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ABSTRACT BOOK

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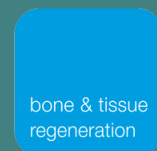


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INFLUENCE OF INTRAORAL APPLICATION OF ANTISEPTIC AND FLUORIDES DURING ORTHODONTIC TREATMENT ON BIOMECHANICS OF REMODELING OF DENTAL ARCHES

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ABSTRACT

Objectives: The aim was to investigate how corrosion induced by intraoral application of antiseptics and fluorides during orthodontic treatment influence biomechanics of remodeling dental arches.

Methods: Sample consisted of 36 subjects aged 13-42 years, 56% females. All patients were in orthodontic treatment with fixed orthodontic appliance 0.022 inch MBT (American Orthodontics, Sheboygan, USA). There were 12 subjects in each experimental group - exposed to saliva, chlorhexidine (Curaspert ADS 212, Curaden, Italy) or fluorides (Mirafluor-K-gel, Hager Werken, Germany) for a 30 days. Plaster casts of dental arches were made and analyzed when NiTi alloy archwire 0.020x0.020" (BioForce PLUS, Dentsply GAC International, USA) (T1) was placed intraorally and after 90 days (T2). Change was quantified as the difference in dimensions (T2-T1) in maxilla and mandible. Anterior width-to-length ratio was used as a

measure for dental arch shape.

Results: Changes in dimensions of dental arches were mostly up to 1 mm. Amount of change of dental arch shape in maxilla was similar in experimental groups. In mandible, only NiTi exposed to saliva changed dental arch shape significantly more than those exposed to fluorides or chlorhexidine with large effect size ($p=0.004$; $\eta^2=0.408$). The change was more significant in length with low effect size ($p=0.031$; $r=0.199$) than in width. Exposing NiTi archwires to fluorides induced the lowest change of dental arch shape, significantly less than exposure to chlorhexidine. Mandibular dental arch exposed only to saliva reshaped to more rectangular form, while after exposure to antiseptics became more tapered.

Conclusion: Using fluorides or oral antiseptics for caries and gingivitis prevention during orthodontic treatment affects elasticity of NiTi in comparison to effect of saliva exposure itself. Because the shape of dental arch had changed the least after exposure of the wire to fluorides, it seems that fluorides reduce the elasticity of NiTi. However, the amount of changes, though statistically significant, was very small and probably would not have clinical implications in changing orthodontic biomechanics.

Key words: NiTi alloys, elasticity, fluorides, oral antiseptic, dental arch shape

Manish Kumar Khazane: Shilajit - A Forgotten Healer of Himalayas: An in vitro study

ABSTRACT

Shilajit (salajit) is a blackish brown exudate obtained from layer of rocks in many mountain ranges, especially in the Himalayas and Hindukush ranges of the Indian subcontinent and is used for centuries by the Ayurvedic medicine. Considering its unique composition as a phytocomplex, very rich in fulvic acid, researchers hypothesize that shilajit is produced by the decomposition of plant material from species such as *Euphorbia royleana* and *Trifolium repens* which seems to occur through centuries. Shilajit is considered a millenary product of nature. Given this, it is necessary that shilajit break the cultural paradigm and enter into the rest of the world by the hand of rigorous research at molecular and cellular levels, which could elucidate the interactions of the active ingredients of the different shilajit preparations with biomolecules. Preclinical investigations about shilajit indicate its great potential as an antioxidant, antidiabetic, antiallergic, analgesic, immunomodulatory, antifungal, cognitive and memory enhancer. It was also shown to have significant anti-inflammatory effect. Therefore, the aim of this preliminary study is to optimize and characterize the shilajit formulation as an endodontic irrigant and also to assess the cytotoxicity and inflammatory effects. The novel irrigant is prepared by mixing shilajit powder in sterile distilled water (1:1 ratio) at three different concentrations (1%, 5% and 10%). The formulations will be then characterized using Gas chromatography-mass spectrometry (GC-MS) analysis, following which the experimental solutions will be assessed for in vitro cell

viability and anti-inflammatory response on 3T3 mouse fibroblast cell line using MTT and Nitric oxide synthase assays respectively.

