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IV ODONTO MEETING

X CEAJO

PROCEEDINGS

OF THE IV ODONTOMEETING / X CEAJO

UNIVERSIDADE ESTADUAL PAULISTA
"JÚLIO DE MESQUITA FILHO"
Instituto de Ciência e Tecnologia
Campus de São José dos Campos

2023

Innovation Art Care

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Words from the President

The IV Odontomeeting, initially scheduled for 2021 but postponed due to the pandemic and ICT renovations, finally took place from October 18 to 20, 2023. The congress welcomed approximately 500 undergraduate and postgraduate students, as well as professionals from the Vale do Paraíba region. The event returned with the theme "Innovation, Art, and Care," carefully chosen to highlight the necessary interconnection between science and humanism during these ongoing challenging times. This theme permeated the entire schedule of lectures and cultural activities throughout the event.

In the 12 months leading up to the event, 10 pre-events were organized, featuring lectures from diverse areas, cultural activities, and philanthropic community actions—a significant effort to revive collective activities in the post-pandemic scenario.

During the event, there were 31 speakers from various fields of dentistry, in addition to 109 scientific paper presentations across 9 categories. Now, we have the great opportunity to have the abstracts published in this special supplement of Brazilian Dental Science.

The meeting garnered support from various sponsors, fostering a closer relationship between the university and businesses. Among the attendees were dentists working for the Municipal Government of São José dos Campos, as part of a partnership between the University and the public service.

Besides the scientific program, cultural activities took center stage, featuring music, dance, theater, exhibitions, and a book launch—an endeavor to highlight the association between art and science. It was heartening to see the ICT community come together for a common goal and celebration. I express my gratitude to everyone who participated in this endeavor and wish success to the V Odontomeeting! The countdown has already begun!

Prof. Dr. Ana Lia Anbinder

President of the IV OdontoMeeting / X CEAJO

TECHNICAL DATA

- **EVENT:** IV OdontoMeeting / X CEAJO
- **DATA:** October 18 – 20, 2023
- **LOCAL:** INSTITUTO DE CIÊNCIA E TECNOLOGIA (ICT-UNESP) – Av. Eng. Francisco José Longo, 777 – Jardim São Dimas – São José dos Campos/SP
- **PUBLICATION DATA:** ISSN 2178-6011

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Undergraduate – Basic Sciences

Básicas Graduação

BG

Innovation
Art
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BG01

Biomechanical analysis of 45S5® bioglass functionalized with 10% teriparatide in bone repair in critical defects

Silva LAS*, Lima VAB, Souto JCRA, Campos TMB, de Vasconcellos LMR

The increase in the rate of osseometabolic diseases has increased the search for techniques to improve the bone repair process. In bioengineering, the use of bioglass 45S5® is promising due to its excellent bone tissue formation properties in vivo and osteogenic capacity in vitro. Systemically, Teriparatide (PTHrh 1-34), an analogue of parathormone, acts as an anabolic agent, improving bone renewal. The aim of this study was to evaluate the influence of 45S5® bioglass particles functionalized with teriparatide on the biomechanics of bone tissue in vivo. The bioglass was obtained using the methodology of Spirandeli et al. (2020) and functionalized with the drug teriparatide at 10% via the sonochemical route. Twenty Wistar rats were divided into two groups: bilateral ovariectomy (OVX) and simulated ovariectomy surgery (Sham). After 60 days, 3 mm critical defects were made in the right (clot) and left tibias (filled with bio-glass [BG] and bioglass associated with 10% teriparatide [BGT]). After 2 weeks, the animals were euthanized and the specimens were subjected to the three-point bending strength test. The data was statistically analyzed using the one-factor ANOVA test ($p<0.05$). The results showed that the defects filled with BGT in ovariectomized rats exhibited greater maximum strength than the other groups, differing statistically ($p<0.05$). It was concluded that the use of bioglass functionalized with teriparatide could be a valid alternative for the treatment of osteoporotic bones.

Keywords: Glass; Teriparatide; Rats

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BG02

Does jabuticaba's hydroalcoholic extract have antimicrobial action against multiresistant clinical strains of *Acinetobacter baumannii*?

Dias SO*, Menezes RT, Cruz GM, Carvalho LS, Pereira TC, Oliveira LD

The bacterium Acinetobacter baumannii is responsible for great concern within ICU's (Intensive Care Units), as it is capable of resisting the action of several antibiotics, making it necessary to search for new treatment alternatives. Herbal medicines have demonstrated effectiveness in combating these multiresistant microorganisms and the jabuticaba's bark (Myrciaria cauliflora) has levels of bioactive compounds that provide antioxidant, anti-inflammatory, and antibacterial action. Therefore, the objective of this study was to evaluate the antibacterial action of hydroalcoholic extract of jabuticaba's bark on multidrug resistant clinical strains and a standard stran (ATCC 19606) of A. baumannii. After obtaining the hydroalcoholic extract from the jabuticaba's bark, the soluble solids content was quantified. The Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) were determined by the broth microdilution method (CLSI M7-A). The results were statistically analyzed by ANOVA and Tukey's test ($p \leq 0.05$). The soluble solids content determined was 2.22%. The extract promoted MIC and MBC of 0.5% for all A. baumannii strains tested. We can conclude that the hydroalcoholic extract of jabuticaba can be a great alternative in the therapy of infections caused by A. baumannii.

Keywords: Acinetobacter; Products with Antimicrobial Action; Phytotherapy

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BG03

Synergic action of green propolis and cinnamon extracts on *Acinetobacter baumannii*

Martins KMC*, Carvalho LS, Meccatti VM, Menezes RT, Cruz GM, Oliveira LD

The study aims to evaluate the antibacterial potential of propolis and cinnamon extracts on planktonic cultures of clinical strain and pattern of multidrug-resistant *A. baumannii* through the method of microdilution in broth, the possible synergism between the extracts plants and the antibacterial potential that such a combination presents on ATCC strains and clinic of *A. baumannii*. The hydroethanolic extract of *Cinnamomum verum* (cinnamon) was prepared from cinnamon bark and the hydroethanolic extract of *Baccharis dracunculifolia* (green propolis) was prepared from raw propolis. The method of broth microdilution was used to determine the Minimum Inhibitory Concentration (MIC) of the extracts. To evaluate the combination, the "checkboard" technique was used. The fractional inhibitory concentration (FIC) index was adopted for classify synergistic (≤ 0.5), additive (>0.5 and ≤1.0), indifferent (>1.0 and ≤4.0) or antagonistic (4.0). It was not possible to perform a visual reading to determine the MIC of plant extracts, as they have intense coloring. For all strains, the extracts showed Minimum Bactericidal Concentration (MBC). Cinnamon extract presented MBC from 0.22% to 0.44% and propolis extract from 0.50% to 1.00%. A combination of cinnamon and propolis extracts showed additive values and a synergistic combination was found for clinical strain. Plant extracts have synergistic interaction and such a combination proves to be potent for the development of new dental products.

Keywords: Acinetobacter baumannii; Phytotherapy; Cinnamomum verum; Propolis

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BG04

Antibacterial action of the hydroalcoholic extract of *Cinnamomum verum* on multiresistant *Pseudomonas aeruginosa* species

Oliveira MV*, Menezes RT, Cruz GM, Carvalho LS, Meccatti VM, Oliveira LD

Pseudomonas aeruginosa is an opportunistic bacterium that is generally related to nosocomial infections that are difficult to treat and have a high mortality rate. The bacterium's mutagenic phenomena confer resistance to the main groups of antimicrobial agents used clinically, including beta-lactamase inhibitors, portraying a challenging scenario in the fight against infections caused by this microorganism. The aim of this study was to evaluate the antibacterial action of the hydroalcoholic extract of cinnamon (Cinnamomum verum) on multidrug-resistant clinical strains of P. aeruginosa and a standard strain (ATCC 15442). After obtaining the hydroalcoholic extract of jaboticaba peel, the soluble solids content was quantified. The Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) were determined using the broth microdilution method (CLSI M7-A6). The soluble solids content of the extract was 3.59 %. The extract promoted CBM of 0.8% to 0.1% for the P. aeruginosa strains tested. The results suggest that the hydroalcoholic extract of cinnamon is a promising alternative for combating infections caused by multidrug-resistant strains of P. aeruginosa.

Keywords: Pseudomonas aeruginosa; Cinnamomum verum; Minimum Inhibitory Concentration

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BG05

Antibacterial effect of hydroalcoholic pomegranate peel extract against Acinetobacter baumannii

Rocha NS*, Menezes RT, Carvalho LS, Cruz GM, Oliveira LD

Acinetobacter baumannii is an opportunistic pathogen that most often affects immunocompromised patients and is resistant to conventional antibiotics. Due to this resistance, the search for new therapeutic alternatives is necessary and phytotherapy has been evaluated for this purpose. Pomegranate (Punica granatum) has compounds with anti-inflammatory and antimicrobial properties and may be a promising option against these infections. Therefore, this work evaluated the antibacterial action of the hydroalcoholic extract of pomegranate peel (P. granatum) against multi-resistant strains and a standard strain (ATCC 19606) of A. baumannii. After obtaining the extract, the soluble solids content was quantified. The Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) were determined by the broth microdilution method (CLSI M7-A6). The soluble solids content determined was 6.02%. The extract promoted MIC and MBC of 1.5% to 0.7% for the A. baumannii strains tested. Therefore, we can conclude that the hydroalcoholic extract of pomegranate peel can be a great alternative in the therapy of infections caused by A. baumannii.

Keywords: Anti-Bacterial Agents; Punica granatum; Phytotherapy

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BG06

Influence of PLA/PEG polymeric membranes incorporated with 45S5 bioglass onosteoblastic differentiation

Oliveira JA*, Souza JR, Vasconcellos LMR, Kukulka EC, Campos TMB, Borges ALS.

There is a continuos quest for new biomaterials that can serve as substitutes for autogenous grafts. Polylactic acid (PLA) is a biodegradable, biocompatible biopolymer that can be utilized as a scaffold for cell growth, but it is hydrophobic. This drawback can be minimized with its association with polyethylene glycol (PEG), a hydrophilic polymer. However, both polymers are inert and the incorporation of 45S5 bioglass particles can render the membrane bioactive. The objective of this study was to evaluate the influence of polymeric membranes incorporated with bioglass on osteoblastic differentiation. The 45S5 bioglass was added to the PLA/PEG solution, resulting in two groups: PLA/PEG (control) and PLA/PEG-BV/45S5. The polymers were produced by the electrospinning method and, after production, the quantitative and qualitative analysis of the chemical elements was verified using the energy dispersive spectrometer (EDS). In the in vitro study, mesenchymal cells were extracted from the bone marrow of rat femurs and the total protein content and alkaline phosphatase (ALP) activity were assesed. The EDS analysis showed the characteristic chemical elements for bioglass synthesis, additionally demonstrating the presence of the chlorine element, proving the obtaining of a chlorinated bioglass. Concerning the analysis of total protein and alkaline phosphatase, the results indicated that the biomaterial facilitated cellular activity and differentiation. In conclusion, this study suggests that these membranes are promising because they allowed cellular activity and the formation of osteoblastic enzymes.

Keywords: bone regeneration; biocompatible materials; bioglass; polymeric membrane; cell differentiation

BG07

In vitro evaluation of the cytotoxicity of medicinal oils based on phytocanabinoids – pilot study

Yamada GAS*, Oliveira GN, Lupp JS, Souza BSN, Vasconcellos LMR, Bianchi- de Moraes M

This study evaluated the cytotoxicity of medicinal oils based on phytocannabinoids THC, CBD and CBG on the *in vitro* cellular activity of human fibroblasts. The medicinal oils used are made from Cannabis Sativa extracts, diluted in extra virgin olive oil, being of specific planting and production, provided by the APEPI association. Initially, this pilot study was carried out with pure samples of these oils, testing their density and permeability in the cellular environment. There were used human fibroblasts of the HFF1 lineage, grown in cell culture flasks. The cell development was evaluated by inverted phase microscopy until they reached 80% confluence. After that, cell plating was performed and then the procedures for pellet formation. Fibroblasts were resuspended and counted in the Newbauer chamber; 10.000 cells/well were subsequently plated in 96-well plates, values established by the standard count, containing the following oil samples: a) Doctor: CBD 33mg/ml, THC 2.1mg/ml; b) Purple Wreck: CBD 0.8mg/ml, THC 8mg/ml; c) Shanti: CBD 8 a 10mg/ml e THC 6mg/ml; d) CBG: CBG 23mg/ml, CBD 0.8mg/ml e THC 0.8mg/ml. The control group was cells without treatment. The plates were incubated and after 72 hours, the quantitative analysis of viable cells (MTT) test was performed. For the evaluation of the results, the data obtained were analyzed using the GraphPad software, adopting a statistical test with a significance level of 5% ($p \leq 0.05$). The tests showed promise and future studies will favor its application in several dental specialties.

