Abstracts

College of Dentistry Research Day

Posters 148 -179

Abstracts

Poster Number 148

Title: Low Dose Naltrexone for Treatment of Burning Mouth Syndrome: A Case Report

Authors: L. Sangalli, Department of Oral Health Practice, College of Dentistry, Division of Orofacial Pain, U of Kentucky, C.S. Miller, Department of Oral Health Practice, College of Dentistry, Division of Orofacial Pain, U of Kentucky

Abstract: Aim of the Investigation: The International Classification of Disease (ICD-10-CM) defines Burning Mouth Syndrome (BMS) as a chronic intraoral burning sensation, with no identifiable local or systemic cause. As current treatment options are often times unsatisfactory, the aim of this report is to describe the management of a patient suffering from BMS with low dose of naltrexone (LDN). **Methods:** A 62-year-old female presented at the Orofacial Pain Clinic (University of Kentucky) with a complaint of intraoral burning on the tongue of three years duration, started after a dental extraction. Existing comorbidities were fibromyalgia, irritable bowel syndrome, headache and interstitial cystitis. Reported pain intensity ranged from 2/10 (morning) to 8/10 (evening) on a Numeric Rating Scale. **Results**: A diagnosis of BMS (Diagnosis Code-14.6) was made. In light of her current clonazepam use and concurrent fibromyalgia, a trial of LDN was suggested to target endogenous opioid release. After 1 month of 3mg LDN, the patient reported a decrease in pain intensity by 50%, denying any pain upon awakening. After 2 months, the widespread pain associated with her chronic morbidities also reduced by 50%, and her headache was no longer present. At 3 months, the dosage was adjusted to 4.5mg, as some reduction in pain relief was noticed. At 5 months, the patient indicated significant improvement in widespread pain by 50% and rated BMS pain as 2/10, with no side effects. **Conclusions:** These preliminary results suggest that LDN may be a feasible and effective treatment for BMS patients, especially in those refractory to traditional pharmacologic treatment.

Funding: No Funding

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Abstracts

Poster Number 149

Title: Self-reported Improvement in Obstructive Sleep Apnea Symptoms Compared to Post Treatment AHI with Mandibular Advancement Device Therapy: A Retrospective Study

Authors: L. Sangalli, Department of Oral Health Science, Division of Orofacial Pain, U of Kentucky F. Yanez Regonesi, Department of Oral Health Science, Division of Orofacial Pain, U of Kentucky D. Fernandez Vial, Department of Oral Health Science, Division of Orofacial Pain, U of Kentucky I. Moreno Hay, Department of Oral Health Science, Division of Orofacial Pain, U of Kentucky

Abstract: Introduction: Mandibular advancement device (MAD) is recognized as treatment option for management of obstructive sleep apnea (OSA) in mild-moderate cases or in patients unable to tolerate PAP therapy. Post-treatment sleep study is recommended to establish MAD efficacy when maximal therapeutic benefit has been achieved based on OSA-symptoms improvement or maximum anatomical protrusion. Aim of the study was to investigate the difference between *responders* and *non-responders* in self-reported OSA-symptoms improvement. **Methods:** Medical chart of patients referred to Orofacial Pain Clinic (University of Kentucky) between 2016-2021 for management of OSA with MAD were retrospectively evaluated. Participants with post-treatment sleep study with MAD *in situ* and with a previous follow-up investigating OSA-symptoms were included. Participants were categorized as *responders* if MAD treatment resulted in 50% improvement in AHI. OSA-symptoms were snoring (0-100 Numerical Rating Scale-NRS,0=not snoring), witnessed apneas (0-100 NRS,0=never), sleep quality (0-100 NRS,0=very restful), tiredness upon awakening (0-100 NRS,0=completely rested), daytime sleepiness (0-24 Epworth Sleepiness Scale,0=not sleepy). *t*-test was used to compare differences in pre-, post-treatment variables within/between groups. **Results:** Out of 79 patients, 73 participants (36 females, aged 64.32±10.77, $AHI_{pre\text{-}treatment}$ 20.99±15.84) were included. 50.68% were classified as *responders,* 49.32% as *non-responders.* Pre-treatment AHI was weak predictor of treatment response (β=.240, *p*=.072). Compared to *non-responders, responders* reported significant sleep quality improvement (21.51±24.07 vs. 34.81±29.66, *p*=.039) and scored weakly better in tiredness upon awakening at follow-up before post-treatment sleep study (22.76±21.16 vs. 32.53±26.02, *p*=.082). Remaining OSA-symptoms did not differ (*p*'s>0.05). **Conclusions:** These preliminary results suggest that only sleep quality was significantly different between *responders* and *non-responders*.

Funding: No Funding

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Abstracts

Poster Number 150

Title: A Retrospective Study of Traumatic Life Experiences and Chronic Orofacial Pain. Part 1: Presenting Demographic and Clinical Characteristics, and Insomnia Symptomatology

Authors: A. Martinez-Porras, Division of Orofacial Pain, College of Dentistry, U of Kentucky. D. Fernandez-Vial, Division of Orofacial Pain, College of Dentistry, U of Kentucky. L. Sangalli, Division of Orofacial Pain, College of Dentistry, U of Kentucky. R. de Leeuw, Division of Orofacial Pain, College of Dentistry, U of Kentucky. I. Boggero, Division of Orofacial Pain, College of Dentistry, U of Kentucky. Department of Psychology, U of Kentucky.

Abstract: Aim of Investigation: Patients with chronic pain frequently have a history of traumatic life events. The study aimed to describe demographic and clinical characteristics of chronic orofacial pain patients who reported a traumatic life event, and compare those who did and did not report significant posttraumatic stress (PTSD) symptomatology due to those events. **Methods:** A chart review identified patients (dates: 10/2020-12/2022; ≥18-≤80 y/o, ≥3 months of pain) that reported history of a traumatic life event. Those patients were then dichotomized into groups of significant PTSD symptomatology (PTSD-S+) or not (PTSD-S-) using a validated cut-off score of ≥41 points on the PCL-5 questionnaire (0-80). Insomnia Severity Index (ISI), demographic characteristics (age/sex/employment status/support system), habits (smoking/parafunctional habits), headaches (present history/average intensity (NRS, 0-10)), and orofacial pain diagnosis were extracted. **Results:** Of 661 charts reviewed, 90 reported a traumatic event (13.62%, *M*age: 44.52; 81.11% females). Significant correlation was observed between the PCL-5 and ISI scores ($r(88)=0.50$, $p<.001$). The PTSD-S+ group (n=71) reported greater insomnia symptomatology (17.79 vs 11.58, $t(88) =-3.93$, $p=.001$]) and higher headache intensity (6.97+/-2.34 vs 6.17+/-2.18, $p=.045$) than the PTSD-S- group (n=19). The rest of the variables were similar between both groups (p´s>.05). **Conclusions:** Results suggest 13.62% of treatment-seeking chronic orofacial pain patients may have a history of a traumatic life event. Within that group, those with significant PTSD symptomatology may have greater insomnia and headache pain intensity. Multidisciplinary care combining PTSD treatment with standard dental care may lead to the best outcomes for those patients.

Funding: No Funding

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Abstracts

Poster Number 151

Title: A Retrospective Study of Significant Stressful Life Experiences and Chronic Orofacial Pain. Part 2: Psychological Distress and Pain-Related Disability.