Key words: shilajit, anti-inflammatory, endodontic irrigants, natural irrigant, cell viability

Martina Brumini: Child Perceptions Questionnaire - Validation Protocol

ABSTRACT

Objectives: To perform cross-cultural adaptation and validation of 8-item Child Perceptions Questionnaire which measures psychosocial influences and oral functions: Regression Short Form (RSF:8) and Item Short Form (ISF:8).

Methods: Cross-sectional study was performed at Department of Orthodontics, University of Rijeka. Convenience sample of 237 11-14 year-olds (53% female) participated.

Results: Both RSF:8 and ISF:8 had acceptable model fit. Emotional and social well-being items had higher factor loadings compared to oral function items. Higher correlations were observed for measures of self-perception and satisfaction with appearance than for normative measures of clinical condition. Questionnaires were able to distinguish adolescents' quality of life based on malocclusion severity, ISF:8 additionally based on intensity of caries. Questionnaires had acceptable reliability, ISF:8 had higher Cronbach's α . ISF:8 was able to detect greater improvement of adolescents' quality of life following orthodontic treatment.

Conclusion: Both 8-item Child Perceptions Questionnaire are valid and reliable, ISF:8 might be more appropriate. Adolescents' quality of life related to oral health might be better described by psychosocial well-being than objective treatment need.

Mia Uhač: Temporomandibular Disorders and Orofacial Pain in Subjects Referred for Orthodontic Consultation

ABSTRACT

Objectives: The aim of the study was to assess the extent to which dysfunctions of the temporomandibular joint and orofacial pain were present in subjects referred to orthodontist.

Methods: The study included 352 participants (patients referred for orthodontic consultation at the University Dental Clinic in Rijeka) aged 5-52 years, 52% females and 9% adults who self-administered the Temporomandibular Disorder (TMD)-Pain Screener. Diagnostic criteria for Temporomandibular Disorders (DC TMD) protocol was followed during clinical examination and diagnosis. Occlusal characteristics, breathing and swallowing patterns, facial asymmetry, previous orthodontic treatment, self-reported parafunctions as well as chewing problems were evaluated.

Results: TMD was clinically confirmed in 10% of the subjects (95% CI 7-14); 4% of these subjects had clinically confirmed pain disorders (95% CI 3-7) while 7% had joint disorders (95% CI 5-10). The odds for clinically confirmed TMD were found to be higher in women, adults, permanent and crowded dentition, those with facial asymmetry, subjects who were previously orthodontically treated, those who reported mastication problems and had a TMD-Pain Screener score of ≥ 3 , as was found with univariate analyses. Deviation from sagittal class I, transversal discrepancies, forced bite or parafunctions were not found to be related to dysfunction or pain. Nonetheless, when all factors were controlled for in the multiple logistic regression, the only significant TMD predictors were

chewing problems (OR 2.8; 95% CI 1.1-7.4; $p=0.034$) and a TMD-Pain Screener score ≥ 3 (OR 4.7; 95% CI 1.8-12.4; $p=0.002$), hence excluding malocclusions and orthodontic treatment as potential predictors for orofacial pain and TMD.

Conclusion: Orofacial pain and temporomandibular joint dysfunction are not frequent in people referred to orthodontists. Malocclusions and previous orthodontic treatment do not increase the odds for TMD and pain of the orofacial region.

Key words: diagnoses and examination, orofacial pain, orthodontics, temporomandibular joint disorders

Martina Zigante: Smell and taste changes in titanium and nickel allergic sensitization in orthodontic patients

ABSTRACT

Objectives: To assess the prevalence of the allergic sensitization to titanium and nickel in patients undergoing orthodontic treatment with fixed appliances and to evaluate whether sensitized subjects have altered sense of smell and taste.

Methods: A total of 250 subjects undergoing orthodontic treatment were invited to participate and 245 accepted. Age range was 11 to 45 years (median 18, interquartile range 16-22), 68% were females and 52% adolescents. Epicutaneous patch test included nickel sulfate, titanium, titanium dioxide, titanium oxalate and titanium nitride. Out of the patch test positive subjects, 26 consented to participate in testing of taste and smell and were matched by age and sex with 26 patch test negative subjects. Taste Strips and Sniffin' Sticks (Burghart Messtechnik, Wedel, Germany) were used.