Keywords: cannabis; cannabinoids; cytotoxicity tests, immunologic; fibroblasts; oils, volatile

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BG08

Synergistic antibiofilm action of the combination of plant extracts on *Candida dubliniensis*

Moura L*, Carvalho LS, Meccatti VM, Menezes RT, Ramos LP, Oliveira LD

To evaluate the potential of *Curcuma longa* and *Rosmarinus officinalis* L. extracts combined against the planktonic form and biofilm of *Candida dubliniensis*. Initially, the soluble solids content of the respective extracts was calculated. To determine the minimum inhibitory concentrations (MIC) of the extracts, the broth microdilution method was applied. For synergistic analysis, the "checkerboard" technique was used. RPMI medium and rosemary extract were added to microplates, which were serially diluted. Then the wells received the saffron extract previously diluted in microtubes and the inoculum (1x106 cells/mL), with saline being the control. This was followed by incubation (37°C/48h) and application of the ICIF fractional inhibitory concentration index. For biofilm tests, 200 µL/mL of the inoculum suspension (1x107 cells/mL) were added to microplates (37°C/90 min). Then, YNB broth was added and incubation continued for 48h. The combined extracts were applied for 30 min. Broth and nystatin were the controls, with n=10. Then, MTT was added (37°C/1h) and after its removal, DMSO was added with incubation for 10 min to read the optical densities (570 nm). Two additive combinations were found for *Candida dubliniensis*. Saffron and rosemary extracts have an inhibitory action against the growth and development of *C. dubliniensis* when combined, being viable alternatives in the fight against multi-resistant microorganisms.

Keywords: Curcuma longa; *Rosmarinus officinalis*; Antifungal

BG09

Gellan gum as a carrier system for photosensitizer in photodynamic therapy against fungal infections in *Galleria mellonella*

Morissugui EY*, Figueiredo-Godoi LMA, Mendes GV, Junqueira JC

Carrier systems enabling the continuous release of compounds into tissues have been utilized to optimize therapies. Gellan gum (GG) is a natural exopolysaccharide with the ability to form firm gels, allowing the encapsulation of compounds, potentially serving as a carrier system for photosensitizers in antimicrobial photodynamic therapy (aPDT). Thus, the objective of our study was to assess GG as a carrier system for the photosensitizer Methylene Blue (MB) in aPDT on *Candida albicans*-infected burn wounds in the *Galleria mellonella* model. Burn wounds were induced on the dorsal region of the larvae and subsequently infected with a suspension of *C. albicans* (109 cells/mL). After 30 minutes, the larvae were treated with aPDT using MB incorporated into GG (0.6% and 1%) and irradiated with a 660 nm LED. Results were evaluated through the survival curve and larval health index. Data obtained from the survival curve and health index in *G. mellonella* were statistically analyzed ($p \leq 0.05$). The group treated with aPDT mediated by MB in GG at 0.6% and 1% showed an increased larval survival of 50% and 40%, respectively, compared to the untreated infected group ($p=0.0497$) ($p=0.1245$). It was concluded that aPDT mediated by MB incorporated into GG at concentrations of 0.6% and 1% was effective against superficial fungal infection in *G. mellonella* burn wounds.

Keywords: Candida albicans; Burns; Photodynamic Therapy; Galleria mellonella

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BG10

Effect of final cleaning protocols on reduction of microorganisms and byproducts in root canals.

Ward, RAC*, Fiamini BK, Santos AC, Corazza BJM, Orlando MMT, Valera M.C

The aim of this study was to evaluate the antimicrobial action and reduction of lipopolysaccharides (LPS) after biomechanical preparation and final irrigation of root canals through different protocols for agitating the irrigating solution. Thirty-six mesial roots of lower molars were used, which were sectioned, standardized, and randomly divided into three groups (n=12) according to the final irrigation protocol: G1: conventional irrigation (CI), G2: passive ultrasonic irrigation (PUI), and G3: mechanical activation with Easy Clean (ECL). Specimens were contaminated with *Escherichia coli* and *Enterococcus faecalis* and instrumented with Reciproc R25 files, combined with irrigation of 15 ml of aseptic saline solution, followed by final cleaning protocols. Canal contents were collected after contamination to obtain initial values (S1); after instrumentation (S2); after final cleaning protocols (S3); and 7 days after final cleaning (S4). Analysis of antimicrobial activity was performed by culture (CFU/ml) and quantification of LPS (EU/mL) using the Limulus Amebocyte Lysate - LAL test. Data obtained were evaluated through statistical tests with a significance level of 5%. Reduction in microbial load and LPS was observed similarly in all groups. S1 differed from S2 and S3, but there were no differences between S2 and S3. The PUI group showed greater bacterial and LPS reduction. Thus, it is concluded that the presented protocols are efficient for bacterial and endotoxin reduction in root canals.

Keywords: Intracanal irrigation; Endodontic infection; Passive Ultrasonic Irrigation; Easyclean

BG11

Antifungal action of two plant extracts *Candida dubliniensis*

Maria FAP*, Ellen RLB, Lucas PR, Luciane DO

Candida dubliniensis is an opportunistic fungus member of the C species group. non- albicans. This yeast has presented an increased incidence in the isolations of candidemia in immunosuppressed patients. It is also observed high resistance of the microorganism to azole antifungals. Therefore, new studies are fundamental, for example, the analysis of the antifungal action of herbal extracts. The objective of this study was to evaluate the antifungal action of Quillaja saponária and Hamamelis virginiana extract on planktonic cultures of C. dubliniensis. Glycolic extracts of Quillaja saponária and Hamamelis virginiana, were acquired from the company Distriol®. The tests were performed in planktonic cultures of Candida dubliniensis (ATCCMYA646), by means of the broth microdilution technique, M7-A6/CLSI protocol, using standardized suspensions of 10 5 CFU/ml. For the determination of the minimum inhibitory concentration (MIC), the turbidity level of the 96-well microplate wells; while the minimum fungicide concentration (MFC) was obtained from the sowing of aliquots of the MIC in Sabouraud Agar with incubation of 48h. The glycolic extracts of Quillaja saponária and Hamamelis virginiana presented CFM of 6.25 mg/ml and 25 mg/ml, respectively. The MIC of Q extract. saponaria was 6.25 mg/ml, in the H.virginiana group it was not possible to determine the MIC due to the turbidity of the extract. In conclusion, the Quillaja saponaria extract exhibits superior antifungal properties to Hamamelis extract when compared, however, both showed positive results showing action against the pathogen C.dubliniensis.

Keywords: Candida; Antifungal Agents; Plant extracts

BG12

Antifungal activity of gold nanoparticles against *Candida non-albicans*

Costa MFSF*, Carmo PHF, Lage ACP, JunqueiraJC

The treatment of *Candida* infections faces several challenges related to the limited arsenal of antifungals, their toxicity, and high cost. These limitations have stimulated the search for compounds with antifungal activity and carrier systems, such as gold nanoparticles (AuNp). Although the activity of AuNp against *C. albicans* was studied, the antifungal effects of AuNp against *Candida* non-*albicans* are poorly understood. In this context, this study evaluated the antifungal effects of AuNp on planktonic cells and biofilms of *Candida* non-*albicans* species. AuNp were synthesized and characterized at Fiocruz Minas Gerais. The reference strains of *Candida tropicalis* ATCC 13803, *C. krusei* ATCC 6858 and *C. parapsilosis* ATCC 90019 were used. The effects of AuNp against planktonic cells of *Candida* spp. were evaluated through minimum inhibitory concentration (MIC), minimum fungicidal concentration (MFC), and time-kill curve assays. The antibiofilm activity of AuNp was also determined (CFU/mL) against biofilms of *C. tropicalis*, *C. krusei*, and *C. parapsilosis*. MIC and MFC values ranged from 1.56 to 6.25 µg/mL for all strains studied. The MFC/MIC ratio was 1 and 2, suggesting fungicidal activity of AuNp against *C. tropicalis*, *C. krusei*, and *C. parapsilosis*. Treatment with AuNp at 1x MIC completely inhibited the growth of *C. krusei at* 8 hours. For *C. parapsilosis* and *C. tropicalis*, complete inhibition was observed after 24 and 48 hours of treatment, respectively. Treatment with AuNp reduced the viability of *C. krusei* biofilm at 5x MIC, while the reduction was observed at 1x MIC for *C. parapsilosis* and *C. tropicalis*. Altogether, we demonstrated the antifungal activity of AuNp against planktonic cells and biofilms of *C. krusei*, *C. parapsilosis*, and *C. tropicalis*, reinforcing their potential use against *Candida* non-*albicans* strains.

Keywords: Inorganic nanoparticles; Candida krusei; Candida parapsilosis; *Candida tropicalis*; Antifungal agents.

BG13

Root canal microbial profile in mouse teeth subjected to radiotherapy or not

Carvalho V; Glagliardi CF, Guerrero GG, Minhoto GB, Orlando MMT, Valera MC

In the treatment of head and neck cancer, radiotherapy (RT) can result in alterations in the oral system, such as the rapid evolution of the dental cavity, resulting in teeth necrosis and the development of apical periodontitis (AP). Nowadays, there are no studies about microbial alterations in the root canals after undergoing RT. Therefore, this research proposes to evaluate the microbial profile in the root canals before and after the biomechanical preparation in the root canals of mouse teeth after undergoing RT. 20 Wistar male mice were divided into two groups (n=10): PA-TE: AP induction and endodontic therapy (ET) and RT-PA-TE: undergoing RT, AP induction and ET. The RT group was subjected to a 15 Gy radiation dose on the first day of the research. The AP induction occurred on day 7 by the exposure of the pulp chamber of the first molars in the oral environment for 21 days. The components inside the root canals were collected after the crown opening (S1) and after the biomechanical preparation of the root canals (S2), submitted to cell culture analysis (UFC/mL) by the use of selective support materials for microorganisms facultative anaerobes, aerobes, strict anaerobes, yeast, enterococcus species, streptococcus, enterobacterial and staphylococci. No statistical difference could be detected in the bacterial load among analyzed groups and the microbiota was mainly composed of facultative and strict anaerobes and streptococcus microorganisms. There was a decrease in cultivable bacteria in all groups after S2. The composition and load of bacteria in the root canals in rats were similar before and after RT.

Keywords: Radiotherapy; Wistar mouse; Endodontic inflammation; Pulp chamber exposure

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BG14

Influence of calcium silicate-based bone cement incorporated with carbon nanotubes (cnt) on in vivo bone repair

Lupp JS*, Silva LAS, Silva LAA, Ribas RG, Campos TMB, de Vasconcellos LMR.

Calcium silicate cements can be employed in treatments for bone repair due to their bioactivity, and their enhancement is crucial to meet the requirements of tissue engineering. The objective of this study was to assess the influence of calcium silicate cement incorporated with carbon nanotubes (CNT) on the viability of mesenchymal cells and on the bone neoformation of critical defects in rat tibias. Three samples based on calcium silicate cements were produced, comprising a control group and two groups supplemented with CNT nanoparticles at varying concentrations. The obtained samples had their surface topography analyzed through Field-Emission Scanning Electron Microscopy (FE-SEM), and subsequently underwent in vitro cell viability testing. Furthermore, an in vivo study was conducted using Wistar rats subjected to surgery to create a critical defect in their tibias, which were filled with the aforementioned groups as well as a clot-only group. After three weeks, euthanasia was performed, and the specimens underwent histological and histomorphometric analysis. The obtained data were statistically examined using a one-way ANOVA test, with a significance level set at 5%. The in vitro assay revealed that none of the cements were cytotoxic. In the analysis of bone neoformation, the experimental groups demonstrated higher values, differing statistically from the clot-only group ($p<0.05$). Therefore, all experimental groups exhibited promise for biomaterial engineering and osseous tissue regeneration.

Keywords: Bone Remodeling, Carbon nanotubes, Silicate Cement, Microcytotoxicity Test, Biocompatible Materials.

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BG15

Antifungal activity of gold nanoparticles against *Candida* non-*albicans*

Costa, MFSF; Carmo PHF; Lage ACP; Junqueira, JC.

The treatment of *Candida* infections faces several challenges related to the limited arsenal of antifungals, their toxicity, and high cost. These limitations have stimulated the search for compounds with antifungal activity and carrier systems, such as gold nanoparticles (AuNp). Although the activity of AuNp against *C. albicans* was studied, the antifungal effects of AuNp against *Candida* non-*albicans* are poorly understood. In this context, this study evaluated the antifungal effects of AuNp on planktonic cells and biofilms of *Candida* non-*albicans* species. AuNp were synthesized and characterized at Fiocruz Minas Gerais. The reference strains of *Candida tropicalis* ATCC 13803, *C. krusei* ATCC 6858 and *C. parapsilosis* ATCC 90019 were used. The effects of AuNp against planktonic cells of *Candida* spp. were evaluated through minimum inhibitory concentration (MIC), minimum fungicidal concentration (MFC), and time-kill curve assays. The antibiofilm activity of AuNp was also determined (CFU/mL) against biofilms of *C. tropicalis*, *C. krusei*, and *C. parapsilosis*. MIC and MFC values ranged from 1.56 to 6.25 µg/mL for all strains studied. The MFC/MIC ratio was 1 and 2, suggesting fungicidal activity of AuNp against *C. tropicalis*, *C. krusei*, and *C. parapsilosis*. Treatment with AuNp at 1x MIC completely inhibited the growth of *C. krusei* at 8 hours. For *C. parapsilosis* and *C. tropicalis*, complete inhibition was observed after 24 and 48 hours of treatment, respectively. Treatment with AuNp reduced the viability of *C. krusei* biofilm at 5x MIC, while the reduction was observed at 1x MIC for *C. parapsilosis* and *C. tropicalis*. Altogether, we demonstrated the antifungal activity of AuNp against planktonic cells and biofilms of *C. krusei*, *C. parapsilosis*, and *C. tropicalis*, reinforcing their potential use against *Candida* non-*albicans* strains.