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Abstract: Aim of Investigation: Patients with chronic orofacial pain patients have a higher prevalence of having experienced traumatic life events than the general population. The aim of the study was to compare differences in psychological distress and pain-related disability among chronic pain patients with a traumatic life event with and without significant posttraumatic stress disorder (PTSD) symptomatology. **Methods:** A chart review was conducted (10/2020-12/2022) to identify patients (≥18-≤80 y/o, ≥3 months of pain) with a history of a traumatic life event, and then classify those patients as having significant (PTSD-S+) or not (PTSD-S-) using their score on the PCL-5 questionnaire (0-80; PTSD-S(+) = ≥41 points). Patient Health Questionnaire-4 (PHQ-4), Chronic Pain Grade Scale 2.0 (GCPS 2.0), and demographic data (age, sex, and employment status) were also extracted. **Results:** Of 661 patients charts reviewed, 90 reported a traumatic life event (13.62%, age_{mean}: 44.52; 81.11% females; $PCL\text{-}5_{mean}$: 25.19). PCL-5 scores were positively correlated with PHQ-4 score ($r(88)=0.67, p<.001$). The PTSD-S(+) (n=71) group had greater psychological distress (PHQ-4: 9.11 vs 4.40, $t(88)=6.024, p<.0001$), pain-related severe disability (GCPS 2.0 Grade-IV 63.16% vs. 25.35%; $\chi^2(1)=9.530, p=.002$), and percentage of patients receiving/applying for disability (31.58% vs. 10.14%, $\chi^2(1)= 5.375, p=.020$) than the PTSD-S- group (n=19). **Conclusions:** These data suggest that patients who developed significant PTSD symptomatology after exposure to a traumatic life event experience higher levels of psychological distress and pain-related disability than those who did not. Assessing for PTSD symptomatology and referring patients to treatment when indicated may be important for improving quality of life.

Funding: No Funding

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Abstracts

Poster Number 152

Title: Alternative Treatment Of TMJ Pain During Clear Aligner Therapy (CAT)

Authors: A. M. Shafi, BDS, Department of Orthodontics, University of Kentucky S. Al Musawi, BDS, Department of Orthodontics, University of Kentucky L. Sharab, DDS, MS, MSc, Department of Orthodontics, University of Kentucky

Abstract: Objective: The use of CAT in orthodontics is rapidly increasing due to its esthetics and comfort. CAT may cause masticatory muscle tenderness and TMJ pain which can also be influenced by depression and anxiety. This case report describes an alternative treatment adjustment of a patient with TMJ pain post aligner placement**. Case report:** 56-year-old female presented for assessment of crowding in arches. Medical history was noncontributory. Radiographic evaluation revealed skeletal retrusion with class II open bite tendency. Clinical evaluation indicated thin biotype, retrusive lips and reduced facial convexity. Dentally, patient had missing UR2, LR3, LL7 and all 8s, end on occlusion, excess OJ, mild anterior crowding, midlines discrepancy, generalized wear, fair oral hygiene, history of grinding and use of mouth guard at night. Panoramic X-rays showed flatter right condyle with no TMJ symptoms. Per patient, CAT was started with the recommended protocol (wear each tray for 2 weeks). 6 months into treatment, patient started developing pain at masseter, temporalis, sinus and ear. She also reported parafunctional movement and increased clinching. Patient was referred to orofacial pain management. After controlling pain, attachments were removed and new trays were ordered. New plan involved reduced the duration of aligner wear to 12 hours at night for 4 weeks. On follow-up, patient had improvement in pain and treatment still in progress without symptoms. **Conclusions:** Adjustment in timing and duration of aligners wear as described may offer an option for the patient that helped with pain while allowed for progress in dental movement.

Funding: No Funding

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Abstracts

Poster Number 153

Title: A Look at the Factors Causing Orthodontically Induced External Apical Root Resorption (EARR)

Authors: M. Adel, Orthodontics, University of Kentucky College of Dentistry E. Byrd, Orthodontics, University of Kentucky College of Dentistry M. Tallman, Orthodontics, University of Kentucky College of Dentistry

Abstract: External apical root resorption (EARR) is an irreversible loss of the apical portion of the tooth's root. Orthodontic treatment is known to increase the risk of EARR. This sequela is usually inevitable for the majority of orthodontic patients and can range from a histological finding to clinically severe loss of root structure, which can decrease the longevity of the tooth. Unfortunately, EARR can be unpredictable and much research has been conducted to look into the associated factors that may increase an individual's risk. Both patient-related and orthodontic treatment-related risk factors have been suggested to influence EARR. Patient related factors include genetic predisposition, systemic factors, medications, age, gender, ethnicity, tooth type, history of trauma, and root morphology. Treatment-related risk factors include treatment duration, appliance type, magnitude of force applied, extraction vs nonextraction treatment, and type of tooth movement. Patients should be made aware of the risks of EARR before undergoing orthodontic treatment, and orthodontists must be vigilant in detecting it and knowing how to manage it properly in their patients. This poster will review the factors associated with EARR and updated guidelines for orthodontists in managing this condition.

Funding: No Funding

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Abstracts

Poster Number 154

Title: Determination of Impacted Permanent Maxillary Canine Position Using a Single Panoramic Radiograph

Authors: Christopher M. Fanelli, DDS, MSc, Department of Orthodontics, U of Kentucky James K. Hartsfield Jr., DMD, PhD, MS, MMSC, FACMG, CDABO, Department of Orthodontics, U of Kentucky, Galal Omami, BDS, MSc, MDentSc, FRCD (C), Department of Orthodontics, U of Kentucky, Cynthia S. Beeman, DDS, PhD, Department of Radiology, U of Kentucky, Lina Sharab DDS, MS, MSc, Department of Orthodontics, U of Kentucky

Abstract: Objective: The purpose of this research was to test the reliability of a modified magnification method to diagnose the position of an impacted canine from a single panoramic radiograph. **Materials and Methods:** This retrospective study was approved by a university Institutional Review Board and evaluated 114 panoramic radiographs with 139 impacted maxillary canines. The widths of the impacted canine, the ipsilateral canine and contralateral erupted canine were compared and ratios for the canine-incisor index (CII) and canine-canine index (CCI) were calculated. The impacted canine was then classified relative to the contralateral central incisor in the vertical plane into apical, middle or coronal zones. Linear data was analyzed for normal distribution. Logistic and multivariate logistic regression models were conducted. **Results:** The CII and the vertical zone were acceptable predictors of impacted canine position based upon a ROC AUC c-statistic=0.75; specificity=0.74, sensitivity=0.69). In the middle and coronal zones, a predictive range was evident for the CII of the palatal (1.1-1.4) and buccal (0.9-1.2) impacted canines, respectively. Intra-rater reliability was excellent for maxillary canine, central incisor and contralateral canine measurements. **Conclusion:** The canine-incisor index and vertical zones from a single radiograph can be used to determine the bucco-palatal position of an impacted canine, with more reliability if the impacted canine crown is in the middle and coronal zones of the contralateral central incisor.