Results: Prevalence of the allergic sensitization to titanium and/or nickel in orthodontic patients was 15.5% (95% CI 11.5-20.6%). The sense of taste and smell were more impaired in sensitized subjects ($p \leq 0.025$), sense of taste was more affected than sense of smell, and the most affected taste was sour, while the taste of sweet was least impaired.

Conclusion: Allergy to titanium is more uncommon than allergic sensitization to nickel with altered sense of smell and taste related to those allergies.

Key words: allergy; titanium; orthodontics; taste; smell

Diana-Beatrix Velicu: Development of TMJ-OA in Spaceflight and Treatment with BP-NELL-PEG Therapy

ABSTRACT

Objectives: Osteoporosis is the most common metabolic disease, caused by an imbalance of osteoblast and osteoclast activities. All bones can be affected by osteoporosis, including mandibular condyles. Temporomandibular joint (TMJ) deformations are a significant reconstructive challenge and contribute to the progression of temporomandibular disorder that is reported to affect 100 million working adults, which accounts for the second largest musculoskeletal burden in the US alone. Thus far, osteoporosis drugs act either anabolically or anti-resorptively. NELL-1 is a potential candidate that could effectively target the TMJ. The Rodent Research 5 (RR-5) spaceflight mission represents a successful collaboration with NASA and CASIS, hypothesizing that systemic NELL-1 therapy could reverse the spaceflight-induced osteoporosis in the TMJ.

Methods: The RR-5 mission with NASA demanded a reduced dosing frequency to at least every 14 days. As such, NELL-1 was engineered to increase target-specificity to and retention in bone tissues. NELL-PEG was conjugated with inactive bisphosphonate (BP), increasing protein uptake by bone. Eight-month old female BALB/c mice (n=100) were randomly assigned to 4 groups. Subjects were treated with 10mg/kg systemic BP-NELL-PEG injected intraperitoneally (IP) every 2 weeks. At 4 weeks, half of the Flight group and Ground group have returned to UCLA to continue treatment. At 9 weeks, all mice were sacrificed. A two-tailed Student's t-test was performed to compare the two groups. In multiple group comparisons, one way or

two-way ANOVA was employed with Tukey's method as a post-hoc adjustment.

Results: Micro-CT imaging showed an increased porosity and decreased bone mineral density and volume in the Flight PBS groups, compared to Ground PBS control. Histological analyse showed significant differences among groups, proving that systemic BP-NELL-PEG not only prevented spaceflight-induced bone loss, but also recovered the condylar cartilage and subchondral bone.

Conclusion: BP-NELL-PEG may provide a therapeutic innovation for improving the current standard care for osteoporosis.

Key words: temporomandibular joint, osteoarthritis, NELL-1

UNDERGRADUATE PAPERS

Yaryna Tylchak: Clinical Oral Manifestations Of Acute Respiratory Viral Infection And Influenza In Paediatric Patients

ABSTRACT

Objectives: More recently, there has been a clear tendency for increasing the proportion of infections caused by respiratory viruses, opportunistic microorganisms, etc. The mucous membranes are the first to be attacked by pathogens. Oral mucosa often serves as the site of various pathological processes development. Objective was to determine the oral manifestations of ARVI and influenza in paediatric patients.

Methods: We conducted a clinical examination of 53 children, aged 1- 6 years, with of acute respiratory viral infection who were treated at the infectious cubicle unit of Ternopil Regional Children's Clinical Hospital. Examination of patients consisted of careful anamnesis collection, dynamic clinical observation, which made it possible to determine the severity of the disease, salivary glands involvement in the infectious process, the presence of oral mucosa damages manifestations.