Keywords: Inorganic nanoparticles, *Candida krusei*, *Candida parapsilosis, Candida tropicalis*, Antifungal agents.

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BG16

Drug delivery in hydrogel incorporated with bioglass functionalized with raloxifene on cell activity in vitro

Oliveira EFS*, Vasconcellos LMR, Souto JCRA, Silva LAS, Campos TMB, Sobrinho FS

In this present work was investigated the influence of the drug delivery system in injectable hydrogel incorporated with bioglass particles functionalized with raloxifene in the activity of mesenchymal cells. Initially, the synthesis of the bioglass 45S5 was made, followed by its functionalization with the drug through the ultrasonic sonochemical technique and its incorporation with the hydrogel. The characterization of the biomaterial was made by means of the scanning electron microscope (SEM), energy-dispersive analysis and wettability analysis. In vitro tests were performed in the following experimental groups: a) hydrogel incorporated with bioglass; b) hydrogel incorporated with bioglass functionalized with raloxifene; c) control group (well with only cells). Mesenchymal cells obtained from ovariectomized or Sham ovariectomized rat femurs were isolated and plated with the different hydrogels aiming to evaluate the influence of different biomaterials on the cell viability in vitro. The tests performed were the cell viability test (MTT), protein content determination, ALP assays and the direct fluorescence test. Quantitative data were submitted to the Anova two factors with a significance level of 5%. The results of in vitro tests showed that all hydrogels presented osteogenic activity and allowed cell differentiation, although without statistically significant differences between the groups (p>0,05). It was concluded that all hydrogels are promising to future applications in tissue engineering.

Keywords: hydrogels; Biocompatible Materials; Raloxifene Hydrochloride.

BG17

Heat-killed *Limosilactobacillus reuteri* ATCC PTA 6475 prevents ovariectomy-induced bone loss in mice

Battistelli LS*, Ribeiro JL, Santos TA, Garcia MT, Moraes RM, Anbinder AL

The aim was to evaluate the impact of *L. reuteri* (ATCC PTA 6475) and its heat-killed form (postbiotic) on ovariectomy (ovx)-induced bone loss. Adult female mice were randomly divided into four groups: group C - control (sham); group OVX-C - Ovx; group OVX-POS - Ovx + postbiotic; group OVX-PRO Ovx + probiotic. Live *L. reuteri* or the postbiotic ($1.3x10^9$ CFU/day) was administered by gavage. Following heat treatment, bacterial morphology was assessed by scanning electron microscopy (SEM). The treatment started seven days after Ovx and continued for 28 days. The animals were euthanized at the end of the treatment period. Bone microarchitecture and ileum *Occludin* and pro-inflammatory cytokines gene expression were evaluated by computed microtomography and qPCR techniques, respectively. The Ovx groups had lower percentage of bone volume (BV/TV) and number of bone trabeculae as well as greater total porosity compared to the control group. Treatment with live and heat-killed *L. reuteri* resulted in higher BV/TV and trabecular thickness than the Ovx group. The heat treatment caused some cell surface disruptions, but its structure resembled that of the live probiotic in SEM analysis. There were no statistical differences in *Occludin*, *Il-6* and *Tnf-α* gene expression. Both viable and heat-killed *L. reuteri* prevented bone loss on ovariectomized mice, independently of intestinal *Occludin*, *Il-6* and *Tnf-α* gene expression.

Keywords: ovariectomy; bone resorption**;** *Limosilactobacillus reuteri;* mice, congenic.

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BG18

Root canal microbial profile in mouse teeth subjected to radiotherapy or not

Carvalho, V. Glagliardi, CF. Guerrero, GG. Minhoto, GB. Orlando, MMT, Valera, MC.

In the treatment of head and neck cancer, the radiotherapy (RT) can result in alterations in the oral system, as the rapid evolution of dental cavity, resulting in teeth necrosis and development of apical periodontitis (AP). Nowadays, there are no studies about microbial alterations in the root canals after undergoing RT. Therefore, this research proposes to evaluate the microbial profile in the root canals before and after the biomechanical preparation in root canals of mouse teeth after undergoing RT. 20 Wistar male mice were divided in two groups (n = 10): PA-TE: AP induction and endodontic therapy (ET) and RT-PA-TE: undergoing RT, AP induction and ET. The RT group was subjected to 15 Gy radiation dose on the first day of the research. The AP induction occurred on day 7 by the exposure of the pulp chamber of the first molars in the oral environment for 21 days. The components inside the root canals were collected after the crown opening (S1) and after the biomechanical preparation of the root canals (S2), submitted to cell culture analysis (UFC/mL) by the use of selective support materials for microorganisms facultative anaerobes, aerobes, strict anaerobes, yeast, enterococcus species, streptococcus, enterobacterial and staphylococci. No statistical difference could be detected in the bacterial load among analyzed groups and the microbiota was mainly composed of facultative and strict anaerobes and streptococcus microorganisms. There was a decrease in cultivable bacterias in all groups after S2. The composition and load of bacteria in the root canals in rats was similar before and after RT.

Keywords: Radiotherapy, Wistar mouse, Endodontic inflammation, Pulp chamber exposure.

Post-Graduate – Basic Sciences

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BPG01

Antifungal action of hydroalcoholic extract of *O. vulgare* on species of the genus *Candida* spp.

Cruz GM*, Menezes RT, Ribeiro ALM, Carvalho LS, Oliveira LD.

Candida spp. it is a commensal yeast that usually affects immunocompromised patients, leading to a systemic infection with a high mortality rate. Mutagenic phenomena contribute to a high percentage of resistance to antifungals that already have on the market, and alternatives are needed to combat these infections. The WHO (World Health Organization) has been notifying the benefits of phytotherapy to combat several resistant microorganisms. Therefore, this study aimed to evaluate the antifungal action of the hydroalcoholic extract of oregano (*Origanum vulgare*) on planktonic cultures and monotypic biofilms of *Candida albicans* (ATCC 18804) and *Candida tropicalis* (ATCC 13803). To obtain the hydroalcoholic extract, the amount of 30 grams of plant material was placed in 150 mL of water and 150 mL of absolute ethyl alcohol for 48 hours. The Minimum Inhibitory Concentration (MIC) and the Minimum Fungicide Concentration (CFM) were determined by the broth microdilution method (CLSI M7-A6). The results were statistically analyzed by ANOVA and Tukey's test ($p \leq 0.05$). The soluble solids content of the extract was 3.15%. The extract promoted MIC and CFM of 0.19% for *C. albicans* and 0.78% for *C. tropicalis*. The viability reduction in *C. albicans* biofilms reached 73% and for *C. tropicalis* 59.5%. The results showed that the hydroalcoholic extract of *O. vulgare* can be an alternative to be explored against monotypic biofilms of *Candida* spp.

Keywords: Phytotherapy; Biofilm; *Candida albicans*; *Candida tropicalis*.

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BPG02

Antibacterial action, synergism and cytotoxicity of *Cinnamomum verum* and propolis extracts against *Pseudomonas aeruginosa* strains

Carvalho LS*, Meccatti VM, Menezes RT, Cruz GM, Hasna AA, Oliveira LD

The aim of this study was to evaluate the chemical composition, cytotoxicity and synergism of hydroethanolic extracts of *Cinnamomum verum* and green propolis against ATCC and clinical strains of multi-drug resistant *Pseudomonas aeruginosa*. Phytochemical analysis was performed using high performance liquid chromatography (HPLC). The broth microdilution method was used to determine the minimum inhibitory concentration (MIC) and minimum microbicidal concentration (MMC) of the extracts. Then, the checkerboard technique and fractional inhibitory concentration index (FICI) were used to evaluate the extracts combinations. The cytotoxicity of the extract was evaluated using the MTT assay in human keratinocytes (HaCat). In this study, cinnamic aldehyde was identified in *C. verum* extract, caffeic acid, p-coumaric acid and kaempferol were found in propolis extract. It was not possible to perform a visual reading to determine the MIC values since the extracts have intense colors. CMM values of *C. verum* and propolis were 0.05 and 0.12 % for the ATCC strain, respectively, and 0.11 and 0.25 % for the clinical strain, respectively. The combination of extracts showed additive and synergistic effects as found by FICI. The extracts do not show cytotoxicity in HaCat. The compound extracts with biological activity reported in the literature were able to eliminate bacteria, solely and combined, as well as not showing cytotoxicity on HaCaT, thus, *C. verum* and propolis extracts are promising candidates for future antiseptic formulations to combat microbial resistance.

Keywords: *Cinnamomum verum;* propolis; *Pseudomonas aeruginosa; phytotherapy.*

BPG03

Antimicrobial activity of photodynamic therapy associated with curcumin on microcosm biofilm of prosthetic stomatitis

Fraga AS, Carmo PHF, Junqueira JC.

The aim of this study was to evaluate the antimicrobial activity of curcumin as a photosensitizer for photodynamic therapy (PDT) on prosthetic stomatitis biofilm microcosms. Material and method. The experimental protocol for collecting microcosm biofilm samples was approved by the Ethics Committee for Research with Human Beings at ICT/Unesp under number 5.827755. The antimicrobial activity of curcumin on microcosm biofilm was determined by cell viability. Results. There was microbial growth in all the culture media used. PDT reduced 2.1 log10 of growth in non-selective media, 1.6 log10 of *Streptococcus*, 2.0 log10 of *Streptococcus mutans*, 1.5 log10 of *Lactobacillus,* 3.7 log10 of *Staphylococcus* and 1.1 log10 of yeasts. Conclusion. PDT associated with curcumin was able to reduce the number of total microorganisms, streptococci, staphylococci, lactobacilli and yeasts in the microcosm biofilm collected from patients with prosthetic stomatitis.

Keywords: photochemotherapy, biofilms, oral candidiasis.

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BPG04

Cytotoxic and genotoxic evaluation of neurotensin-loaded silk fibroin membranes

Bonafé ACF*, Miguel MMV, Ramos LP, Oliveira LD, Santamaria MP, Mathias-Santamaria IF.

Objectives: To investigate the cytotoxic and genotoxic potential of silk fibroin membranes loaded with neurotensin (FS+NT). Materials and Methods*: In vitro* cytotoxicity, performed by direct contact (ISO 10993-5) on immortalized human keratinocytes (HaCaT), human skin fibroblasts (HFF-1), and human gingival fibroblasts (HGF) (Ethics Committee: 14822719.8.0000.5418), 0.2 cm^2 cuts of FS+NT were added onto the cell layer. Viability was determined using resazurin and calculated relative to the control group without the addition of the FS+NT membrane. For *in vitro* genotoxicity (OECD, 2016), HaCaT, HFF-1, and HGF cell lines were exposed to 0.2 cm^2 cuts of FS+NT in Dulbecco's Modified Eagle Medium enriched with 10% fetal bovine serum and 5 mM ethyl methanesulfonate as a positive control for 24 h. Subsequently, cells were incubated with cytochalasin B 6 µg/ml for 24 h at 37 °C in 5% CO^2 atmosphere, subjected to hypotonic shock, fixed in methanol:acetic acid (3:1) for 10 min (repeated 3 times), stained with DAPI for 5 min, and analyzed by fluorescence microscopy. Statistical analysis was performed using one-way ANOVA and Tukey's post-hoc test. Results: For cytotoxicity, viabilities were 203.6% for HaCat, 108% for HFF-1, and 93.49% for HGF. Genotoxicity showed no statistical difference ($p < 0.05$) between positive and negative controls. Conclusions: It is concluded that the FS+NT membrane showed no cytotoxicity and genotoxicity and, furthermore, demonstrated to assist in *in vitro* cell proliferation.

Keywords: Cytotoxicity Test, Drug Delivery Systems, Fibroins, Genotoxicity Test, Neurotensin

BPG05

Genetic changes in malignant transformation of pleomorphic adenoma: Which is the guilty party?