Funding: No Funding

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Abstracts

Poster Number 155

Title: Osteomyelitis Misdiagnosed as Temporomandibular Disorder: A Case Report

Authors: A. Martinez-Porras, Division of Orofacial Pain, College of Dentistry, U of Kentucky P. Mishra, Division of Orofacial Pain, College of Dentistry, U of Kentucky

Abstract: Aim of investigation: Osteomyelitis is an inflammatory condition of the bone and bone marrow. In this case report we describe a case of osteomyelitis that was misdiagnosed as temporomandibular disorder (TMD). A 40-year-old healthy female presented to our clinic with a chief complaint of constant throbbing, shooting, and burning pain (7/10) in left midface area that started shortly after extraction of #17. It was aggravated by jaw function, exercising and lying down. Patient was initially diagnosed with TMD by her dentist and received several treatments that included oral corticosteroids, muscle-relaxants, antibiotics, analgesics, amitriptyline and stabilization-appliance for 3 months with minimal relief in pain. **Methods:** A comprehensive examination revealed pain and swelling in left inferior masseter and submandibular area. Panoramic x-ray revealed inflammatory changes in extraction site of #17 and CT-scan confirmed cortical erosion with destructive process involving left angle of the mandible extending into ramus. Blood tests revealed elevated neutrophils and WBC count. All findings were compatible with osteomyelitis. Patient was immediately referred to oral surgery for evaluation and treatment. **Results:** Patient was placed on high dose antibiotics followed by debridement and sequestrectomy which relieved her pain. **Conclusions:** If osteomyelitis is diagnosed early on, there are treatments available, including medication and surgery. However, when misdiagnosed, the patient can suffer catastrophic injuries. Thorough clinical and radiological evaluation and timely referral is essential for appropriate patient care.

Funding: No Funding

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Abstracts

Poster Number 156

Title: Retrospective Analysis of the Association of Presurgical Skeletal and Dental Cephalometric Variables and Their Changes During and After Surgery

Authors: K. Sutherland, Department of Orthodontics, U of Kentucky, C. Beeman, Department of Orthodontics, U of Kentucky, J. K. Hartsfield, Jr., Department of Orthodontics, U of Kentucky Joseph Van Sickels, Department of Oral and Maxillofacial Surgery, U of Kentucky

Abstract: Objective: To determine whether there is a relationship between the degrees of change in the SNA, SNB, U1-PP, IMPA and SN-MP during surgery and their impact on stability, both dental and skeletal, over at least six months. To assess the degree of impact the changes on surgical-orthodontic treatment of skeletal Class-II and Class-III patients. **Methods:** Under the oversight of University of Kentucky IRB, this retrospective analysis compared Class-II and Class-III surgical-orthodontic patients having either one- or two-jaw orthognathic surgeries. An EHR search using CPT and ICD codes, yielded 1,033 surgical-orthodontic patients (415-Class-II, 618-Class-III) treated with orthognathic surgery between January 1, 2008 and December 31, 2019. This search rendered 137 patients (74-Class-II, 63-Class-III) qualifying for the study. Each patient had 3 lateral cephalograms: pre-surgical (T1), immediate post-surgical (T2), and final (T3), which was at least 6-months post-surgery with fixed appliances removed. Radiographs were traced and analyzed using the following measurements: SNA, SNB, U1-PP, IMPA, and SN-MP (Dolphin Imaging Software). A linear regression was performed for each of the four groups: Class II with a one jaw or two-jaw surgery, or Class III with a one or two-jaw surgery. The Benjamini-Hochberg procedure was used to control for inflation of Type I error due to multiple testing using a False Discovery Rate of .05. **Results:** The differences in the following movements from T1-T2 and T2-T3 which are statistically significant are: Class II 1-jaw BSSO SNA (p=0.00095), Class II 1-jaw SNB (p=0.0027), Class II 1-jaw SN-MP (p=0.0027), Class II 2-jaw U1-PP (p=0.03), Class II 2-jaw SN-MP (p=0.016), Class III 1-jaw SN-MP (p=0.01), Class III 2-jaw SNB (p=0.032), Class III 2-jaw U1-PP (p=0.032), and Class III 2-jaw SN-MP (p=0.024). **Conclusion:** The greater the surgical move the greater the post-operative relapse.

Funding: No Funding

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Abstracts

Poster Number 157

Title: The Correlation between Screen Time and Caries Experience in Children 12 years old and younger

Authors: K. Korb, Department of Pediatric Dentistry, U of Kentucky, K. Dingrando, Department of Pediatric Dentistry, U of Kentucky

Abstract: Purpose: Dental caries is the most common chronic disease of children in the United States and is associated with many detrimental conditions including pain, infection, loss in school days, increased caries incidence in permanent dentition and reduced quality of life. Therefore, continuous search for factors that influence its prevalence are needed. Screen time refers to time spent using a device such as a computer, television, video game console, or smart phones/tablets. It has been demonstrated that screen time affects diet quality, and can displace oral health habits leading to increased risk of dental caries. The purpose of this study is to examine the association between the amount of screen and dental caries prevalence children 1-12 years of age. **Methods:** A survey completed by parents regarding their child's screen time usage will be utilized. The caries prevalence (dmft or DMFT) in relation to the amount of screen time will be analyzed. For demographic variables and survey responses, descriptive statistics will be calculated and reported. Poisson regression will be used to model the relationship between cavities and screen time, while adjusting for survey responses and other covariates of interest. All analyses will be completed in SAS 9.4 and R 4.0.3. A p-value of less than 0.05 will be used to determine statistical significance. **Results:** Results pending. **Conclusions:** Pending. We believe that the more time spent on screens will have a positive correlation to caries experience as depicted by higher dmft, with children with less screen time having less dental caries experience.

Funding: No Funding

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Abstracts

Poster Number 158

Title: Social Vulnerability in Oral Health Care Utilization

Authors: A. McCowan, College of Dentistry, U of Kentucky, M. Kirakodu, College of Dentistry, Center for Oral Health Research, U of Kentucky, C. Brown, College of Dentistry, R. C. Oliviera, Center for Oral Health Research, U of Kentucky, L. M. Shaddox, Center for Oral Health Research, U of Kentucky

Abstract: Objectives: Kentucky is one of the lowest-ranking states in oral health status. Social Vulnerability Index (SVI) allows visualization of community-level vulnerabilities to better help and relieve those who may be impacted by disasters. By utilizing Census and Community Survey data using 15 different social factors, it can be used to determine communities that may be more vulnerable to poor health outcomes. Thus, the purpose of this study was to evaluate the association of this index with the utilization of oral health care in Kentucky. **Methods:** Records from 50,577 patients, 5-90 years, who visited University of Kentucky clinics in the past six years were evaluated. Dental visits were combined into preventive/diagnostic and urgent care visits, and these were correlated with SVI and within different SVI themes (socio-economic status, household composition, minority status and language, and housing and transportation). **Results**: Higher dental care utilization was overall associated with lower SVI values (lower SVI = lower vulnerability, $r=-0.121$, $p<0.0001$). Higher number of diagnostic/preventive visits were associated with lower SVI ($r=-0.139$, $p<0.0001$), whereas higher urgent care visits were associated with higher SVI values ($r=0.050$, $p<0.0001$). Within themes, socio-economic status showed the strongest associations with both diagnostic/preventive and urgent care visits ($r=-0.186$ and $r=0.086$, respectively, $p<0.0001$). **Conclusion:** SVI is associated with oral health care utilization and is a powerful tool to evaluate social determinants of health impact on oral health care. Further evaluation within different SVI themes are warranted to identify important factors associated with health inequities and drive important system changes to reduce them.