Results: The lymphadenitis of the maxillary, submental lymph nodes of varying degrees of severity was determined in all examined patients. The vermilion border of the lips were dry, pale pink in color, with cyanotic tinge, in some cases there were found vesicles with hemorrhagic - serous content, bleeding crusts (13.21% of cases). Catarrhal stomatitis was revealed in 92.45% of children with acute respiratory viral infection. Oral mucosa was hyperemic, swollen, vascular pattern was strengthened (in 86.79% of

cases), there were hemorrhages (in 45.28% of cases). The signs of acute viral sialadenitis caused by influenza virus of varying degrees of severity such as hyposalivation, increased saliva viscosity with odour. Vesicular and erosive damages were found in 22.64% of the total number of examined children.

Conclusion: The changes in oral mucosa were established during clinical examinations of children with ARVI. Oral mucosa was affected in all forms of the disease, however, these changes were not strictly specific, their intensity was determined by the severity of ARVI.

Key words: oral mucosa, acute respiratory viral infection, influenza, children

Anna Lewandowska: Dental Erosion "the Effect of Flavoured Mineral Waters, Energetic Drinks, Non-cariogenic Sugars"

ABSTRACT

Objectives: There is an increase in the consumption of soft drinks. Although such drinks are considered as a "healthy" alternative, they constitute high risk for the development of dental erosion. Dental erosion is becoming a worldwide, irreversible phenomenon, affecting from 31% to 74% children all over the world. The aim of this study was to determine the influence of juices, isotonic, energetic drinks, teas flavoured mineral waters and sugar substitutes on the enamel.

Methods: Enamel was incubated with tested solutions to determine the pH, the concentration of phosphorus in a drink by UV-VIS spectroscopy. The number of dissolved enamel was calculated.

Results: Surprisingly, flavoured mineral waters caused the most prominent enamel dissolution ($25,2 \pm 3,34$ g/1mg of hydroxyapatite) out of all tested drinks. All of the sweetening substances caused slight washout of phosphorus (2,09-2,45 g), but even the addition of non-cariogenic sugar substitutes (xylitol, erythriol) to acidic drinks doubles the number of dissolved hydroxyapatite of enamel. Isotonic and energetic drinks caused substantial dissolution of phosphorus (11,84 g P / 1mg of enamel). Teas however dissolved small quantity of enamel (0,28 0,35 g/1mg enamel).

Conclusion: This research allows determination of direct effect of drinks on teeth enamel degradation, while other studies conducted worldwide focus on the frequency of consumption of drinks and occurrence of erosion. The exact

quantity of dissolved tissue is assessed, leading to precise comparison by innovative method approved by Alliance for Cavity Free Future. My study shows that drinks that initially do not contain phosphorus constitute high risk for enamel. Presented results can be very beneficial for every patient, as erosion is irreversible, involving more than a half of the world population. We should be aware what drinks to avoid. The findings can also be used in acidic drink production in order to decrease their erosive potential.

Key words: dental erosion, UV-VIS spectroscopy, flavoured mineral waters

Irina Poiana: The importance of the golden ratio for the dentofacial aesthetic

ABSTRACT

Objectives: In order to achieve pleasing dental aesthetics, the maxillary anterior teeth are essential. Numerous methods are used to measure their dimensions, including the golden proportion, this one being considered as a gold standard for aesthetic evaluation. A beautiful smile was proved to be correlated with a higher self-esteem degree and in the same time with a better life, therefore in the last period a great deal of dental practitioners showed a big interest in this subject. The objective of this study was to evaluate the perception upon the golden proportion between 3 groups of participants: dental students, artists and laypersons.

Methods: This clinical observational study included a total of 307 participants that met the inclusion criteria, having a bigger percentage of females and young adults as participants. A series of photoshopped pictures were used in order to compare the dental ideal proportions with the normal ones. Other dental characteristics were also improved and compared between the rest of the pictures, like dental color and interincisive line. SPSS was used to analyze the data.

Results: There were significant differences between the subjects' preferences. Most of the artists seemed to prefer a dental golden ratio, followed closely by the dental students, but on the other hand, the laypersons preferred the normal proportion. All the 3 categories considered that an ideal color is more important than an ideal proportion, but there were other aspects that they disapproved on.