Scarini JF, Nagamatsu ST, Egal ESA, Castilho R, Altemani A, Mariano FV

Pleomorphic adenoma (PA) can undergo genetic changes, leading to its malignant counterpart, carcinoma ex-pleomorphic adenoma (CXPA), a rare, aggressive tumor with distinct behavior and prognosis. Whole exome-sequencing (WES) analyzed DNA from 13 CXPA, 7 PA, and 5 residual PA cases, revealing genetic alterations driving CXPA development. Single nucleotide variants (SNVs) were found in all samples, filtered with a population disease allele frequency (AF) ≥0.2. Immunofluorescence was employed as the selected technique for result validation. We identified 823 genes with non-synonymous mutations: 251 (30.5%) unique to PA, 236 (28.7%) to residual PA, and 848 (18.3%) to CXPA. Notably, 104 genes (12.6%) harboring mutations persisted from PA to carcinoma. 65 genes (7.9%) exhibited mutations across the adenoma-carcinoma sequence. Key targets included extracellular matrix-related genes (*COL5A3, COLCA2, COL24A1, ITGA3, LAMA5, TNXB*). Mutations occurred in well-known tumor-suppressor genes (*PCDH9, LRMP, KDM5A, BHLHE41, EPB41L3, RB1, NEDD4L, TP53, PTPRT, ARL11, STARD13, SEPTIN4, ARG1, SMYD4, CNDP2, CHFR, MAPK10*), and crucial oncogenes (*USP4, MUC4, BRAF, GNAS*), including the novel *MYB* mutation in the adenoma-carcinoma sequence. The immunofluorescence analysis showed that c-Myb expression is present in all groups and increases along the adenoma-carcinoma sequence. In summary, these findings collectively underscore the intricate choreography of oncogenes and tumor suppressor genes orchestrating the stepwise transformation of PA into CXPA.

Keywords: Salivary Gland Neoplasm, Salivary Gland Cancers, Pleomorphic Adenoma, Whole Exome Sequencing, c-myb Gene

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BPG06

Assessment of the biofunctionality of Ti-35Nb-7Zr alloy implants compared to commercial Ti-Cp implants

de Mello FZD*, de Vasconcellos LMR, Mello DCR, Vieira MN, Schneider SG.

Ti-35Nb-7Zr is a Ti-ß alloy demonstrated in previous studies to have favorable mechanical properties such as high tensile strength (~800 MPa) and low modulus of elasticity (33 GPa) for use as an implant. This study describes the evaluation of the biofunctionality of Ti-35Nb-7Zr alloy dental implants compared to commercial Ti-Cp implants. Biofunctionality was evaluated using in vitro and in vivo tests. The in vitro evaluation was carried out using mesenchymal cells isolated from the bone marrow of rat femurs, which were cultured in osteogenic culture medium and subsequently tested for cytotoxicity, total protein quantification and alkaline phosphatase activity. In the in vivo stage, commercial implants and Ti-35Nb-7Zr alloy implants were inserted into rabbit tibias for histological and histomorphometric evaluation and torque removal analysis. The results obtained in the evaluations showed no significant difference between the alloy implants and the commercial implants over the 4-week period. These results demonstrated that the alloy implants showed similar biocompatibility and biofunctionality to commercial implants, bringing together characteristics that point to their osteogenic and osseointegration potential for use as biomaterial for implants.

Keywords: Alloys, Dental Implants, Biocompatible Materials, Osteogenesis, Osteointegration

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BPG07

Application of OzoneTherapy in the Tissue Repair Process of Skin Burns: Histometric Evaluation.

Primiceri RS, Salgado MAC, Melo M

This work aims to evaluate the repair process in quantitative terms, in the count of representative tissue components such as mononuclear cells, fibroblasts and blood vessels, and to highlight the influence of ozone on tissue elements and the periods of evolution in the repair process. The experiments were conducted with the approval of the Research Ethics Committee of UNESP – Universidade Estadual Paulista "Júlio de Mesquita Filho", Campus of São José dos Campos- SP – Institute of Science and Technology. The experimental phase of in vivo treatment and care took place at the ICT-UNESP vivarium. The analysis criteria involved separating the regions superior and inferior to the burn, which underwent both ozone treatment and control areas. The ImageJ software was utilized for cell couting,categorizing them into groups: fibroblasts, mononuclear cells, and blood vessels. Therefore, it can be concluded that, upon analyzing the control tables from 7 to 14 days, there is a decrease in mononuclear cells, fibroblasts, and blood vessels. In contrast, during the treatment from 7 days to 14 days, there is an increase in the quantity of mononuclear cells, fibroblasts and blood vessels. This is due to the reparative process aiming to heal the injury, requiring cells such as fibroblasts, mononuclear cells and blood vessels.Additionally, it is demonstrated that the lesion treated with ozonated oil exhibits better responses, regarding the inflammatory infiltrate, erosion and inflammation in the dermis/epidermis. The cell count for the 21-day period is still pending to complete the observation of the reparative process.

Keywords: Ozone, skin, cicatrization

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BPG08

3D printing of hydrogel incorporated with bioglass and strontium ranelate and osteogenesis in ovariectomized rat cells: in vitro study

Souto JCRA*, Grisante LAD, Vieira NM, Silva LAS, Borges ALS, Vasconcellos LMR

The aim of this present study was to investigate the in vitro effect of 3D printing of the hydrogel incorporated with bioglass functionalized with the drug strontium ranelate in mesenchymal cells obtained from ovariectomized rats. The 45S5 bioglass was functionalized with and without the drug strontium ranelate by the sonochemical route. Sequentially, the biomaterial was produced using the 3D printing technique, obtaining the following groups: hydrogel (control); hydrogel incorporated with functionalized bioglass; hydrogel incorporated with bioglass functionalized with strontium ranelate. The characterization was performed using infrared by Fourier transform. Subsequently, nine female Wistar rats underwent bilateral ovariectomy and after 8 weeks mesenchymal cells were obtained from the femurs of these rats. Cells were subjected to cellular cytotoxicity, total protein content, alkaline phosphatase activity and direct fluorescence tests. It was observed that the experimental groups were not cytotoxic and provided an adequate environment for cell activity and differentiation, however without statistical differences between groups ($p>0.05$). The present analysis provided important data for the use of this drug delivery system in the field of tissue engineering, obtaining information on the in vitro performance of the action of these biomaterials in cells of animals with metabolic impairment. The significance level adopted was 5%.

Keywords: Cellular differentiation, Biocompatible materials, Bone regeneration, Osteoporosis, 3D printing

BPG09

Analysis of hydrogel with strontium ranelate drug delivery system on bioglass for osteogenesis: an in vitro study.

Vieira MN*, Souto JCRA, Grisante LAD, Campos TMB, de Vasconcellos LMR.

In this study, the influence of drug delivery systems using injectable hydrogels incorporated with strontium ranelate-functionalized bioglass particles on in vitro osteogenesis was investigated. Initially, the synthesis and characterization of the bioglass were performed, followed by its functionalization with the drug through the sonochemical route. Subsequently, the production and characterization of the hydrogel with functionalized bioglasses were carried out, forming the following groups: a) hydrogel; b) hydrogel incorporated with bioglass; c) hydrogel incorporated with strontium ranelate-functionalized bioglass. Next, cytotoxicity testing, evaluation of total protein content, alkaline phosphatase activity, and direct fluorescence testing of the different hydrogels were performed using mesenchymal cells isolated from ovarietomized rat femurs. Quantitative data were subjected to a two-factor ANOVA test with a significance level of 5%. The results of the in vitro tests showed that all hydrogels had positive influences on osteogenic activity, but without statistical differences between the groups ($p>0.05$). It was concluded that all hydrogels could be used for bone tissue engineering since they allowed cellular differentiation.

Keywords: drug delivery systems, biocompatible materials, ovariectomy, osteogenesis

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BPG10

Antibiofilm action of combined and isolated extracts of white roses (*R. centifolia*) and rosemary (*R. officinalis*) on *Candida glabrata*

Santos LF*, Meccatti VM, Pereira TC, Ramos LP, Menezes RT, Oliveira LD

The antifungal action of the extracts on the planktonic forms of *C. glabrata* was determined by the minimum inhibitory concentration (MIC) of the isolated extracts. Then, the synergistic activity of the combined extracts was verified using the checkerboard technique. After evaluating the planktonic form, for verification in biofilms, the microbial suspensions were standardized and added to microplates for incubation. Then the supernatant was discarded, and YNB broth was added and incubated for 48 hours. Biofilms were formed and exposed for 5 min, 30 min and 24 h to isolated and combined concentrations of extracts that were effective against planktonic forms. Nystatin and culture medium were the controls. After the exposures, the wells were washed and MTT was added with a new incubation to verify cell viability, after which it was removed for the addition of Dimethylsuffoxide (DMSO) followed by incubation. Optical densities were obtained at 570 nm and converted into percentage of metabolic activity. The MIC for both extracts was 50 mg/mL, and found additive action when combined. For biofilms, in 5 minutes there was no statistical difference between the control and the treatments; for 30 minutes, rosemary extract and treatments led to a small reduction in cell viability; for 24 hours there was a significant reduction by the rosemary extract and the combination at 25 mg/mL of each extract. Therefore, an antibiofilm action was verified in 24 hours by the isolated rosemary extract and by the joint action of roses and rosemary at 25 mg/mL each.

Keywords: *Candida glabrata*; *Rosa centifolia*; *Rosmarinus*

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BPG11

Development, characterization, and in vitro analysis of 3D hydrogels in a drug delivery system

Grisante LAD*; Vasconcellos LMR, Prado RF, Santos VR, Barbosa L, Borges ALS.

In this study, the production of hydrogels with a drug delivery system was developed, incorporating bioactive glass (Bg) particles functionalized with different drugs, raloxifene (Rx), and strontium ranelate (Sr). Initially, the synthesis of bioactive glass was carried out, followed by its characterization and functionalization with drugs using the sonochemical technique. To evaluate its bioactivity, tests such as X-ray diffraction, energy-dispersive spectroscopy, and Raman spectroscopy were conducted. Subsequently, hydrogels (H) were synthesized and incorporated with functionalized bioactive glass. The hydrogels were produced using 3D printing and divided into four groups: H, HBg, HRx, and HSr. The characterization of the hydrogels was then performed through scanning electron microscopy and the release profile of the hydrogel compounds. Finally, an in vitro study was conducted using mesenchymal cells obtained from rat femurs to evaluate cellular activity and viability. The results demonstrated bioactivity in the Bg particles, while the hydrogels successfully achieved their intended objectives as shown in the scanning electron microscopy. Moreover, they did not exhibit cytotoxic effects on cells and effectively delivered the drugs, as the presence of the medication in the biomaterial could be observed. In conclusion, the hydrogels exhibited promise as they were successfully produced, allowing visualization of the drug presence without being cytotoxic to osteoblastic cells.

Keywords: *drug delivery*, 3D printing, hydrogels, bioglass, *in vitro*.

Undergraduate – Clinical Reports

Casos Clínicos Graduação

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CCG01

ATYPICAL CO-INFECTION BETWEEN PARACOCCIDIOIDOMYCOSIS AND TUBERCULOSIS: A CASE REPORT

Malta IS*; Antunes GS; Souza YA; Lança MLA; Anbinder AL; Kaminagakura E.

The aim of this study was to diagnose and described the clinical conditions of a forty-six-year-old male patient previously treated for pulmonary tuberculosis. This participant was presented to the dentist with complaints of persistent dry cough, significant weight loss, and diffuse pain in the oral mucosa lasting for a year. Upon extra-oral evaluation, pronounced lip swelling and deep ulcers on the leg, chest, forearm, and forehead were noted. In the oral cavity, disseminated moriform ulcers were observed on the buccal mucosa, palate, and alveolar ridge. Suspecting paracoccidioidomycosis, an incisional biopsy was performed. Histopathological analysis revealed developed granulomas with multinucleated giant cells and yeasts with peripheral budding, positively stained with PAS and Grocott-Gomori, determining the diagnosis of paracoccidioidomycosis. The patient was under treatment with Itraconazole 200 mg per day, and after one month of treatment, significant remission of lesions was demonstrated. Previous immunochromatography analysis and sensitivity tests for *Mycobacterium tuberculosis* confirmed the diagnosis of tuberculosis.

Keywords: paracoccidioidomycosis, *Mycobacterium tuberculosis*, mouth mucosa, biopsy

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CCG02

Calcium hydroxyapatite for collagen biostimulation in a patient after bariatric surgery.

Amorim VAA, Greca AR, Lopes GC, Coelho MS, Cintra TMF, de Araújo RM.

Collagen production decreases with aging, leading to loss of facial tissue support, and consequently, the search for means to induce the production of this lost collagen for dermal restructuring has become recurrent. This work aims to discuss the action of the collagen biostimulator for the treatment of facial flaccidity. Case report: A 33-year-old female patient undergoing gastric bypass follow-up, having already undergone bariatric surgery, sought the postgraduate clinic at ICT-UNESP with complaints about facial flaccidity due to the surgery performed. As a treatment plan, 5 biostimulator sessions were recommended for the face and neck, with an interval of 1 month. As a post-procedure, the patient was instructed to massage the application area for 5 minutes, avoid excessive exposure to the sun, apply plenty of sunscreen and not take anti-inflammatories to avoid any type of intercurrence that could jeopardize the treatment. Discussion: biostimulators cause neocollagenesis, inducing fibroblasts to produce collagen, reducing dermal flaccidity. Conclusion: there was a gradual improvement in the texture of the patient's skin and in its rejuvenation measured by the photos taken before and after. Thus, through this treatment, it is observed that the treatment of collagen biostimulators stimulates collagen production, bringing tonicity to the patient's face, softening expression lines, wrinkles and improving the facial contour.