Funding: No Funding

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Abstracts

Poster Number 159

Title: COVID-19 Pandemic and Its Effects on Kentucky Medicaid Pediatric Access to Dental Care

Authors: I. Huynh, Department of Pediatric Dentistry, U of Kentucky, K. Dingrando, Department of Pediatric Dentistry, U of Kentucky

Abstract: **Purpose:** Following the World Health Organization's declaration of the COVID-19 outbreak as a pandemic, the ADA recommended dental practitioners postpone all treatment not deemed urgent or emergent on March 16th, 2020. Among these were routine exams, restorative treatment of asymptomatic carious lesions, and a majority of orthodontic procedures. While these procedures were determined to be non-essential in the context of the COVID-19 pandemic, they serve vital roles in the primary, secondary, and tertiary prevention of dental disease. The purpose of this study was to determine the effects of the COVID-19 pandemic on the Kentucky Medicaid pediatric population's ability to access dental care and the types of care rendered. **Methods:** The Kentucky Medicaid database was accessed to obtain information regarding the claims count and claims dates for predetermined procedures of interest corresponding to typical preventative, restorative, endodontic, emergency/palliative, and interceptive orthodontic treatment performed for pediatric dental patients between the dates of March 1st, 2019 and February 28th, 2021. Forty-one different codes were used, grouped into treatment categories, and compared between years. If the claims counts were outside the 95% confidence interval when comparing years, then that difference was considered statistically significant ($P<.05$). **Results:** Results Pending **Conclusions:** Conclusions Pending. It is predicted that the pandemic will represent a large barrier in access to care and lead to a decline in overall utilization of dental services. A proportional decrease in preventative and orthodontic services is anticipated while the proportion of restorative, endodontic, and emergency treatment is expected to increase following the pandemic.

Funding: CCTS NIH UL1TR001998

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Abstracts

Poster Number 160

Title: Prevalence of Decay and Restorations Next to Restored Implants, A Retrospective Radiographic Study

Authors: R. White, College of Dentistry, U of Kentucky, P. Bell, College of Dentistry, U of Kentucky, A. Kutkut, DDS, MS, FICOI, DICOI, College of Dentistry, U of Kentucky

Abstract: Tooth conditions adjacent to fixed implant prostheses has been reported as open contact and root canal therapy after tooth vitality loss. Several researchers have investigated the prevalence of open contact between implant prostheses and adjacent teeth. A recent study reported that the proximal contact tightness between fixed implant prostheses and adjacent teeth significantly decreased at mesial and distal sites over time, particularly in the mesial. In the same study the authors showed that major changes occurred in the first 3-month period after crown delivery. Furthermore, open contact may create food impaction that may lead to periodontal defects, recurrent tooth decay, and peri-implant complications. Peri-implant structures are more susceptible to pathosis in comparison to natural teeth. Various physiological factors might contribute to formation of open contacts between teeth and dental implants. Craniofacial growth changes and modifications that occur during adulthood should be emphasized. This is important when treatment planning for implant restorations. This study aims to retrospectively evaluate the conditions of teeth adjacent to restored implant on radiographs to report the prevalence of decay, root canal treatment, direct restorations, indirect restorations, and extractions of adjacent teeth after implant fixed restorations established. An additional aim is to find possible contributing factors of these complications between implant restorations and the adjacent teeth to provide recommendations for possible prevention and treatment of this complication.

Funding: No Funding

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Abstracts

Poster Number 161

Title: Understanding COVID-19 Problems Faced by Kentucky's Safety-Net Dental Practices to Develop Guidance for Action

Authors: K.A. Pearce, Department of Family and Community Medicine, U of Kentucky, D.N. Stone, Department of Oral Health Science, U of Kentucky C.M. Williams, Department of Health Behavior, U of Kentucky R.C. Ingram, Department of Health Management and Policy, U of Kentucky, L.M. Shaddox, Department of Periodontics, U of Kentucky C.K. Brown, College of Dentistry, U of Kentucky

Abstract: Background and Rationale: Dentistry has experienced especially difficult challenges during the COVID-19 pandemic, due to close patient contact and aerosol-generating procedures with high risk for viral infection and/or transmission. Over the 1st year of the pandemic, very little was known about the scope and depth of problems faced by dental practices, or how they were getting essential information to carry on their work. Our colleagues in Kentucky's safety-net dental practices reported a frustrating lack of guidance. **Goal**: Collaboratively create and assess a web-based resource designed to help dental practices navigate this (and the next) viral pandemic as safely as possible. **Study Objectives:** We first sought to understand: a) the high-priority COVID-19 information needs of these dental providers, b) barriers they faced in obtaining information, and c) their usual sources of information. **Methods:** Using findings from 3 focus groups totaling 25 dentists and hygienists in 11 safety-net practices, we developed a broader survey of their colleagues, designed to meet our stated objectives. This web-based survey was conducted in the summer of 2021. **Results:** Of 59 possible respondents at 16 practices, 17 dentists and 12 dental hygienists completed the survey, expressing low, medium and high priorities for information across 12 domains: general practice management, communications, PPE, aerosol safety, policies to minimize staff risks, screening providers and staff, screening patients and visitors, isolation and quarantine policies, workforce management, stress management, vaccine facts, and vaccine access. They also specified used and trusted sources of information about COVID-19. Details and next steps will be reported.

Funding: College of Dentistry and the Kentucky Oral Health Innovation Initiative

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Abstracts

Poster Number 162

Title: The Impact of Beverage Choice on Early Childhood Caries in Kentucky

Authors: H. Hazle, Department of Pediatric Dentistry, U of Kentucky, K. Dingrando, Department of Pediatric Dentistry, U of Kentucky, C. Perez, Department of Pediatric Dentistry, U of Kentucky

Abstract: Purpose: The high prevalence of Early Childhood Caries (ECC) in Kentucky's children does not appear to be decreasing. ECC is multifactorial, largely dependent on parental behaviors and influences leading to consumption of high sugar containing foods and non-fluoridated beverages. Overall, studies show there has been a decline in consumption of milk, fruit and vegetables, with an increase in consumption of sugar-sweetened beverages. The purpose of this study is to examine the association between beverage choice and early childhood dental caries among a representative sample of children two to five years of age seen for routine dental exams. **Methods:** Participant parents complete an anonymized, voluntary survey via REDCap consisting of questions regarding their child's consumption of various amounts/types of sugar sweetened and non-sugar sweetened beverages. The caries prevalence of each patient (dmft)will be analyzed in relation to the type and amount of sugar-sweetened beverage the child consumes. Descriptive statistics for all variables were calculated, and differences in prevalence across ethnicities were analyzed using Fisher's Exact tests. To model the relationship between the total number of teeth affected by caries and the various drink types, we fit quasi-Poisson regression models to allow for potential overdispersion. Ethnicity was also included as a covariate in each case. All analysis will be performed using SAS 9.4, with a significance level of 0.05. **Results:** Results are pending at this time. **Conclusions:** Conclusions pending, we believe that higher intake of non-fluoridated beverage choices in children ages two to five will have a positive correlation to caries experience as depicted by higher dmft. Children consuming more fluoridated water are expected to have lower dental caries experience.