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Key words: golden proportion, dental aesthetics, golden-ratio

Evangelos Liappis: The use of the technology of ultrasounds in Endodontology

ABSTRACT

This paper is dealing with the presentation of the contribution of the ultrasonic technology to the field of Endodontology. The ultrasounds, since the first effort of their appliance during the decade of 1950 until nowadays, receive an increasing acceptance, as far as their clinical contribution on Endodontology is concerned. Often, the need for successful treatment of pathological issues of the pulp and the periapical tissues demands the use of innovative material and methods during the endodontic treatment. A series of scientific articles from scientific journals and libraries, as well as a number of scientific books of international acknowledgement, have been studied for the completion of this survey. It has been found, that the ultrasounds apply not only on surgical, but also on non-surgical endodontic intervention. Nowadays, they are used in the field of Endodontology for the localization and access of calcified root canals, for the enhancement of the effectiveness of irrigation solutions, for the removal of intraradicular obstacles such as pulp stones intraradicular axes or file fragments, for apicectomy, for the condensation of gutta-percha, for the condensation of MTA and for the mechanical preparation of root canals. The last two applications are still under scientific evaluation. In conclusion, the technology of ultrasounds is a useful supplementary tool for clinical practices of Endodontology, on condition that they are used wisely and with the knowledge of their limitations and abilities.

Nela Mataj: The Risk Of Intraarterial Lidocaine As Local Anesthetic vs Lidocaine As An Antiarrhythmia

ABSTRACT

Objectives: Lidocaine is widely used as local anesthetic in both medicine and dentistry. It represents the gold standard drug and all the other new local anesthetic are compared with lidocaine. But it also is proven that when we administer anesthesia carelessly, patients experience situations like: numbness of tongue, dizziness and sometimes we hear children saying “I want to sleep” feeling. In the same field, but far away from dental practices, lidocaine is administered intravascular to suppress ventricular arrhythmia in emergency. This study has the aim to understand why it’s dangerous to inject a local anesthetic like lidocaine intravascular even though our colleagues use it in emergency.

Methods: During the work of this material, are used scientific articles (from Pub Med) and books from the library of the university to answer this interesting question and to learn more about lidocaine.

Results: The cartridge of lidocaine in local anesthetic does not have the same components as lidocaine drug used for arrhythmia. Artery and veins, where they are injected does not have the same histological construction therefore their compliant abilities differ. Alderete and his colleagues talk about a reverse carotid flow and the side effects of lidocaine in nervous and cardiovascular system. Also David Applebaum refers a case of asystole following the administration of conventional therapeutic dose of lidocaine in a patient.

Conclusion: Preventing the entrance of lidocaine intravascular can prevent its side effects. This can be done

by knowing the right technique of administering local anesthetic, injecting slowly and aspirating every 0.5 ml.

Key words: lidocaine, local anesthetic, anti-arrhythmia drug, side effects, administer, aspirate

Redjon Isai: Radiographic signs of trauma from occlusion at the level of the periodontal ligament and articulation structures

ABSTRACT

Objectives: The periodontal ligament faces even greater occlusal forces within a limit, presenting with trauma changes from occlusion locally to the tooth where it operates. Radiographic signs of occlusion trauma are evident at the level of the periodontal structures, the density of lamina dura, the width of the ligament space, and the morphology of the alveolar ridge. If this phenomenon passes into pathological aggravation due to occlusion trauma, radiographic signs of the latter appear on the interproximal surfaces as vertical bone loss. Subsequently, the whole pathology is followed at the level of articulation, to present there the distinct radiographic signs of occlusion trauma.

Methods: The study relied on radiographic evaluation of occlusion trauma on 100 randomly selected panoramic graphs, “2010-2019” time period. The graphs were grouped according to the number of teeth in the oral cavity and the presence or absence of occlusion.

Results: 36% are the group of patients with less than 20 teeth in the oral cavity with or without occlusion. 64% are patients with a minimum of 20 teeth in the oral cavity, but with occlusion due to prosthetic or implant replacements. The criterion of bone trabeculae parallelization and the local thickening of the periodontal ligament are the most commonly encountered in the value of 22%, followed by thickening of lamina dura in the value of 20%. The asymmetry of articular heads are found on 29% of radiographs. Occlusal trauma injuries are expressed at the

balance between the maxillary and mandibular occlusal plane, inducing alteration of intercuspal distance between the two sides, in 11% of subjects (p value ≤ 0.0237).