Keywords: Collagen biostimulator, calcium hydroxyapatite, biostimulator, bariatric, collagen

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CCG03

CASE REPORT OF LIP FILLER AS INDIRECT CORRECTION OF STATIC PERIORAL RHYTIDES

Darezzo CM*, Cintra TMF, Lopes GC, Coelho MS, Greca AR, de Araújo RM

The rearrangement and loss of fat compartments, added to bone remodeling and a drop in the percentage of collagen are characteristics of the facial aging process. This process is manifested in the perioral region by loss of volume, generating wrinkles and lack of lip contour and projection. The objective of this study is the three-dimensional approach to the application of a filler based on hyaluronic acid in the lips for the indirect treatment of perioral rhytids. Case report: Female patient, 64 years old, sought the postgraduate clinic of the ICT – UNESP São José dos Campos with an aesthetic complaint in the perioral region, with a focus on "bar code" wrinkles. On clinical examination, the perioral region had rhytids and lips with poor contour, volume and projection. As a treatment plan, 1 ml of Rennova® brand hyaluronic acid-based filler was applied, distributed over the lower and upper lips and cupid's bow, ensuring the treatment of perioral wrinkles with replacement of volume, contour and lip projection, respecting the patient's facial anatomy. Therefore, the present case evidenced the possibility of indirect treatment of rhytids due to loss of facial volume, where lip filling allowed the improvement of the perioral region as a whole, returning the volume previously occupied by fat pads and collagen. Thus, the importance of a three-dimensional look in facial treatment is pointed out, understanding the aging process so that joviality is returned in an adequate way.

Keywords: Hyaluronic acid, perioral rhytids, filler, barcodes, lip filler

CCG04

Severe epithetlial dysplasia extending into the duct of a minor salivary gland - an uncommon finding

Gundlach JE, Ribeiro JL, Costa PVB, Anbinder AL.

Oral leukoplakia is a potentially malignant disorder that can microscopically exhibit mild, moderate, or severe epithelial dysplasia. Severe dysplasia is characterized by cytological and architectural changes throughout the epithelium without disruption of the basal membrane and can precede invasive squamous cell carcinoma. Involvement of the epithelium along the ducts of salivary glands is an uncommon finding in cases of severe dysplasia, which typically occurs on the floor of the mouth and merits attention due to potential implications for surgery extent and recurrence rates. In this context, we report a case of a 69-year-old male, smoker, who presented with a non-homogeneous, irregularly bordered white plaque, approximately 15 mm in size, in the central region of the floor of the mouth. With the hypothesis of leukoplakia, an incisional biopsy was performed. The epithelium exhibited short, drop-shaped cones, hyperplasia and disorganization of the basal layer, nuclear pleomorphism, binucleated cells, atypical mitoses, and conspicuous nucleoli, involving all three thirds of the epithelium. Interestingly, severe dysplasia continuity was observed within an excretory duct of a salivary gland, despite the seemingly intact basal membrane, characterizing an atypical case of severe dysplasia. This finding underscores the importance of meticulous assessment of dysplastic lesions by the pathologist, as cases involving the duct require deeper surgical margins. The interplay between pathologists and clinicians is essential for successful treatment and favorable patient prognosis.

Keywords: Leucoplakia; Histopathology; Salivary Gland

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CCG05

Case report on the application of botulinum toxin in the upper third of the face.

Osorio SVS*, Lopes GC, Coelho MS, Cintra TMF, Greca AR, de Araújo RM.

Due to the aging process of the face, one of the main manifestations of this process is the appearance of wrinkles and consequently the demand for treatments to mitigate or prevent these signs is growing. And with that, it highlights the importance of the dental surgeon in the resumption of facial joviality. The present work aims to address the application of botulinum toxin for aesthetic purposes in dental clinics. A 25-year-old female patient visited the postgraduate clinic of ICT - UNESP São José dos Campos with aesthetic complaints regarding forehead and orbicularis oculi region wrinkles. Clinical examination revealed evident expression lines in these areas. As a treatment plan, botulinum toxin was applied, using the standard reconstitution of 2 ml of sterile saline for injection for every 100 units of toxin, ensuring the paralysis of the affected muscles and respecting the patient's anatomy for a more natural result. Following the treatment, a significant improvement was noted in the patient's expression lines on the forehead and around the eyes. In the present case, very satisfactory results were observed in the elimination of expression lines, exemplifying that the application of botox in young patients has a great effect in smoothing dynamic expression lines, preventing them from becoming static throughout life. In this way, the importance of the dental surgeon in mitigating aging processes and restoring self-esteem is evident.

Keywords: botulinum toxin, expression lines, self-esteem, orofacial harmonization

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CCG06

Ameloblastic Fibroma and Ameloblastoma: it is important to differentiate them

Mendes YN, Costa PVB, Ribeiro JL, Battistelli LS, Anbinder AL

Ameloblastic Fibroma (FA) is a benign odontogenic neoplasm of mixed origin that primarily affects young individuals, with approximately 70% of cases occurring in the posterior mandible. A 9-year-old female patient presented with a slight swelling in the retromolar trigone region. A panoramic radiograph revealed a multilocular radiolucent image in the mandibular ramus and angle, along with displacement of teeth 47 and 48. With a suspected diagnosis of ameloblastoma, an aspirational puncture was performed (yielding a negative result), followed by an incisional biopsy. Histological sections showed a neoplasm composed of epithelial nests with a peripheral layer of tall columnar cells exhibiting palisading nuclei, delimiting areas of cells resembling the stellate reticulum, amidst a mesenchyme with spindle-shaped cells similar to dental papilla. With the diagnosis of ameloblastic fibroma, the patient was referred for treatment. Distinguishing between ameloblastoma and ameloblastic fibroma is crucial, as while ameloblastoma is locally infiltrative and requires aggressive treatment with a high recurrence rate, ameloblastic fibroma only requires simple enucleation and has a favorable prognosis.

Keywords: Fibroma, Ameloblastoma, Neoplasms.

CCG07

Case report: esthetic improvements of enamel white spot lesions through the association of minimal intervention techniques

Monnerat MF*, Souza LS, Bresciani E.

The present case report aims to illustrate minimal interventions on white spot lesions, such as microabrasion and resin infiltrant, to restore the appearance of white spot lesions as close as possible to the sound enamel surface. A male patient, presented to our clinic with white-spot lesions on both maxillary central incisors, consistent with enamel hypomineralization. Initially, a transillumination test was performed using a light curing unit, to understand the lesion extension. At first, the microabrasion with hydrochloric acid 6,6% and silicon carbide (Opallustre, Ultradent - USA) was done in 6 cycles of 10 seconds, using a rubber prophy cup, under absolute isolation. As the white-spot lesions were still present on the enamel surface, the microabrasion was followed by the use of resin infiltration, Icon (DMG - Germany). It started with the application of the Icon Etch (hydrochloric acid 15%) for 2 minutes. Then, after the wash-out and air drying process, the Icon Dry (99% ethanol) is applied on the enamel surface for 60 seconds, followed by the infiltration of the methacrylate (Icon-Infiltratant, DMG) for 3 minutes. Polymerisation was performed for 40 seconds after removing the excess with air. Subsequently, the infiltration procedure was repeated for 1 minute and light-cured as well. At last, the finishing and polishing were carried out using abrasive discs and a silicon carbide brush. The result achieved with this treatment provided the masking effect of the white spot lesion on the dental enamel.

Keywords: Resin infiltration; enamel hypomineralization; microabrasion

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CCG08

Prosthetic Rehabilitation on teeth and osseointegrated implant in the anterior maxilla using digital flow: Case report

Machado JA*; Medeiros AS; Neto OA; Ribeiro AOP; Bochnia J

Oral rehabilitations carried out in digital flow are being increasingly used due to their constant technological development. Among its advantages, the comfort, speed and predictability of the treatment stand out. Thus, in the case of rehabilitations with a high degree of aesthetic demand, the use of the digital flow and its tools make the work more precise and predictable. This study aims to present a clinical case involving anterior oral rehabilitation executed via digital flow (CAD/CAM). The procedure included the installation of an implant and crown on a 5Y-PSZ zirconia implant, with makeup adjustments in the 21 region. Additionally, total crowns were applied to teeth (11, 12, 13, 22, and 23) using monolithic lithium disilicate. The patient, a 51-year-old female, sought assistance at the Prosthodontics clinic of the Faculty of Dentistry, Federal University of Rio de Janeiro, expressing dissatisfaction with the aesthetics of her prosthesis. After clinical examination, missing teeth and pigmented anterior provisional fixed partial denture with significant biofilm retention were identified. The entire treatment process, from planning and provisionalization to case finalization, was conducted using a digital workflow. It was concluded that the use of digital flow for rehabilitation is a facilitating tool for the clinician's daily life, in addition to delivering satisfactory results. In addition, the choice of material, lithium disilicate for crowns on teeth and 5Y-PSZ zirconia for crowns on implants in the anterior region, presented good aesthetic and functional characteristics for the present case.

Keywords: Computer-Aided Design; lithia disilicate; maxilla; dental implant

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CCG09

SECONDARY ACQUIRED SYPHILIS REINFECTION AND ITS CLINICAL MANIFESTATIONS IN THE ORAL CAVITY: CASE REPORT

Souza, BSN; Almeida, JD; Lança MLA; Conceição, NSC; Tango, EK.

Syphilis is a chronic Sexually Transmitted Infection (STI) with various clinical manifestations in different stages. Lesions are common in the genital or anal regions, but they rarely occur in the oral cavity. The aim of this study was to present a case of oral manifestations due to acquired secondary syphilis reinfection. A Thirty-two-year-old man presented multiple painful oral lesions with three months of evolution. During anamnesis, the patient reported secondary syphilis six years previously, which was treated by antibiotics. On extraoral examination, no lesions were observed. On intraoral examination, the patient presented multiple ulcers covered by a yellowish-gray pseudomembrane on the hard palate, oral mucosa, lower labial mucosa and on the right side of the retromolar trigone; a white plaque on the right labial commissure was also observed. Under the diagnosis hypothesis of syphilis, an incisional biopsy was performed. Microscopically, an intense chronic inflammatory infiltrate with plasm cell predominance was found. The presence of Treponema pallidum was detected by immunohistochemistry. VDRL, FTA-ABS, anti-HIV (I/II), and anti-HCV tests were requested, and the results confirmed the diagnosis of syphilis. The patient started the treatment with penicillin G benzathine injection, and the lesions disappeared during the follow-up appointments. Thus, syphilis is an emerging STI and can be diagnosed based on lesions in the oral cavity.

Keywords: syphilis, treponemal Infections, great pox, Sexually Transmitted Diseases

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CCG10

ONCOLOGICAL PATIENT WITH MEDICATION-RELATED OSTEONECROSIS - TREATMENT ASSOCIATED WITH PHOTODYNAMIC THERAPY IN THE MANDIBULAR REGION

NASCIMENTO, ML; RAMOS, ANF; CARVALHO, V; FONSECA, MVA; QUEIROZ, TS; SANTOS, LM.

Medication-related osteonecrosis is a condition in which degradation and cell death of bone tissue occurs due to insufficient blood supply, which can result from the use of various medications, including chemotherapy agents. The objective of this study was to describe a case report of a 73-year-old male patient diagnosed with prostate cancer with bone metastasis in the hip region, using antiresorptive drugs. He sought the Onco Project clinic as he had undergone surgical treatment with dental implant placement in the mandibular region. Due to systemic immunosuppression and detrimental effects on cellular differentiation and bone function, leading to a failure in physiological repair, medication-related osteonecrosis (MRONJ) occurred in the surgical area. In this situation, 22 sessions of photodynamic therapy (PDT) were conducted, once a week, using red laser light at a wavelength, associated with a 0.01% concentration of methylene blue photosensitizer, antibiotic therapy, and mouthwash with 0.12% chlorhexidine digluconate, prior to the surgery for excision of the necrotic lesion. PDT was continued during the intraoperative and postoperative phases. After 15 days, reepithelialization of the lesion was observed. It was concluded that preoperative, intraoperative, and postoperative photodynamic therapy, combined with antibiotic therapy, hygiene guidance, and surgical excision, proved effective in tissue preservation, promoting satisfactory healing, and preventing the progression of MRONJ.

Keywords: Osteonecrosis, Photodynamic therapy, Medical oncology

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CCG11

MANAGEMENT OF CHRONIC TEMPOROMANDIBULAR ARTHRALGIA USING CANNABIDIOL FULL SPECTRUM OIL: A CASE REPORT

Tanganeli MDS*, Tanganeli JPC, Oliveira DFLM, Fernandes EE, Rode SM.