Funding: No Funding

Presenter: **Hazle, H. L.**hhazle09@gmail.com

Abstracts

Poster Number 163

Title: Hypnosis for the Treatment of Unresponsive Post-Traumatic Trigeminal Neuropathic Pain: A Case Report.

Authors: F. Yanez-Regonesi, Department of Oral Health Science, Orofacial Pain Program, U of Kentucky, S. Judge, College of Arts and Science, Psychology, U of Kentucky, I. Boggero, Department of Oral Health Science, Orofacial Pain Program, U of Kentucky

Abstract: Aim of Investigation: Limited evidence is available regarding the effectiveness of hypnosis in the treatment of orofacial neuropathic pain. This report describes the case of a 47-year old female with a 3-year history of tooth pain in the area of teeth #23-26 which began following dental treatment, managed with hypnosis. **Methods**: Patient reported a constant aching, throbbing pain, that begins shortly after awakening (intensity=5/10) and aggravates throughout the day to 10/10. Stress was reported as an aggravating factor; sleep, gum-chewing, and flossing were reported as relieving factors. Comprehensive intraoral, cranial nerve, and physical examination of the masticatory and cervical muscles revealed hyperesthesia in the gingival tissues surrounding the site of her chief complaint. Other examination results were unremarkable. **Results**: Diagnosis of painful post-traumatic trigeminal neuropathic pain (PTNP) was given. Patient had failed previous trial of metaxalone, carbamazepine, and oxcarbazepine. We provided trials of amitriptyline, gabapentin, duloxetine, pregabalin, lamotrigine as well as topical medication and combination therapy, all without success. However, a single 50-minute session of hypnosis, a technique performed by the behavioral medicine team to enhance concentration, promote relaxation, and heighten responsiveness to suggestions, provided 70% pain relief until the evening, that was maintained at one-month follow-up. **Conclusions:** Limited knowledge is available regarding behavioral therapy for managing chronic neuropathic pain. The current case failed pharmacological treatments but was able to achieve longer pain-free hours after one hypnosis session. This case highlights the importance of multidisciplinary approach in chronic orofacial pain.

Funding: No Funding

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Abstracts

Poster Number 164

Title: Prevalence of Tooth Conditions Next to Restored Implants, A Retrospective Radiographic Study

Authors: M. Awad, College of Dentistry, U of Kentucky, C. Tria, College of Dentistry, U of Kentucky

Abstract: Tooth conditions adjacent to fixed implant prostheses has been reported as open contact and root canal therapy after tooth vitality loss. Several researchers have investigated the prevalence of open contact between implant prostheses and adjacent teeth. A recent study reported that the proximal contact tightness between fixed implant prostheses and adjacent teeth significantly decreased at mesial and distal sites over time, particularly in the mesial. In the same study the authors showed that major changes occurred in the first 3-month period after crown delivery. Furthermore, open contact may create food impaction that may lead to periodontal defects, recurrent tooth decay, and peri-implant complications. Peri-implant structures are more susceptible to pathosis in comparison to natural teeth. Various physiological factors might contribute to formation of open contacts between teeth and dental implants. Craniofacial growth changes and modifications that occur during adulthood should be emphasized. This is important when treatment planning for implant restorations. This study aims to retrospectively evaluate the conditions of teeth adjacent to restored implant on radiographs to report the prevalence of decay, root canal treatment, direct restorations, indirect restorations, and extractions of adjacent teeth after implant fixed restorations established. An additional aim is to find possible contributing factors of these complications between implant restorations and the adjacent teeth to provide recommendations for possible prevention and treatment of this complication.

Funding: No Funding

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Abstracts

Poster Number 165

Title: Evolution of Compliance and Self-reported Symptoms Over 36 Months in Mandibular Advancement Device Therapy for Obstructive Sleep Apnea: A Retrospective Study

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Abstract: Introduction: Mandibular advancement devices (MAD) are feasible options for management of mild-moderate obstructive sleep apnea (OSA), and in severe cases when appropriate. Compliance and reappearance of OSA-related symptoms can change over time. The study aimed at investigating difference in compliance and change of self-reported OSA-symptoms over time in *responders* and *non-responders* treated with MAD. **Methods:** Retrospective chart-review of patients referred to Orofacial Pain Clinic between 2016-2021 for management of OSA with MAD was performed. Participants with post-treatment sleep study with MAD and follow-ups investigating compliance and OSA-related symptoms were included, and divided into *responders* (50% reduction of baseline-AHI) and *non-responders*. OSA-symptoms included snoring(0-100 Numerical Rating Scales,0=no snoring), apneic episodes(0-100 NRS,0=never), tiredness upon awakening(0-100 NRS,0=rested), subjective sleep quality(0-100 NRS,0= restful), daytime sleepiness(0-24 Epworth Sleepiness Scale,0=not sleepy). Repeated-measures ANOVA evaluated changes in compliance and OSA-symptoms over time (baseline, at month 3, 6, 12, 18, 24 and 36 after post-treatment sleep study). **Results:** From 79 patients, 54 participants (46.3% female, $mean_{age}$ 64.4±10.71y/o) were included; of those, 30(55.6%) were classified as *responders*. T-test revealed that *responders* and *non-responders* differed at baseline for AHI(28.29±19.89 vs 16.75±8.94,*p*=.007), snoring (54.66±28.41 vs 71.74±24.06,*p*=.026), sleep quality(49.83±26.942 vs 64.79±24.65,*p*=.042). Although fluctuating in both groups, no difference was found over time in MAD-use compliance and OSA-symptoms. *Responders* and *non-responders* significantly differed at 18 months in daytime fatigue (45.08±29.53 vs 20.22±15.67,*p*=.032) and sleepiness(6.38±4.29 vs 2.78±2.91,*p*=.041). **Conclusions:** Compliance in MAD-use was maintained over 36-month observation. Although OSA-symptoms fluctuated over time, only daytime fatigue and sleepiness worsened at 18 months in *responders* compared to *non-responders,* although daytime sleepiness was still within normal range.

Funding: No Funding

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Abstracts

Poster Number 166

Title: Orthodontic Intrusion for Attachment Gain in Severely Involved teeth with Periodontitis: A Case Report

Authors: A. Shafi, Department of Orthodontics, University of Kentucky, N. Almehmadi, Department of Periodontics, University of Kentucky G T. Kluemper, Department of Orthodontics, University of Kentucky M. Al-Sabbagh, of Periodontics, University of Kentucky

Abstract: Objective: This case report demonstrates the outcome of orthodontic intrusion of severely extruded and pathologically migrated maxillary anterior teeth. The implemented treatment modality restored esthetics, function and comfort. **Case report:** A 45-year-old Indian Female referred to the periodontology clinic for the extraction of maxillary incisors due to severe periodontal attachment loss. Patient complained of poor esthetics and discomfort and desired to save her teeth. The periodontal and radiographical examination revealed generalized slight bone and attachment loss with localized severe involvement and grade II tooth mobility confined to maxillary incisors. Patient had excessive overjet and proclination due to pathologic migration and extrusion. Class I molar and canine relationship and moderate spacing in lower arch was noted. Periodontal treatment that includes oral hygiene enforcement and non-surgical therapy was performed. Afterward, a vigilant orthodontic retraction followed by intrusion with light continuous forces of maxillary incisors along with full arch teeth alignment was executed. The three years follow up examination revealed significant periodontal attachment gain, crown to root ratio improvement, and teeth stability. Patient expressed complete satisfaction. **Conclusion:** Diligent and collaborative periodontal and orthodontic treatment has the potential to reconstruct periodontal apparatus and restore function, esthetic and comfort.

