± 15.2 years. The total average of the upper central incisors size was 86.6 ± 12.3 which indicates an Ovoid shape and the average of the total facial proportion was 96.5 ± 11.2 which corresponds to Euryprosopic. In the group 1, euryprosopic, mesoprosopic and leptoprosopic had a greater relationship with the ovoid form of the ICS. However, there is no association between dental form and facial form in this group. In the group 2, it is shown that the Ovoid form is the most prevalent as same as Euryprosopic form. A relationship between dental form and facial form is not observed. In the group 3, there could be an association between the facial form and dental form, and in this case the square and ovoid form are the most common, obtaining the same number of people for these two ways.

Conclusions: According to this study we can conclude that there is a relationship between the form of UCI and the Facial Index. This could serve as a parameter to select the UCI. According to these results there is a significant correlation between the form of the teeth and faces shape, but should not be used uniquely to make removable prostheses or complex restorations in the anterior sector, this could give unsatisfactory results.

CONTROL ID: 3267077

TITLE: Association Between Periodontitis And Psoriasis: Preliminary Study.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To compare the presence of periodontitis and oral hygiene habits among individuals with psoriasis and healthy individuals.

Methods:

Case-control preliminary study of patients with psoriasis and without it. Patients older than 18 years with psoriasis vulgaris, and patients without it and systemically healthy were included. The psoriasis area and severity index (PASI), number of teeth, dental hygiene habits were evaluated, and the presence and severity of periodontitis was determined according to diagnosis criteria of poblational studies on periodontitis in relation to probing depths and clinical attachment levels in gums. In the analysis Fisher's exact test, Mann-Whitney U test and logistic regression were used, with a significance level of 0.05.

Results: A total of 47 patients with psoriasis and 46 healthy controls were included. The psoriasis group had an average age of 47.58 ± 13.60 years, 56.25% were men, and the control group $37.93 \pm 12,36$ years, 43.75% were men ($p < 0.001$ and $p = 0.215$, respectively). Patients with psoriasis presented severe, moderate and mild or absence of periodontitis in 47.83%, 26.09% and 10.87%, respectively, while controls 21.28%, 25.53% and 6.38% respectively, presenting differences in severe periodontitis between cases and controls ($p = 0.004$). Patients with psoriasis had an average of 22.15 ± 4.76 teeth and a brushing frequency of 2.20 ± 1.02 times a day, while the control group presented 25.12 ± 3.13 teeth and frequency of brushing 2.70 ± 0.83 per day ($p < 0.01$ respectively). Patients with psoriasis are 8.3 times more likely to have mild periodontitis than controls (Odds ratio 95% CI: 1.36-50.38), and 8.3 times to have severe periodontitis than controls (Odds ratio 95% CI: 1.05-12.58). No association was found between the severity of periodontitis and the severity of psoriasis.

Conclusions: Patients with psoriasis had a higher frequency of mild and severe periodontitis, fewer teeth and less daily brushing habits in comparison to control patients.

CONTROL ID: 3267082

TITLE: Automatic Extraction Of Features From Unstructured Dentistry Referrals.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To extract keywords from unstructured text of a database of referrals from the Clínica Odontológica UNAB (COUNAB), between 2017 and 2019.

Methods: COUNAB referrals were extracted from the U-Smile platform. Each referral contains information regarding administrative data, the specialty to be referred and the observation which is a narrative describing the reason for referral. The observation of each of the referrals was analyzed, which is in the form of unstructured free-text. The TF-IDF (Term Frequency - Inverse Document Frequency) method was used for the weighting of the importance of each word in the referral. This method returns a numerical value describing the level of relevance of each word to differentiate the referral from the rest, utilizing the frequency of the word in the referral and frequency of the word on the entire dataset to perform the relevance weighting.

Results: 924 referrals were obtained. The specialty with more referrals was Endodontics with 245 referrals. The keywords from each one of the referrals were obtained. The words with lower IDF values (providing less information in the referral) were patient, treatment and tooth, and those with higher IDF were nocturnal, neurological and complication.

Example of an automatic keyword (*) extraction using our proposed method: I am requesting evaluation and treatment possibility for partially edentulous* patient. History of hypertension* and diabetes*.

Conclusions: The important words retrieved by the method were the determinants to establish differences between referrals. With this method it is possible to explore unstructured data intuitively to extract important information in a more efficient way. This tool would help students and professionals in the selection of patients based on a given query, lowering the time consumed in searching patients. Using the TF-IDF method, the most important words were extracted within the observation attribute of each of the referrals.

CONTROL ID: 3267096

TITLE: Correlation between Salivary Flow and Xerostomy Severity in Adults

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: Determine the level of correlation between unstimulated salivary flow and severity of xerostomia in adult patients.