Pathological migration to the mesial direction was observed in 13% of teeth were subjected to occlusal trauma, usually due to extraction of first permanent molars, causing an increased slide from centric relation to centric occlusion.

Conclusion: Occlusion trauma from the level of dental structures extends its action to the level of temporomandibular articulation structures. The dentist is one of the causes of this pathology, failing to restore occlusion to the patient with missing teeth in the oral cavity. Trauma from occlusion can not initiate periodontitis as the bacteria are not responsible for its cause, but it can aggravate the condition of periodontal disease. Trauma from occlusion is a phenomenon which is associated with pathologic migration of tooth. The alteration of tooth position induces occlusal discrepancies. In most cases the migration is at mesial direction. The more effected teeth are second molars, because of extractions of first molars and premolars.

Key words: Trauma from occlusion, occlusal trauma, occlusal forces, radiographic sign, bone trabeculae parallelization, periodontium, lamina dura, bone loss, articulation, pathological migration, intercuspal distance, occlusal discrepancies, periodontitis

Klara Dešković: Differences in self reported oral health behavior between dental and medical students at the University of Zagreb, Croatia

ABSTRACT

Aim: The aim of this study was to analyze differences in self-reported oral health behavior between dental and medical students at the University of Zagreb, Croatia.

Methods: An anonymous online questionnaire regarding oral health behavior was distributed to all dental and medical school students at the University of Zagreb. The participation was voluntary and the research was approved by the Ethics Committee of School of Dental Medicine. Data were collected, and chi-squared test was used to ascertain differences between dental and medical students. $p < 0.05$ was considered to be statistically significant.

Results: A total of 142 dental students, and 187 medical students (response rate 22.7% and 8%, respectively) completed the questionnaire. Dental students were more likely to use dental floss on a daily basis, go to their dentists twice a year, and would go straight to the dentist if they suspected a cavity on a tooth ($p < 0.001$). Moreover, dental students brush two or more times during the day, and for 2 or more minutes more frequently than medical students ($p = 0.046$; $p = 0.021$). Medical students more often perceived their oral hygiene as average or bad ($p = 0.014$).

Conclusion: There were significant differences in oral health behavior between dental and medical students. Since medical students are future health professionals and health promoters, the School of Medicine should consider implementing more education on oral health.

Mentor: doc. dr. sc. Ana Badovinac, Department of Periodontology, School of Dental Medicine at the University of Zagreb

Enxhi Gjumsi: Gingival hypertrophy caused by orthodontic treatments: changes in oral flora (risk factor)

ABSTRACT

Objectives: The placement of orthodontic apparatus in the oral cavity, according to the literature, should influence the alteration of oral flora, especially the subgingival one. The purpose of the study is to evaluate the subgingival flora of patients with fixed orthodontic appliances, regardless of placement time.

Methods: In 3 cases of patients with fixed orthodontic appliances, a bacterial sample of the gingival sulcus was taken for laboratory examination. Patients were clinically evaluated for the presence or tendency, of having gingival hypertrophy.

Results: Results from the 3 cases included in the study, 1 of them came up with Streptococcus Anginosus positive, Doxycilin-sensitive. The tendency for gingival hypertrophy was maximal 3% to 1.5% respectively in each patient. In the patient with different oral flora, daily topical treatment with tetracycline, placed in the gingival sulcus, was applied.

Conclusion: Alteration of the oral flora with the placement of fixed orthodontic appliances is not a fully verifiable fact, as it indicates the patient's follow-up, at the time of placement of the apparatus and until removal after orthodontic treatment, depending on the 2-3-year period of treatment. The tendency for gingival hypertrophy is apparently high, versus the presence of fixed orthodontic apparatus.