Funding: No Funding

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Abstracts

Poster Number 167

Title: Biological Sex Influences on Periodontal Treatment Outcomes

Authors: Jonathan Petrie, MS, College of Dentistry, U of Kentucky Effie Ioannidou, DDS, MS, U of Connecticut Malini Kirakodu, U of Kentucky Alejandro Vilasante-Tezanos, PhD, U of Texas Medical Branch Luciana Shaddox, DDS, MS, PhD, College of Dentistry, U of Kentucky

Abstract: Currently there is no literature available regarding biological sex influence on periodontal treatment response. **Objectives:** The overall objective of this proposal is to evaluate the impact of biological sex in clinical outcomes of standard periodontal therapy. We hypothesize differences arise between sexes in response to different periodontal therapy modalities as measured by meaningful clinical endpoints, controlling for important contributing factors. **Methods:** Data was gathered from periodontal charting found in the University of Kentucky College of Dentistry's electronic health records system, Axium. The population was limited to patients aged between 18-90 years seen in the university dental clinics from December 1st, 2017-December 1st, 2019 to receive standard periodontal treatment with at least one follow-up post-therapy and at least one maintenance appointment within the six months following initial treatment. Data analyzed include percent pocket depth greater than 4mm (%PD>4), mean clinical attachment loss (CAL), mean pocket depth (PD), bleeding on probing (BOP), and presence of plaque. **Results:** Data collected (145 F and 140 M) showed no difference in baseline age (median 53 F vs 56 M) and any clinical parameters between sexes, with the exception of baseline mean CAL, in which males had a higher baseline than females (median: M=3.01 vs F=2.85, p=0.037). Both sexes responded well to treatment as the data indicates reductions in all clinical parameters of disease (%PD>4mm reductions of 3.17 (F) and 3.76(M) at initial evaluation, $p<0.001$). However, males had greater CAL reduction than females at the second evaluation post-treatment (0.37 (M) vs 0.16 (F), p=0.004). **Conclusions:** Within the limitations of this study, we observed that males have more severe CAL before treatment than females but both biological sexes respond well to standard periodontal treatment, with males showing slightly better CAL reductions long-term. Future research will focus on obtaining and analyzing a more representative sample of patients to better confirm these findings while also considering different confounding factors.

Funding: No Funding

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Abstracts

Poster Number 168

Title: The Relationship Between Sugar Sweetened Beverage Consumption on Anxiety and Depression in Kentuckians

Authors: Elizabeth Piipponen, Departments of Dietetics and Human Nutrition, U of Kentucky Angela B. Grubbs, DNP, APRN, College of Nursing, College of Dentistry, U of Kentucky

Purpose: Approximately 50% of adults are diagnosed with a mental health issue at some time in their life. Sugar is an increasingly common ingredient in the American diet. Mental health issues are often related to lifestyle factors that include diet. Leading sources of sugar in the diet come from sugar sweetened beverages such as sodas, juice, and sports drinks. The purpose of this study is to determine if an association exists between the consumption of sugar sweetened beverages and the diagnosis of anxiety and depression among an adult dental clinic population. **Methods:** A retrospective data from a community dental clinic will be used to extract data from 100 patients. Data was collected between August 2019 through January 2021. Study protocol was approved, IRB #74332. Descriptive statistics will be used to describe the study participants. Multivariate regression will be used to analyze the relationship between diagnosis of depression and anxiety and sugar sweetened beverage consumption while controlling for BMI, age, and gender. **Results:** Expected results may indicate that consumption of sugar sweetened beverages is associated with depression and anxiety. Implications of this study include further exploring depression screening among dental patients. **Conclusion:** Mental health is an important factor of overall wellness, and it is vital that we determine which lifestyle factors contribute to poor mental health. Based on results there will be implications for practice made to support improvement of lifestyle habits in patients with a diagnosis of depression and/or anxiety.

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Abstracts

Poster Number 169

Title: The Association of Fruit and Vegetable Intake on Blood Pressure Measurements and Hypertension Diagnosis in Wellness Clinic Patient Population

Authors: Madeline Dunn, Departments of Dietetics and Human Nutrition, U of Kentucky, Angela B. Grubbs, DNP, APRN, College of Nursing, College of Dentistry, U of Kentucky

Abstract: Purpose: Hypertension is responsible for 10.4 million deaths per year globally, making it the leading cause of death across the world and it is a major risk factor for cardiovascular disease. In Kentucky, cardiovascular disease is the leading cause of death and across the country, and in 2017, Kentucky was ranked ninth for cardiovascular disease. The purpose of this study is to examine the association between fruit and vegetable consumption and hypertension diagnosis or elevated blood pressure among the adult patients of a community dental clinic. **Methods:** A retrospective data from a community dental clinic will be used to extract data from 100 patients. Data was collected between August 2019 and January 2021. Study protocol was approved, IRB #74332. Descriptive statistics will be used to describe the study participants. Multivariate regression will be used to analyze the relationship between hypertension/elevated blood pressure and fruit and vegetable consumption while controlling for BMI, age, sex, and insurance plan. **Results**: Expected results may indicate that patients of the clinic who consume more servings of fruits and vegetables may have lower rates of hypertension or high blood pressure without hypertension diagnosis, which may be independent of BMI, gender and age. **Conclusion**: The results may imply whether or not increasing fruit and vegetable consumption can independently improve blood pressure measurements and may also provide prospective for nutrition policymakers and health insurance providers regarding public health outcomes.

Funding: USDA 2020-67037-30669/project accession no. 1021699

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Abstracts

Poster Number 170

Title: Dental Caries and Patient-Reported Sugary Food and Drink Consumption

Authors: Marissa Husted, Departments of Dietetics and Human Nutrition, U of Kentucky, Marcia V. Rojas Ramirez, College of Dentistry, U of Kentucky Craig S. Miller, College of Dentistry, U of Kentucky

Abstract: Purpose: Many factors increase risk for dental caries including poor oral hygiene, age, decreased salivary flow, and high sugar consumption. The purpose of this study was to explore the relationship between dental caries and sugary food and drink consumption as reported by adults attending a University Dental Clinic. **Methods:** A retrospective study was performed (IRB #74332). Data were collected from the electronic health record of 673 adult patients between August 2019 and January 2021. Data extracted included demographics, dental insurance, decayed, missing and filled teeth, and self-reported sugary food and drink consumption. Descriptive statistics, t-test, chi-square test were used to describe the study participants, and multivariate regression was used to analyze the relationship between dental caries and sugary food/drink consumption while controlling for age, sex, ethnicity, and insurance plan. **Results:** 56% of the sample reported sweet consumption (food/drink) and 58% had caries. After controlling for demographics, sweet drinks was a stronger predictor of caries experience than sweet foods (p=0.001 vs 0.971). Those who did not consumed soft drinks had 60% less risk of experiencing caries. **Conclusion:** Caries risk assessments incorporate known risk factors for dental caries, such as sweet consumption. However, the majority of the CRA measure food intake. This study shows that soft drink consumption is a stronger predictor of disease, significantly increasing the odds for disease above and beyond sweet food consumption. Its use in CRA should be further explored.