Methods: A cross-sectional observational analytical study was performed at the faculty of dentistry of the University of Valparaíso, in which 30 patients who had xerostomia were selected according to the Fox, Bush and Baum survey. Salivary flow was measured with the Oral Schirmer's test and the severity of xerostomia responding to the Thomson's "Xerostomia Inventory" translated and validated into Spanish. These data were subjected to a statistical analysis with Pearson's correlation coefficient through Stata 14™ software.

Results: A weak and inverse relationship of -0.312 between salivary flow and severity of xerostomia was determined using Pearson's correlation coefficient.

Conclusions: The greater the non-stimulated salivary flow, the lower the severity of the xerostomia in adult patients. Considering the results, it is recommended to maintain this research mainly by observing a more representative population which allows to determine more precisely the level of correlation between the non-stimulated salivary flow and the severity of xerostomia.

CONTROL ID: 3267104

TITLE: Masticatory Loads and the Shape of the Mandible Condyle Head

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: To evaluate the shape of the left condyle head (CH) of groups that differ in the magnitude and direction of masticatory loads: Intense, Medium, Low, Altered-skeletal class II (CII) and Altered-skeletal class III (CIII) in order to discuss their possible links to TMJ disorders.

Methods: CT-based 3D reconstructions of the CHs of 56 individuals were used. 116 landmarks and semilandmarks were placed on the surface of each CH. Geometric morphometric tools were used to descriptively analyze and visualize shape variation among groups.

Results: Principal components analysis showed that the low masticatory load group shows the most within-group shape variation. The Intense and Medium groups show more constrained variation. CII tends to show more particular features: their CH is vertically and mediolaterally more extended, with the highest point closer to the medial pole, and a different orientation of the main axis. CIII on the other hand, does not remarkable differences.

Conclusions: Modern humans show a wide variation of the CH shape; this could be explained by the low stimulation of the condyle head due to low masticatory loads; within modern humans, CII individuals show a more particular morphology. This morphology needs to be further studied to assess for detailed functional/pathological consequences that may explain the relatively higher prevalence of CII individuals to suffer from TMJ disorders.

CONTROL ID: 3267133

TITLE: EFFECTS OF NON-INVASIVE THERAPIES IN TMJ WITH DEGENERATIVE DISEASES.

ABSTRACT STATUS: Decisioned Accepted

ABSTRACT BODY:

Objectives: The objective of the study was to evaluate the clinical performance of non-invasive therapies applied to patients with degenerative bone disorders of the TMJ.

Methods: Method: 25 patients ($X=32.2$ years, Women 72%) with degenerative bone disorders of the TMJ, diagnosed by an expert clinician ($K=0.81$) according to RDC-TMD criteria and backed by computed tomography (CT) and magnetic resonance imaging (MRI) ($n=50$ ATM) according to Ahmad criteria (calibrated operator $K=0.92$). The clinical and imaging evaluation was carried out in two stages; A: Before treatment and B: One year after treatment. The therapeutic objectives were pain control, return of normal functional ranges, limitation of the degenerative process and control the progression of disc displacement. The therapeutic scheme applied consisted of: education and change of habits, orthopedics of distraction and stabilization, physical therapy, pharmacotherapy and nutritional supplements. The normality and homogeneity of the data (Levene/Kolomogovov Smirnov) was determined, statistical analysis of Pain (Pa), Condylar Erosion (CE), Effusion (E), Pseudocyst(PC), Closed Mouth Disc Displacement (CMDD), Open Mouth Disc Displacement (OMDD), was performed with the McNemar's test and Pearson's correlation $CI=0.95\%$ (SPSSv15.0).

Results: Results: From stages A and B: expressed in average value, correlation and P, separated by parameter: Pa: A:VAS=4.18 ($n=48$); B:VAS=0.17 ($n=2$), ($r=0.149$, $p=0.0001$). CE: A: $n=29$, B: $n=17$ ($r=0.012$, $p=0.012$). E: A: $n=32$; B: $n=2$ ($r=0.131$, $p=0.109$). PC: A: $n=7$, B: $n=5$ ($r=0.01$, $p=0.688$). CMDD A: $n=48$; B: $n=35$ ($r=0.447$, $p=0.691$). OMDD: A $n=26$; B $n=48$ ($r=0.194$, $p=0.001$). All data were non parametric. Mean age $X=32.2$ years (± 11.58), Female Sex 72% ($n=18$).

Conclusions: Conclusions: The non-invasive therapy of patients with degenerative bone alterations of the TMJ showed a significant reduction in painful symptoms, and partial modification of imaging signs at one year of control.