The use of substances of a cannabinoid nature can be of great value in the development of new strategies that can significantly contribute for the treatment of patients with pain syndromes, particularly in cases that are difficult to control. The aim of this case report is to present a situation of chronic temporomandibular disorder (TMD), with several failures in previous interventions, but with excellent results after treatment using full spectrum cannabidiol (CBD) oil. Previously, the patient was treated with injectable steroidal anti-inflammatory drugs - intramuscular, conservative treatment (laser therapy+TENS+stabilization splint), as well as arthrocentesis and viscosupplementation. Despite this, pain remained in the left temporomandibular joint (TMJ). CBD therapy was started alongside maintenance conservative therapy, using a sublingual drop, corresponding to 1.5 mg of CBD, once a day, before bed. After 2 days, it was added before lunch. After another 2 days, two drops were added before lunch and two drops before bedtime, totaling 6 mg of CBD per day. Within 1 week, the patient showed complete remission of symptoms. At 3 and 6 months, with the same dosage, she remained asymptomatic, reporting a general improvement in quality of life. Conservative treatment for the vast majority of cases shows excellent results. However, refractory cases may benefit from the use of CBD.

Keywords: Cannabis sativa, cannabinoids, endocannabinoids, temporomandibular disorders, orofacial pain

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CCG12

NEURILEMOMA IN THE TONGUE: A CASE REPORT

Santos YC*, Battistelli LS, Delgado AM, Anbinder AL

Neurilemoma or Schwannoma is an uncommon benign neoplasm of neural origin, which can occur in the mouth. We report the case of a 47-year-old female patient with a submucosal nodule, 4 cm in diameter, in the tongue, involving the ventral and dorsal aspects, and causing painful symptoms. With the hypothesis of a mesenchymal or salivary gland neoplasm, an incisional biopsy was performed. Histological sections revealed fragments of a highly cellularized lesion consisting of bundles of ovoid and spindle cells, sometimes cut in different directions. In some areas, the cells were arranged in opposing rows with their nuclei in a palisade pattern, defining eosinophilic areas with an absence of nuclei, interpreted as Verocay bodies, and Antoni A pattern. The stroma was scarce and presented some regions with a fibrillar appearance, and others were hyalinized. The cells of the lesion showed cytoplasmic positivity for S100. With the diagnosis of neurilemoma, the patient was referred for treatment. In lesions with spindle-shaped cells, it is important to assess, in addition to the morphological organization, the cellular origin, when immunohistochemical reactions can be of great value.

Keywords: Neurilemoma; Oral Pathology; Benign Neoplasm

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CCG13

THE IMPORTANCE OF THE DENTIST IN THE INTERDISCIPLINARY TREATMENT AND PREPARATION OF THE PATIENT BEFORE ONCOLOGICAL TREATMENT

Moreira KS*, Carvalho VG, Fonseca MVA, Galdino MI, Renosto L, Santos LM

The alarming increase in the prevalence of head and neck cancer is a fact found in the literature and it is linked to changes in society's habits. It ranks seventh among the most common cancers in the world, with approximately 640,000 new cases annually, representing 4% of the world's cancer prevalence. Evidences show that it is the fourth most frequent type of malignant neoplasm in the Southeast region of Brazil involving males. The choice of treatment depends on several factors, including the type of cancer, its stage and location. The therapeutic approach may vary between surgery, radiotherapy, chemotherapy or a combination of these. The objective of this case report is to demonstrate the importance of interdisciplinarity and the dentist's conduct in preparing the mouth of a patient diagnosed with squamous cell carcinoma of the larynx, who was referred to the onco project clinic by the physician to adjust the oral environment prior to the treatment with radiotherapy. In oroscopy several foci of infection were observed, residual roots, decayed and fractured teeth and a high rate of biofilm. laser therapy and restorations. Pre-cancer treatment dental preparation includes preventive and curative procedures that aim to improve the oral conditions of irradiated patients, preventing or mitigating the sequelae resulting from cancer treatment and improving their quality of life.

Keywords: Dentistry; Radiotherapy; Neoplasms; Head and Neck Neoplasms; Quality of Life; Oral Health.

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CCG14

APEXIFICATION IN A TOOTH WITH INCOMPLETE ROOT DEVELOPMENT AS AN ALTERNATIVE TO REVASCULARIZATION FAILURE: A Case Report

Serafim GB*, Guerrero GG, Fiamini BK, Santos AC, Valera MC

Patient BLGS, 12 years old, presented at ICT UNESP in São José dos Campos for follow-up of a revascularization (RP) treatment performed in 2018, reporting painful symptoms upon stimulating tooth 21. During the clinical examination, dark discoloration of the dental crown and Grade II mobility were observed. Radiographic examination revealed an open apex of the concerned tooth and a significant periapical lesion. At the conclusion of the assessment, the authors diagnosed a failure of the previous treatment and planned a new intervention for apexification (AP) treatment using the apical plug technique with MTA. In the first session, the tooth was anesthetized and isolated. After coronal access, dark discoloration and a foul odor were evident. An active irrigation protocol was performed, followed by canal filling with calcium hydroxide medication (MIC) for 15 days. A total of 3 MIC changes were carried out with 15-day intervals due to the clinical conditions that the tooth presented in each reevaluation session. Two months after the initial consultation, the MTA apical plug was placed with the aid of microscopic magnification. In the subsequent session, the stability of the apical plug was assessed, and obturation was performed. Pain symptoms and mobility ceased after the first appointment, and follow-up was conducted every 3 months. Considering the progression of the presented case it is concluded that AP with MTA apical plug represents a viable alternative for revascularization failure in teeth with incomplete root development and periapical lesions.

Keywords: Regenerative Endodontics; Dental Pulp Necrosis; Tooth Apex; Persistent Infection; Dental Pulp Diseases;

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CCG15

LOCALIZED JUVENILE SPONGIOTIC GINGIVAL HYPERPLASIA: REPORT OF TWO CASES

Santos YC*, Zutin EAL, Américo MG, Alves MGO, Anbinder AL

Localized juvenile spongiotic gingival hyperplasia is a lesion of unknown etiology that occurs in the gingiva of young individuals. We report two cases of this uncommon lesion. The first is a 13-year-old female patient with a reddish papillary nodule in the vestibular gingiva of tooth 11, partially covering the crown, with a provisional diagnosis of pyogenic granuloma. The second is an 11-year-old patient with a red papillary nodule in the vestibular gingiva of tooth 22, with a provisional diagnosis of papilloma. She also presented a red plaque on gingiva of tooth 11, which was not removed. Excisional biopsy of the nodules was performed. The lesions were characterized by connective tissue lined by hyperplastic non-keratinized stratified squamous epithelium, spongiosis, exocytosis, and subepithelial inflammatory infiltrate. Knowledge of the clinical and histological features of this lesion is important in deciding the best treatment, either excision or observation, as some cases may spontaneously resolve.

Keywords: Clinical Diagnosis, Gingival Diseases, Exocytosis, Gingiva, Gingival Hyperplasia, Pathology, Oral

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CCG16

LIP SCHWANOMA – CLINICAL CASE REPORT

Paulo LS*, Americo MG, Anbinder AL, Prado RF

Schwannoma, also known as neurilemmoma, is a benign neoplasm that develops from Schwann cells, with unknown etiology and with greater prevalence in young people and adults. It is characterized as an uncommon lesion, but with a predominance of cases in the head and neck region, presenting slow, asymptomatic and encapsulated growth in most reports. The effective therapeutic approach is surgical excision. This work aims to present the case of an 18-year-old male patient with a submucosal nodule on the right lower lip. The surface was smooth and pale pink in color. The patient reported did not to know how long had the lesion. Between the first clinical evaluation and the surgical moment, 45 days passed. At both times the lesion was 1cm in diameter, therefore, without changes in size. With the diagnostic hypotheses of Mucocele, Chronic Sialadenitis and Pleomorphic Adenoma, an excisional biopsy was performed. The sections showed spindle-shaped cells, sometimes forming bundles. In some areas, the nuclei were organized in an arrangement similar to Verocay corpuscles. After morphological and immunohistochemical analysis with antibodies S-100, HHF-35 and Ki-67, the diagnosis of Schwannoma was established. With this report, the authors wish to draw attention to this disease and its clinical presentation, in addition to reiterating the importance of including Schwannoma among the differential diagnoses of encapsulated lesions in young patients.

Keywords: Neurilemmoma, Oral Pathology, Microscopy

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CCG17

Application of digital flow in anterior rehabilitation with immediate implant: case report.

Jacinto CM*, Nascimento RD.

The objective of this study was to explain a case of anterior dentoalveolar rehabilitation planned with digital flow. A 58-year-old female patient, ASA II, was referred due to the presence of external root resorption in tooth 23, with a history of symptoms and fistula. On physical examination, the patient reported symptoms of horizontal percussion, absence of fistula or probing depth. The tomography confirmed the diagnosis of root resorption and exodontia was indicated. Due to the aesthetic risk, we opted for guided installation and immediate provisionalization. For the planning and creation of the guide, DICOM (TCFC) and STL (intra-oral scanning) files were used, both imported into the CodiagnostiX software in which the planning was carried out (CAD computer-aided design), to then be exported and the guide obtained by additive manufacturing (CAM computer aided manufacturing). A Titamax Ex CM Acqua 3.5x13mm, Neodent implant was installed without opening a flap, filling the vestibular gap with bovine inorganic bone matrix (Straumann) and subepithelial connective tissue graft. Once primary stability was obtained, immediate provisionalization was performed with the crown of the extracted tooth. After 6 months, a ceramic crown was cemented onto the abutment (Emax press, Ivoclar). The 3-year follow-up shows peri-implant tissue stability and aesthetic and functional satisfaction for the patient. Therefore, we can conclude that in the case presented, the use of digital flow allowed greater accuracy in implant positioning and aesthetic and functional rehabilitation success.

Keywords: Dental implant, bone graft, CAD/CAM.

Post-graduate – Clinical Reports

Casos Clínicos Pós-Graduação

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CCPG01

UNILATERAL CUSTOMIZED TMJ PROSTHESIS FOR CORRECTION OF CONDYLAR RESORPTION ASSOCIATED WITH ORTHOGNATHIC SURGERY: CASE REPORT

Zuccolotto, TDS*; Silva, IB; Toledo GCS; Sato, F; Araujo, MM.

Introduction: Alloplastic temporomandibular joint (TMJ) replacement seeks to address joint deformities. The objective of this study is to present a clinical case of correction of unilateral condylar resorption associated with dentofacial deformity. Case report: A 22-year-old female patient diagnosed with right-sided condylar hypoplasia associated with retrognathism and maxillary atresia. A right TMJ replacement with a customized prosthesis was planned, along with orthognathic surgery to correct the dentofacial deformity. An extraoral preauricular and submandibular approach was used for right condylectomy, articular fossa resection, surface regularization, followed by adaptation of positioning guides and maxillomandibular fixation. Subsequently, a sagittal mandibular ramus osteotomy was performed and the segment was fixed in an intermediate position. A customized prosthesis was then fixed in the planned position, followed by a Le Fort I osteotomy for segmentation into four parts of the maxilla and fixation of the maxillary segments in the final planned position. Conclusion: The combination of a customized TMJ prosthesis and orthognathic surgery in the same surgical time offers various advantages in terms of cost, morbidity, and surgical time that facilitate early patient's recovery and readaptation.

Keywords: Temporomandibular joint; Orthognathic Surgery; Joint Prosthesis

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CCPG02

MENTOPLASTY ASSOCIATED WITH CUTTING AND POSITIONING GUIDES (CAD/CAM): CASE REPORT

Silva IB*, Toledo GCS, Zuccolotto TC, cavalieri I, araujo MM

Mentoplasty is widely employed to correct deformities in the chin area. The aim of this study is to present a clinical case of a patient with dentofacial deformity and mandibular asymmetry, which was corrected using previously virtually designed cutting and positioning guides. The patient, a 19-year-old female, had been diagnosed with mandibular laterognathism. An orthosurgical treatment plan was established to correct the mandibular and chin asymmetry, along with maxillary segmentation into four segments to address posterior crossbite. Cutting and final positioning guides were fabricated for the chin region. Following bilateral sagittal mandibular osteotomy, segment fixation, and maxillary segmentation to achieve the final occlusion, an access point was created in the anterior mandibular sulcus for chin area entry. Cutting guides were installed, markings were made, and osteotomies for mentoplasty were performed. After separating the chin segment, a prototyped positioning guide was installed, and chin fixation was carried out. The patient was monitored by the surgical team for approximately 2 years, demonstrating good clinical progress and satisfactory results regarding the asymmetry. The utilization of virtual planning tools and design for guide fabrication favored both intraoperative procedures and the achieved outcomes at the end of the procedure.

Keywords: Orthognathic; Genioplasty; Tomography.