Funding: USDA 2020-67037-30669/project accession no. 1021699

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Abstracts

Poster Number 171

Title: The Association between Nutritional Status and Dry Mouth on Caries Experience

Authors: Alyssa Hamilton, Departments of Dietetics and Human Nutrition, U of Kentucky Marcia V. Rojas Ramirez, College of Dentistry, U of Kentucky Craig S. Miller, College of Dentistry, U of Kentucky

Abstract: Purpose: Dental caries are multifactorial and poor nutrition and dry mouth are important contributors to onset and progression of disease. The aim of this paper was to further explore the relationship between nutritional status (adequate, 3 or more fruit/veggie servings/day; poor, less than 3 fruit/veggie servings/day), dry mouth, and caries experience among adult patients seeking care at a University Dental Clinic. **Methods:** A retrospective chart review was performed (IRB #74332). Data was extracted from the electronic dental record of 647 individuals age 18-80 between August 2019 and January 2021. Descriptive statistics were used to summarize the variables of interest. Comparisons between groups was done using a Chi-square test and independent t-tests. Three regression models were built to test the individual and combined effect of variables of interest on presence of caries. **Results:** 22.4% of the sample reported adequate fruit/veggie consumption and 20.5% reported dry mouth. Caries experience had a tendency to increase in the group of poor nutrition and dry mouth ($p>0.05$). An additive effect of nutrition and dry mouth was not observed in this sample. **Conclusion:** Both dry mouth and inadequate intake of fruits/veggies are prevalent. Assessment of nutrition status with standardized tools should be further explored as the potential to influence onset and progression of dental caries is eminent.

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Abstracts

Poster Number 172

Title: Anti-inflammatory properties of Functionalized Mesoporous Silica Nanoparticles loaded with Quercetin

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Abstract: New and more efficient drug delivery systems are needed as adjunctive therapy to prevent and treat periodontal disease. Mesoporous silica nanoparticles (MSNPs) are showing great potential in drug delivery to prevent and/or treat disease due to their biocompatibility properties and increased surface area, which allows higher loading amounts and prolonged and sustained delivery of therapeutic compounds. The purpose of our study was to evaluate cytotoxic effect, cellular internalization, and anti-inflammatory properties of MSNPs functionalized with aminopropyl groups and titania (MSNPs-AT) and loaded with quercetin in human oral epithelial cells (OECs). OKF6 cell cultures were exposed to different concentrations of unloaded MSNPs-AT or loaded with quercetin. Cell cytotoxicity was tested by WST-1, MSNPs-AT internalization by OECs and oral epithelium organotypic cultures was evaluated by fluorescence microscopy, and anti-inflammatory properties determined by cytokine production (IL-6, IL-8, GM-CSF) in OKF6 cell supernatants after exposure to *Actinomyces naeslundii*. Cell viability was not significantly affected by quercetin, unloaded MSNPs-AT, or MSNPs-AT loaded with quercetin. MSNPs-AT loaded with quercetin were successfully internalized by OECs as early as four hours and exhibited better anti-inflammatory effect when compared to quercetin alone ($p \leq 0.01$). These findings suggest that MSNPs-AT loaded with quercetin can be efficiently and rapidly internalized by OECs in cell cultures and regulate the production of pro-inflammatory chemokines/cytokines without compromising cell viability. Efficiency of internalization/translocation of similar amounts of MSNPs-AT was lower in stratified oral epithelium. Future studies testing functionalized MSNPs loaded with antibiotics are warranted to test their effect in controlling intracellular bacterial infections of OECs.

Funding: VPR Igniting Research Collaborations Program

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Abstracts

Poster Number 173

Title: Barriers to dental care access by young individuals - Retrospective UK preliminary data

Authors: R.C.G. Oliveira, Center for Oral Health Research, U of Kentucky, M.P. Kirakodu, Data Management Office, U of Kentucky, L.M. Shaddox, Center for Oral Health Research, U of Kentucky

Abstract: The Social Vulnerability index (SVI) was developed by CDC and includes different social determinants of health that have not yet been evaluated against oral care utilization and compliance. To determine the young patients' attendance profile in UK and their compliance rate and associate this compliance rate with their SVI, which includes rankings for four different themes related to socioeconomic status (1), household composition (2), race/ethnicity/language (3), and housing/transportation (4). Visits characteristics, such as gender, race/ethnicity, procedure type, insurance type and social vulnerability index (SVI) were collected from 23459 young patients (0-17 years-old) records that were seen at least in one UK clinic from January 2015 to December 2020. A yes-no compliance category was created according to a minimum number of visits, then compared and associated with all variables. Among all young individuals, the compliance rate was 11.7%. When the yes-no compliance groups were compared with the SVI's themes, we noticed a statistically significant difference between non-compliance group and themes 1, 2 and 3 ($p<0.001$). The overall correlation between compliance and SVI was positive but weak ($r=0.02$; $p<0.001$). Within the limitations of this preliminary outcome, we can conclude that SVI is an important factor that hinders the access to dental care but it may not be the only factor. Further investigation on the psycho-social factors such as parental dental attendance, parental and patient oral health literacy levels, parental and patient perceptions, patient specific financial and educational deprivation factors as well as a deeper investigation of SVI factors are needed.

Funding: No Funding

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Abstracts

Poster Number 174

Title: Deep Bite Etiology and Treatment: A Review and Case Report

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Abstract: Background: Anterior deep bite (DB) is one of the most common malocclusions that can impair patients' masticatory functions. DB is classified according to its origin, function, dentition, and extent of DB. **Method and material:** Here we have a review on Deep bite etiology and treatment added with a case report. Our data sources were PubMed, Google scholar, Cochrane Library, and hand searching. **Results:** Hereditary factor, skeletal factors, dental factors, muscular factors, and habits are mentioned as etiology of DB. Treatment options in growing patients are intrusion of anterior teeth, eruption of posterior teeth, or combination of both. Treatment options in non-growing patients are orthognathic surgery and intrusion of anterior teeth. Intrusion mechanics are considered when patients have gummy smile, inadequate freeway space, large interlabial gap, or Class II division I malocclusion. Posterior extrusion mechanics are considered when patients have short upper or lower lips, adequate freeway space, no interlabial gap, or Class II division II malocclusion. Surgical options could be complete maxillary osteotomy, upward movement of maxilla in a Lefort I procedure, mandibular ramus surgery, sagittal split mandibular surgery, or sub-apical osteotomy. A deep bite case is presented which is treated by intrusion and proclination of the upper and lower incisors. **Conclusion:** DB is a common malocclusion that has various etiology. Its treatment should be based on the etiology.