Key words: orthodontic fixed apparatus, oral flora, bacterial sensitivity, antibiotic, bacterial culture suppression

Dimitrios Angelakis: Marketing for Dentists; Practice Promotion and Patient Targeting

ABSTRACT

Objective: Every dentist's ultimate goal is to promote their patients' health and well-being. Despite that, we should always remind ourselves that healthcare is just like any other product in today's market; it gets produced, advertised, promoted and, ultimately, sold. In order to provide services to the patients, every healthcare professional has to become known to the public, acquire and maintain a clientele and produce enough profit to be sustainable. Although today's reality, characterized by a plethora of information and the reign of social media, demands a solid marketing strategy for every practice, many practitioners neglect its importance and subsequently struggle in maintaining their viability.

Materials/Methods: A large amount of information from Greek and international books, articles and magazines was used for the purpose of this research. Some electronic libraries used include PubMed, Scopus etc.

Results: We present multiple effective ways of promoting a healthcare practice not only through advertising but also through appropriately communicating with patients. In addition we lay out a number of ways to expose a dental or regular practice online.

Conclusion: Effective marketing is an essential aspect of every healthcare practice. It is obvious that without it no practitioner could ever hope to appeal to more patients. Despite that, it is important to grasp the notion that marketing never was, is or will be the principle aim of the healthcare professional. Our code of ethics always puts, rightfully, the patient's health first and no dentist should

ever forget that. Marketing and economics are just the means that will help practitioners reach out to patients and try to help them improve their health and overall life.

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Key words: Dentist, Marketing, Patient Targeting, Dental Practice, Social Dentistry

Merilda Tarja: Geriatric patients: data on dental problems at this age

ABSTRACT

Objectives: Most of the geriatric patients suffer from at least one chronic disease. The aim of the study is the evaluation of the presence of dental problems at geriatric age and comparison of the frequency of lesion manifestations at pre-geriatric age.

Methods: In a sample of 73 ad-hoc presented patients, data on oral status of geriatric patients were collected over a period of 2 weeks, May 2019. The conditions for inclusion in the study were the age of the patient, 50 years and over. The mean age of geriatric age is 65 years. Patients were evaluated for age, number of teeth in the oral cavity, number of replaceable teeth, number of teeth with caries in the tooth crown, number of denture teeth in tooth root, number of teeth with gingival recession 3 mm or more.

Results: Almost 55% of the oral cavities were full of natural tooth, the fixed prosthesis was at the highest level at age 50-65 years. Independently of the gender, the average age of the patients involved was almost the same 67 years. Crown caries expressed the highest level of 14% at oral cavity at 66-90 years of age, caries of root amounted to 14% of oral cavity at 50-65 years of age. Xerostomia appears at 13% in age 50-65 years, and 20% in the age of 66-90. Gingival recession and loss of attachment expressed the highest values at male patients, with value over 3mm.

Conclusion: At pre-geriatric age it is more common the appearance of caries of crown than in the geriatric age. This fact is supported by the addition and agitation of xerostomia in oral cavity, which increases with age. The pre-geriatric age still has naturally occurring oral cavity

that can be used for fixed prosthetics.

Key words: geriatric patients, periodontal pathologies, caries

Sebastian-Roberto Matei: A comparative in-vitro study between different methods of root canals final irrigation: microbiological and SEM evaluation

ABSTRACT

Objectives: The main purpose of the endodontic treatment is to perform a proper shaping and cleaning of the root canal system. The aim of the present study was to assess the effect of the following final irrigants: QMix 2in1, sodium hypochlorite activated with ultrasounds and sodium hypochlorite activated with laser.

Methods: The study was conducted on 60 extracted monoradicular teeth, prepared using a rotary system, that were subjected to a wet sterilization process. Each tooth was inoculated with *E. faecalis* ATCC 29212. The root canals were irrigated 3 times with a buffer solution until 1 microlitre of the inoculum was obtained. The colonies were scored on a Petri dish counting the CFU (colony forming units) prior to the treatment and after the final irrigation. For the final irrigation of the endodontic canals, the teeth were divided into 3 categories, as follows: 1) 3 ml of Sodium Hypochlorite 5,25% (Cerkamed, Poland) for 1 minute, improved using the EndoUltra System (MicroMega, France); 2) 1 ml Qmix 2in1 (Dentsply, Tulsa, USA) for 1 minute using an irrigation needle; 3) 3 ml of Sodium Hypochlorite 5,25% (Cerkamed, Poland) for 1 minute, improved using the SiroLaser Blue (Dentply, Sirona, Switzerland). Twenty prepared teeth were assigned to each group. (n=20) In order to evaluate the specimens by Scanning Electron Microscopy (SEM) (magnification of 45x-2000X), 6 random specimens were selected from each category.