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CCPG03

THE APPLICATION OF BOTULINUM TOXIN AS AN ISOLATE TREATMENT OF STATIC RHYTIDS IN MATURE SKIN – CASE REPORT

Cintra TMF*, Lopes GC, Greca AR, Coelho MS, de Araújo RM

Botulinum toxin injection is a popular treatment for facial wrinkles (rhytids), which are the first signs of aging-related collagen loss. The study aims to describe a case of toxin application as an isolated treatment in mature skin. Patient, female, 68 years old, without comorbidities, with dissatisfaction with wrinkles all over the face and a bad eyebrows position. On clinical examination, she presented dermal flaccidity, static rhytids that were pronounced in dynamics, requiring dermal collagen replacement. Among the treatment options presented, the patient opted for toxin application, conducted in two sessions: initial and retouching after 15 days. For both applications, initial and retouching, 36 units of Botox® from the Allergan® were used, which were reconstituted in a proportion of 100u to 2ml of sterile saline solution. The retouching was necessary for a complete muscle paralysis of the face's upper third. It was achieved the repositioning of the eyebrows, and an improvement in the appearance of the rhytids, however without their extinction due to the degree of dermal flaccidity. While the patient expressed satisfaction, it became evident that the isolated use of botulinum toxin alone is insufficient for treating static wrinkles in mature skin. Combined treatments, particularly those focused on biostimulating collagen, are necessary and a personalized professional approach is vital to educate patients and ensure more effective results in static wrinkles from skin with significant collagen loss.

Keywords: aging, botulinum toxin, collagen

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CCPG04

LASER THERAPY AND OZONE THERAPY IN THE TREATMENT OF OSTEONECROSIS ASSOCIATED WITH THE USE OF PAMIDRONATE

*OLIVEIRA, GN; SILVA, LAA; LUPP, JS; RALDI, FV; MORAES, MB

Bisphosphonates are considered the standard treatment for bone metastases due to their ability to reduce resorption, remodeling, and blood vessel formation. However, they may increase the risk of osteonecrosis, especially in the jaws. Therapeutic options include antibiotics and surgical debridement. There is no established protocol, and adjuvant therapies are being used to promote bone repair. This case report aims to demonstrate a contemporary therapeutic approach. A 53- year-old female patient was referred to the CTB service of ICT/UNESP with complaints of severe oral cavity pain. During the medical history, she reported a previous diagnosis of breast cancer, which had metastasized to various locations in the bones. She received intravenous treatment with Pamidronate at a dose of 90mg. The clinical examination did not reveal any extraoral changes, but intraoral examination confirmed bone exposure on the left side of the maxilla and the right side of the mandible, with purulent discharge in the latter region. Based on the possibility of medication related osteonecrosis, a tomography of the affected areas was performed, which revealed the presence of irregular osteolytic areas, confirming the diagnosis. The treatment consisted of surgical debridement, diode laser therapy every 7 days, and daily use of ozonized oil after oral hygiene, for 3 months. There was significant improvement. Both therapies showed promising results in the treatment of pamidronate-associated osteonecrosis.

Keywords: Laser Therapy, Ozone Therapy, Osteonecrosis associated with bisphosphanates;

CCPG05

Enhancing palatal wound closure with silk fibroin membrane with neurotensin drug delivery system

Bonafé ACF*, Miguel MMV, Rossato A, Lemos CN, Santamaria MP, Mathias-Santamaria IF

Adjuvant therapies are employed in mucogingival surgeries, as the creation of a surgical site for graft removal, such as free gingival graft (FGG), increases postoperative morbidity. Silk fibroin membrane (SF) is a drug delivery system that, in addition to releasing neurotensin (NT), a neuropeptide that influences the nuclear kappa B pathway, serves as a scaffold, providing support for fibroblast migration. This case report aims to describe the experience of applying SF+NT membranes to accelerate the closure of the donor palatal site for FGG. Patient was 54-year-old, male with indication for extraction of tooth 16 and ridge preservation for implant placement, extraction was conducted in atraumatic manner; using a circular blade, FGG was obtained from palatal mucosa with 8 mm diameter and 2 mm thickness, afterwards was used to seal the socket, sutured in place with 4.0 silk. Subsequently, SF+NT membrane was positioned in the palatal donor site and sutured in a mesh pattern with 4.0 silk (Ethics Committee: 34234920800000077). After 7 postoperative days, absence of edema and initiation of reepithelialization (65.72%) were observed, the patient reported no discomfort. At 14 days, wound reepithelialization reached 100%, remaining free of edema and postoperative pain. Therefore, it can be concluded that SF+NT membrane presented satisfactory results in accordance with the intended purpose, without inducing adverse reactions or additional morbidities.

Keyword: Drug Delivery Systems, Fibroins, Neurotensin, Wound healing.

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CCPG06

The importance of clinicopathological correlation in the diagnosis of odontogenic cysts - case report

Dutra MJ, Malta IS, Souza BSN, Souza YA, Anbinder AL, Kaminagakura E.

Some lesions in the maxillofacial region have histological aspects very similar to each other, and should be related to clinical and imaging information for the correct diagnosis. Case 1: A 40-year-old woman presented with a bluish papule on the gingiva of the buccal insertion of the left mandible, asymptomatic and with 3 months of evolution. Case 2: A 75-year-old woman who, during the periapical radiographic examination, presented a well-defined unilocular radiolucent area in the body of the mandible on the left side, close to the canine. Upon intraoral physical examination, the ipsilateral teeth responded to a sensitivity test. In both cases, excisional biopsies were performed under the diagnostic hypotheses of an adult gingival cyst and a lateral periodontal cyst, respectively. Microscopically, pathological cavities lined by epithelium, sometimes squamous, sometimes stratified cubic, with few layers and some areas of thickening, in addition to the presence of clear cells, ciliated surface and lumen filled with amorphous eosinophilic material, were observed. The diagnoses were confirmed and both patients are being followed up, with no signs of recurrence. Due to the similar histological characteristics, the correlation with the clinical findings was of great importance for the definitive diagnosis.

Keywords: Odontogenic cysts, prognosis, oral pathology, oral medicine.

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CCPG07

POORLY DIFERENTIATED ORAL SQUAMOUS CELL CARCINOMA: CASE REPORT IN A YOUNG

Linhares LD*, Dutra MJ, Bandeira CM, Anbinder AL, Kaminagakura E

Squamous cell carcinoma (SCC) of the tongue in young patients is uncommon, and there is little data in the literature. The aim of this study is to present a clinical case of a 14-year-old female adolescent with SCC on the tongue, with clinical aspects that help in early diagnosis and treatment. The patient complained of a painful ulcer with hardened edges measuring approximately 4cm on her tongue that had been developing for 6 months, and which had been treated unsuccessfully with Omcilon-A Orabase. An incisional biopsy was performed, and microscopic analysis revealed clusters and nests of neoplastic epithelial cells, presenting nuclear pleomorphism, hyperchromatism, atypical mitoses, and keratin pearls, confirming the diagnosis of SCC. The sample was positive for p16 in immunohistochemistry, while it was negative for high-risk HPVs in in situ hybridization. The tumor was classified as stage III (T3N1Mx). The therapeutic approach included hemiglossectomy, neck dissection, and reconstruction with a free forearm flap, in addition to adjuvant radiotherapy and chemotherapy. Case reports are important to assist in early diagnosis, especially when SCC affects this unusual age group.

Keywords: oral squamous cell carcinoma, squamous cell carcinoma, tongue squamous cell carcinoma.

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CCPG08

Application and identification with dermatological ultrasound Polydioxanone threads used in orofacial harmonization

Sério ER*, de Araujo RM, de Carvalho PCK.

In facial harmonization, different materials are used to stimulate collagen, injected at the dermal and subcutaneous level. Products for this purpose are classified as permanent, semi-permanent and absorbable. Polydioxanone threads are solid and absorbable collagen biostimulators, used on the face, where one of the indications is the repositioning of ptosis tissues. In the present study, a clinical case was carried out with spiculated threads in the midface in a patient with no previous history of fillers in the region. Image records were made before and immediately after the procedure, after 30, 60 days and 90 days. Monitoring of the treatment was done through Doppler Ultrasound images after 24 hours, 30, 60 and 90 days, with the aim of monitoring changes in imaging aspects of this exam since the material is absorbable and aesthetic gains in skin quality.

Keywords: Collagen, Polydioxanone, Skin, Ultrasonography, Doppler

CCPG09

A PERI ORAL REJUVENATION WITH PDO THREADS AND HYALURONIC ACIDFILLER

Greca AR, Cintra TMF, Correa VAA, de Araújo RM

Collagen production decreases with age, leading to the loss of facial tissue support, and consequently the search for means to induce the production of lost collagen for dermal restructuring becomes recurrent. This work sims to show the action of PDO threads as collagen biostimulators in the perioral region and lip contour, for the treatment of local rhythms associated with the hiluronic acid filler for lip volumization. Case report: A 55-year-old female patient sought treatment with complaints about the loss of lip volume and the consequent appearance of perioral rhythms. The treatment plan included the insertion of 10 monofilament PDO threads in the upper perioral region, 4 PDO filler threads in the lower perioral region, 4 filler threads for lip contour, and the application of 1 syringe of hyaluronic acid for lip volumization. As a post-procedure, the patient was instructed not to expose the treated area to the sun while there were hematomas, and not to take anti-inflammatories avoiding any type of complications that could harm the treatment. Discussion: PDO Threads cause neocollagenesis, inducing fibroblasts to produce collagen, decreasing dermal flaccidity. Conclusion: Significant improvement was observed in the skin texture of the perioral region, as well as in the contour and volume of the lips, effectively rejuvenating the lower third of the patient's face. Thus, through this treatment it was observed that the use of PDO threads stimulates the production of collagen by softening the rytides in the perioral region (contraindicated region for the application of injectable biostimulators), improving the lip contour, and when associated with hyaluronic acid ensures volumization and a significant rejuvenating result.

Keywords: Collagen bioestimulation, PDO threads, perioral rejuvenation, hyaluronic acid filler, lip volumization, neocollagenesis.

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CCPG10

PANFACIAL FRACTURE AFTER A MOTORCYCLE ACCIDENT: CLINICAL CASE REPORT

Zuccolotto TC*, Silva IB, Toledo GCS, Sato FRL, Cavalieri I, Araujo MM

The treatment of panfacial fractures represents a challenge for oral and maxillofacial surgery, aiming for stable occlusion coupled with aesthetic/functional repositioning of facial bone segments. The objective of this study is to present a clinical case of reduction and fixation treatment for multiple facial fractures and discuss its treatment plan. Male patient, victim of a motorcycle accident, evolving with facial trauma. Computed tomography of the face revealed a fracture of the anterior wall of the frontal sinus, comminuted nasal bone fractures, bilateral orbital zygomatic complex fractures, maxillary fracture and mandibular. The patient underwent surgical reduction and fixation of segments under general anesthesia and tracheostomy. The procedure began with bone synthesis of the upper segments towards the mandible, along with the lateral segments moving towards the center of the face. The patient has been followed up for a year, showing good progress, but with a visual deficit as a sequel to the trauma. A reapproach has not been ruled out. According to the literature, the treatment of multiple facial fractures should be performed gradually, with the main objective being the restoration of occlusion and vertical dimension of the face through stabilization of the maxillomandibular complex. Treatment should be based on multiple clinical and imaging factors, aiming to safely restore the function of the stomatognathic system and facial aesthetics for the patient.

Keywords: Osteosynthesis; Multiple Fractures; Face

CCPG11

Infectious complication following pre-auricular surgical approach of the temporomandibular joint: an alternative management route

Silva, LA*, Lupp JS, Moraes MB, Raldi FV, Sato FL.

The most common surgical approach to treat temporomandibular dysfunctions involves pre-auricular access, minimizing damage to nearby anatomical structures. Although rare, surgical complications such as infections can render this approach unfeasible, jeopardizing the structures and resulting in serious clinical consequences. With the aim of presenting an alternative access following an infectious surgical complication, a case is reported involving a 21-year-old female patient referred to the Oral and Maxillofacial Surgery and Traumatology Department at Hospital Geral Vila Penteado in São Paulo. She complained of intense pain when opening her mouth and difficulty in performing this movement. In the medical history, a previous diagnosis of temporomandibular dysfunction caused by bilateral anterior displacement of the articular disc was reported, for which she underwent discopexy surgery with anchoring of the disc using mini-implants for correction. Clinical examination revealed a mouth opening of 25mm, joint clicking sounds upon opening and closing the mouth, and the presence of a fistula with subtle purulent discharge in the pre-auricular region on the right side. Panoramic radiography revealed dislodging of the fixation anchors. In light of these findings, the chosen treatment approach involved performing fistulectomy followed by removal of the anchors through a post-auricular access due to potential esthetic defects and risk of facial nerve injury. The adopted management proved to be effective, as evidenced by the improvement in the patient's clinical condition, who continues to receive regular follow-up.

Keywords: Temporomandibular Joint Disorders; Postoperative Complications; Surgical Site Infection; Reoperation.