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Abstracts

Poster Number 175

Title: The effect of unstimulated salivary flow rate on the intensity of pain level associated with intraoral burning pain/glossodynia

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Abstract: Aim: As the etiology of Burning mouth syndrome (BMS), defined as a chronic intraoral burning sensation with no identifiable local or system cause, is still unclear, the aims of this retrospective study were to determine 1) prevalence of hyposalivation/xerostomia in BMS patients, 2) correlation between salivary flow, xerostomia and pain intensity in BMS patients, 3) if treatment of hyposalivation resulted in alleviation of oral burning. **Methods:** Medical chart of 194 patients diagnosed with glossodynia (International Classification of Disease ICD-10-CM, Diagnosis Code-14.6) at University of Kentucky College of Dentistry between January 2014-April 2020 were reviewed. Patient's age, sex, pain duration, pain intensity (Numerical Rating Scale- NRS), medications, unstimulated (UWS) and xerostomia inventory score were analyzed (Spearman correlation, paired t-test). **Results:** Out of 194 records screened, 70 were excluded due to missing data and/or to diagnosed conditions other than BMS. Out of 124 BMS patients included, 103 presented data on salivary flow, sixty five percent had hyposalivation (≤ 0.2 ml/min) and an additional 20.4% had a low normal salivary flow (0.2-0.4 ml/min). Dry mouth complaint was recorded in 73 or 94 patients (77.7%). The mean pain intensity at baseline was 6.31(2.36). An association between UWS and pain intensity at baseline was not demonstrated by Pearson correlation (r=-0.18; p=≥ .074). There was a significant reduction of pain between visit 1 & visit 2(2.55(2.7), p=≤.001) regardless of treatment. **Conclusions:** the preliminary results of this study suggest that patients with complaint of intraoral burning often present with low UWS, and treatment of hyposalivation may alleviate pain intensity of BMS.

Funding: No Funding

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Abstracts

Poster Number 176

Title: Elevated Inflammatory Markers and Periodontitis Occurrence in Hispanics with Diabetes

Authors: OM Andriankaja and LM. Shaddox

Abstract: Periodontal disease (PD) is prevalent among individuals with type 2 diabetes (T2D). Although several molecular mechanisms have been demonstrated in this increased risk, inflammation in general plays a significant role in the pathogenesis of both diseases and could be the link between the diseases. Objectives: As Hispanics are more likely than the general population to develop diabetes, PD is prevalent in this subpopulation. Accordingly, we aimed to assess the potential associations between serum inflammatory mediators and chronic PD among T2D Hispanic adults. Methods: This cross-sectional study consisted of 246 T2D residents of Puerto Rico, aged 40–65 years. Serum level of inflammatory biomarkers (IL-1b, 1L-6, IL-10, TNF-α), endothelial adhesion molecules (ICAM-1, VCAM-1), bone related factor RANKL, and matrix-metalloproteinase-8 (MMP-8) were examined using Luminex and ELISA. The outcomes included percent of sites with probing pocket depth (PPD) ≥ 4mm, and clinical attachment loss (CAL) ≥ 4 mm. Logistic regression models were fitted to the categorized outcome variables (low vs. medium/high tertiles) while controlling for age, gender, education, smoking and alcohol status, BMI, bleeding on probing, statins use, and dental examiners. Results: A significant association was found between ICAM-1 (3rd vs. other tertiles) or increase in IL-10 and medium/high percent of sites with PPD≥ 4mm (ICAM-1; OR: 1.97 (95%CI:1.05-3.70); IL-10; OR:1.10 (1.02-1.22)). A significant association was also found between IL-1b (4th vs. 1st quartile) or RANKL (other vs. 1st quartile) and medium/high percent of sites with CAL≥ 4mm (IL-1b; OR: 3.09 (1.12-8.51); RANKL; OR: 2.08 (1.07-4,03)). Conclusions: High serum levels of ICAM-1 and IL-10 were associated with medium/high percent of sites with PPD ≥ 4 mm, while high serum levels of IL-1b and RANKL were associated with medium/high percent of sites with CAL ≥ 4mm among Hispanic individuals with type 2 diabetes.

Funding: No Funding

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Abstracts

Poster Number 177

Title: The Clinical Impact of L-PRF, H-PRF, or the Use of a Surgical Stent on Palatal Donor Site Healing

Authors: Abdo, Ismail

Abstract: **Objective**: Postoperative discomfort, and donor site hemorrhage are the main disadvantage of autogenous soft tissue grafting. The objective of this study is to evaluate the clinical impact of two types of platelet rich fibrin (PRF) vs Palatal stent on the healing of the donor palatal site after tissue harvesting. **Materials and methods:** A total of 30 subjects indicated for free gingival graft procedure will be enrolled in the study. The sample will be divided into 3 groups according to the postoperative coverage method: Group A (Surgical stent), Group B;(Leucocyte-PRF), and Group C (Horizontal-PRF). Intra-oral photograph will be taken, and grid technique will be used to evaluate percentage of re-epithelialization to assess the postoperative tissue healing. Visual Analog Scale and analgesic consumption will be used to assess the degree of postoperative pain and discomfort. Subjects will be examined in 5, 10, 14, and 21 days. Data will be statistically analyzed to identify if there is any difference between the examined groups. **Conclusion**: H-PRF centrifugation protocol results in less trauma to the cells and higher concentration of growth factors compared to L-PRF and surgical stent. Therefore, improved soft tissue healing and less post-operative discomfort will be expected in the Horizontal PRF group.

Funding: No Funding

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Abstracts

Poster Number 178

Title: Evaluation of Risk Factors for Periodontal Disease Susceptibility in African American Adolescent Groups vs Caucasians

Authors: Sabbagh, S.

Abstract: The purpose of this cross-sectional retrospective and laboratory study is to evaluate whether there are disparities between African American and Caucasian children/adolescent groups samples in the subgingival oral microbial composition, pro-inflammatory, and anti-inflammatory markers in the saliva and gingival crevicular fluid and oral health clinical parameters. This study will also observe, compare, and analyze the differences in the oral microbial and inflammatory profile pertaining to Caucasians vs. African Americans. The final component to this study is to evaluate if there is an inverse relationship between caries and periodontal susceptibility in these two populations. Preliminary data showed that active and recurrent caries as well as periodontal parameters and salivary markers were similar between the two groups ($p>0.05$). However, the local and systemic pro-inflammatory markers were higher in the African-Americans ((Local (GCF) levels of Eotaxin, IL12p70, IL2, and MIP1a chemo/cytokines were higher in African Americans than Caucasians. $p< 0.05$,) Further evaluation of these parameters are needed to possibly predict oral disease susceptibility by race in the near future.

Funding: No Funding

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Abstracts

Poster Number 179

Title: Developing Mentorship Programs in Dental Academia to Improve Career Success for Female Faculty

Authors: Morris, Kaylee and Sharab, L.

Abstract: Career growth amongst US women faculty in dental academia continues to fall below male faculty with threats of limited resources for growth. Recent research has shown discrepancies between female: male representation in leadership positions and pay among faculty in academic healthcare. Previous research has depicted the continuous challenge of gender bias for women in healthcare, less satisfaction among women in dental disciplines compared to males, and underrepresentation among women in every academic rank except instruction. Additional research illustrated job satisfaction in academia was linked to the quality of mentorship satisfaction, most dental institutions have vaguely defined mentorship programs, and the quality and availability of mentorship have a major effect on the development of faculty in healthcare. It is proposed that further research is necessary to improve gender equality among faculty in dentistry and establish mentoring programs to aid in successful career paths. In hopes of proposing a mentoring program to provide women a useful resource for greater success as leaders and role models for females in the dental field. This research project aims to propose a successful mentoring program for faculty in dentistry by dissecting and analyzing data and proposed solutions from previous research in this area reported by other healthcare fields.

Funding: No Funding

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