Results: The CFU (colony forming units) mean values were: for the first group-2,85, for the second group-20 and for

the third group= $2,35$. Statistically significant differences were detected.

Conclusion: Given the microbiological tests and SEM results, final irrigation protocol using sodium hypochlorite activated with SiroLaser Blue system is superior and more recommended.

Key words: endodontic irrigation, EndoUltra, Qmix, E. Faecalis, SEM, SiroLase Blue

Edouard Cristofari: Review on the importance of abutment connection in implant prognosis

ABSTRACT

Implant restoration is the meeting of different parts that are the implant, the pillar and the crown. This assembly creates a junction that gives a certain dynamic and mechanic. The goal of this review is to assess the importance of abutment connection in implant prognosis. A search was conducted on three data bases for articles less than 5 years. The geometry of the connector of the pillar plays a role in the harmonious transfer of occlusal forces to the bone, but also in the potential formation of an induced micro gap, due to the micro-movements between the pillar and the implant. The type of connectors, external or internal with or without rotational lock may have an impact on the resistance to fracture, the distribution of force and the marginal bone loss. To avoid bone remodeling, platform switching prosthetic pillars were developed. It contributes to the establishment of the biological width. The undersized of the pillar creates a horizontal shift that will allow on one hand, the soft tissues to adhere to the implant platform, and on the other hand to move the pillar/implant interface away from the bone. The abutment materials used will have an impact on the surrounding soft tissue, the adhesion of the peri implant tissue and on the amount of plaque. Depending on the chemical, physical and biological characteristics, the nature of the interactions that will be created will allow or not a biological attachment of quality. Finally, the restoration can be screw or cement retained. Both methods have their advantages and disadvantages. Screw retention provide retrievability but may compromise esthetics and present

screw fracture. Cement retained prostheses have tendency to induce peri implantitis especially when the margin is subgingivally but can compensate an implant position default.

Key words: abutment connection, bone loss, implant survival rate, biomaterial

Thomas Rozina: Should we change the toothbrush after the disease?

ABSTRACT

Introduction: There is still controversy in approach of patients after the upper respiratory tract infection to their oral hygiene and changing the potentially contaminated toothbrush in prevention of re-infection.

Aim: The aim of this study was to investigate the survival of upper respiratory tract pathogens on a toothbrush after successfully treated upper respiratory tract infection and to contribute to the evidence based general recommendation of practical dentists to the patients regarding toothbrush change after the disease.

Methods: Forty one patients with successfully treated upper respiratory tract disease were enrolled to this study. In all the patients the bacterial causative agent was proved using microbial culture (Streptococcus pyogenes – 27 samples, Staphylococcus aureus – 8 samples and 6 other bacterial pathogens were indicated) and all were administered with targeted local antibiotic therapy.

Results and discussion: Toothbrushes were collected 24 to 72 hours after the antibiotic therapy and cultured. The culture was aimed to recover pathogens causing the original disease – direct toothbrush imprint onto culture medium, toothbrush wash and wash after enrichment. 29 % of all toothbrushes were positive in culture of direct imprint of bristles onto agar medium. Toothbrush wash was positive in 36,5 % of patients and enriched culture in 46 % of the patients, indicating at least minimal residual contamination with pathogenic microflora.

Conclusion: Based on our study results, we can't decide if it is or it is not necessary to change the toothbrush after the

upper respiratory tract disease to prevent re-infection. For a clear statement we would need further researches.

Ethical committee statement: This study was approved by the Ethical committee of the Slovak Medical University in Bratislava, No. 02/2018.

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Keywords: toothbrush, microbe survival, respiratory disease