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CCPG12

Pulse granuloma associated with ameloblastomas: report of 3 cases

SILVA TXP*, FARIA NC, TANGO EK, ARAUJO MM, SILVA CD, ANBINDER AL.

Pulse granulomas (PG), also known as hyaline bodies, are microscopic eosinophilic, irregular, or round structures that include multinucleated giant cells, inflammatory cells, blood vessels, and collagen fibers. Their etiopathogenesis is not fully clarified and there are two theories: endogenous and exogenous. The first asserts that degeneration of blood vessel walls leads to the formation of hyaline bodies. The exogenous theory, currently the most accepted, argues that the implantation of particles from food (of plant origin) into tissues results in the formation of PG. PGs are observed in about 10% of odontogenic cysts and are rarely found in odontogenic tumors. This study aims to report the occurrence of PGs in three ameloblastomas. Two men and one woman presented with radiolucent lesions in the posterior region of the mandible, affecting adjacent structures. In two of the cases, after incisional biopsy and prior to excisional biopsy of the lesion, decompression or marsupialization maneuvers were performed. Upon microscopic examination of all cases, hyaline structures were observed within the connective tissue, surrounded or enveloped by multinucleated giant cells, corresponding to PGs, in addition to the typical characteristics of ameloblastoma. Because this is an uncommon finding, the pathologist needs to be aware of it, so as not to confuse it with other hyalinized structures, which could delay or add uncertainty to the diagnosis.

Keywords: Ameloblastoma, Foreign body granuloma, Pathology.

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CCPG13

MUCOCELE: HISTOLOGICAL CHARACTERISTICS THAT CAN COMPLICATE DIAGNOSIS

Faria NC*, Tango EK, Silva TXP, Vieira MN, Ribeiro JL, Anbinder AL

Mucoceles are common lesions in the oral cavity, resulting from the extravasation of mucin into the soft tissues due to the rupture of salivary gland ducts. Their etiology is generally associated with local trauma and has a preference for the lower lip. Histologically, they are characterized by mucoid material surrounded by granulation tissue, although various structures may also be present. This study aims to present a series of six cases of mucoceles to discuss some uncommon histopathological features. In five cases, the lesions occurred on the lower lip, with four females and two males, and an average age of 16 years. Clinically, the lesions presented as sessile nodules, and excisional biopsies were performed for diagnosis. In addition to the basic characteristics for histological diagnosis, giant cells, eosinophilic globules, macrophages organized in a palisade pattern, and areas resembling synovium were found. Furthermore, a case of organizing mucocele was also reported, as well as another associated with the Blandin-Nuhn glands, mixed glands located on the anterior ventral surface of the tongue. Although the histopathological characteristics of mucoceles are easily interpretable, the identification of less common microscopic structures is important to avoid diagnostic errors and provide the best treatment for patients.

Keywords: Mucocele; Mouth mucosa; Salivary glands; Pathology; Diagnosis.

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CCPG14

Importance of Nursing Care for bedridden older patient with pressure ulcers, in stage I to IV: a clinical case report

GOMES, MF; MAIA, SA; NUDI, RS; BERTOLINI, LA; MATOS, CED; **AMORIM JBO.**

This work aimed to show the importance of nursing care with multiprofessional interventions for bedridden older patient with pressure ulcers or decubitus bedsores, in stages from I to IV. An older man with multiple disabilities (physical and hearing disabilities), dementia, and 79 years old had a femur fracture two years ago. After 5 days of surgery, the same patient had another fall during his daily activities, resulting in his permanent physical limitation. Pressure ulcers, in stages I to IV, were found in the sacral, heel, scapular, and lumbar regions. Brownish, extensive, and irregular patches were seen on the left leg, which were suggestive of stasis dermatitis due to venous insufficiency. The treatment was carried out at patient´s home by multiprofessional. The patient showed total and partial edentulous in the upper and lower arches, respectively. Infected residual roots and carious lesions on the lower incisors were also identified. With regard to the therapy of the *pressure ulcers* (stage III and IV), dressings were performed using gel ointment with polyhexamethylene biguanide (PHMB) and a sterile plate of natural polymer of calcium and sodium alginate, besides the physiotherapeutic intervention. A palliative therapeutic approach was done because the patient died before finishing the treatment. Therefore, we can conclude that nursing care promoted a humanized palliative therapy for this patient profile, contributing to the construction of a truly inclusive society.

Keywords: Home care, Oral Medicine, Pressure ulcer.

Undergraduate – Laboratory Trials

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ELG01

Evaluation of the performance of different temporary cements in printed crowns

Gonçalves NMF*, Siqueira JCRS, Ramos NC, Bottino MA

Temporary restorations obtained by additive manufacturing present satisfactory mechanical behavior, however there is a lack of studies in the literature that evaluate different materials recommended for cementation. Therefore, the objective of this study was to evaluate the tensile strength of temporary cement associated with printed full crown restorations for the upper first molar, made with a material analogous to dentin, called Nema G10. The preparations were designed and machined with Nema G10 resin, followed by scanning to obtain 36 Resilab Temp (Wilcos) crowns printed on the Anycubic printer. The samples were distributed into 3 experimental groups for cementation: zinc oxide without eugenol (OZnE), calcium hydroxide (HC) and glass ionomer (IOV). The specimens were included in PVC tubes, followed by storage in an oven at 37°C for 24 h. The immediate test was performed on 6 samples from each group. In the remaining specimens, the test was carried out after aging in a thermocycler. The data obtained were evaluated by 2-way ANOVA and 95% Tukey test. 24 hours after cementing with IOV, high tensile strength values were observed (165.85 ± 29.86), followed by OZnE and HC. With simulated aging, similar effectiveness was noted between the three cements evaluated. Therefore, IOV, OZnE and HC cements are indicated for temporary cementation of printed crowns.

Keywords: Dental Restoration, Temporary, Three-dimensional printing, Cementation.

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ELG02

BEHAVIOR OF THE ASSOCIATION BETWEEN MOUTHGUARD AND POLYAMIDE REINFORCEMENT MESH ON IMPACT ABSORPTION IN ANTERIOR MAXILLARY REGION: IN SILICO AND IN VITRO ANALYSIS

Borro LH*, Junior TJAP, de Queiroz TS, Tribst JPM, Lopes GRS, Borges ALS.

This study evaluated in vitro and in silico dentoalveolar responses in central incisors to trauma in the anterior region of the maxilla, using mouthguards (MG) reinforced with polyamide mesh in three different locations. The study groups were divided into skull with conventional PB in EVA (ethylene vinyl acetate) with 4 mm thickness; PB in 4mm thick EVA (control) with reinforcement at 1mm (Mg 1+3), 2mm (Mg 2+2) and 3mm (Mg 3+1) from the vestibular limit. In the in vitro study, a skull model was printed in Spin Red Resin - Quanton 3D covering the maxillary region and teeth individually in Resilab Clear - Wilcos resin and the periodontal ligament was simulated in addition silicone. To measure the microdeformations, extensometers were placed in the alveolar process of the maxilla and in the center of the crowns of teeth 11th and 21th, parallel to their long axis. The BP were produced in EVA with reinforcements according to each group (n=10). The impact was performed by a specific machine developed, applying Ep=0.5496 J of energy, with force within the elastic limit of the skull material in the horizontal direction parallel to the ground and perpendicular to the contact surface of the 35mm sphere. In the in-silico study, the four groups were modeled and analyzed by dynamic explicit analysis, simulating impact through a steel sphere with 35mm in diameter and 7.8 g/cm³ of density at 1m/s with all conditions similar to the in vitro study. The materials were considered isotropic, homogeneous and linear. The contacts followed the same physical conditions of the in vitro test (frictional and glued). Meshes were defined with tetrahedrons after 10% convergence. The main maximum deformations and stresses in the teeth and in the maxilla were presented in colorimetric graphs. The data obtained from the in vitro study were submitted to the Shapiro-Wilk, Kruskal-Wallis and Dunn's multiple comparison test (5% significance). The results show a statistical difference for the group without reinforcement in relation to the other groups (p = 6.8x10-5), in relation to the microdeformations (με) in the different areas of impact, it was not possible to observe a statistical difference (p = 0.879). The results of the finite element analysis corroborated the in vitro study by extensometry, which allows validation of theoretical and practical models for future analysis.

Keywords: mouthguard; dental trauma; reinforcement mesh; biomechanical response.

EL03

ANALYSIS OF MECHANICAL BEHAVIOR AFTER HYDROTHERMAL AGING OF A NANOHYBRID 3D PRINTING RESIN

Prata JM*, Siqueira JRCS, Chahin VS, Calvache LA, Ribeiro NCR, BOTTI MA.

The study aimed to evaluate the mechanical properties of a nanohybrid 3D printing resin before and after thermal aging (Nanolab – Wilcos do Brasil). Samples were designed using Rhinoceros 6.0 software, exported in stl format to determine printing patterns in W3D software, and printed on the W3D printer in disk (10x10x2mm) and bar (60x10x5mm) formats. After cleaning in an ultrasonic bath (1 min), post-processing was conducted for 1 hour in the Anycubic photopolymerizer. Mechanical tests included Vickers microhardness (Shimadzu HMV-G21DT microdurometer) with three indentations at different points on the disk (n=5) and elastic modulus using the pulse receiver equipment (MOD 5900 PR, Olympus, USA) connected to an oscilloscope (TDS 1002, Tektronix, US A) by the pulse-echo method. Both tests were applied before and after aging. Results were analyzed using one-way ANOVA and Tukey's 95%, revealing significant differences in Vickers microhardness and elastic modulus between immediate and aged groups. The findings suggest a reduction in microhardness and elastic modulus over time.

Keywords: Printing, Three-Dimensional; Composite Resins; Hardness Tests; elastic modulus.

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ELG04

Analysis of the bond strength of soda lime glass to resin cement

Nogueira VF*, Silva AC, Campos TMB, Melo RMM

The objective of this study is to evaluate the bonding strength of resin cement to soda-lime glass with and without silver. 45 specimens of 5Y-PSZ zirconia were sintered and distributed as the following(n=15): C (zirconia + blasting with AlO4 (aluminum oxide) particles), SL (zirconia + soda-lime glass) and SLAg (zirconia + soda-lime glass with silver). For the SL and SLAg groups, the glass powder with and without silver were mixed separately in Propylene Glycol, applied to the specimens and sintered, while group C was sandblasted. The SL and SLAg groups were conditioned with 10% hydrofluoric acid for 60 seconds, then roughness test (Ra; Rz) was performed for all groups. The silane agent was applied for 60 seconds to the specimens and the resin cement cylinders (Ø1.8 x 2mm) were fixed on its surface. The microshear test (MPa) was performed using a universal testing machine (50 kgf, 0.5 mm/min). The samples were analyzed under a stereomicroscope to determine the failure mode. Data were analyzed using one-way ANOVA test (α=0.05). The SL group showed highest surface roughness: (Ra: 1.111; Rz: 6.26), SLAg (Ra: 0.691; Rz: 4.02) and C (Ra: 0.569; Rz: 3.97). However, the SLAg group presented the highest microshear strength: (23.15 MPa), SL (19.64 MPa) and C (17.22 MPa) ($p<0.05$). Group C presented adhesive failures, cohesive failures of the glass for group SL and SLAg predominantly adhesive failures. Within this perspective, the SLAg group showed the highest bond strength to resin cement when compared to sandblasted 5Y zirconia.

Keywords: Glass. Mechanical tests. Dental Cements. Dental materials.

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EL05

Effect of the association of fluorides with aminomethacrylate biopolymer on initial erosion: In situ randomized crossover study.

Santos KC*, Prado TP, Torres CRG, Scaramucci T, Aoki IV, Borges AB.

This randomized, crossover, and in situ study evaluated the anti-erosion potential of fluoride solutions associated with aminomethacrylate biopolymer on enamel. Twelve volunteers installed an intraoral device containing bovine enamel specimens. After 5 min, they performed the mouthwash (1 min) with one of the tested solutions: Ultrapure water (C); Fluorine (F, 225ppm F^-); Stannous Chloride (S, 800ppm Sn^{+2}); Aminomethacrylate (AMC, 2%); FS; AMC+F; AMC+FS and remained for 30 min with the device to allow maturation of the acquired pellicle. The specimens were then challenged with 0.03% hydrochloric acid, pH 2.3, and 3 min extra orally. These steps were repeated 5 times. Each solution was tested in a different phase with the same volunteers, with a 2-day washout interval. The specimens were subjected to Knoop surface microhardness analysis before and after cycling, to calculate the percentage of microhardness reduction (%KHNred). Additionally, the concentration of fluorine soluble in KOH (µg/cm²) on the surface of the specimens was determined. Data were analyzed with RM-ANOVA and Tukey (5%). The mean %KHNred values were: C (-37.7 ± 4.6)^A, S (-37.8 ± 4.9)^A, AMC (-26.8 ± 2.5)^B, F (- 31.0 ± 3.4)^B, FS (-30.3 ± 5.0)^B, AMC+F (-21.0 ± 4.9)^C, AMC+FS (-19.3 ± 4.1). The KOH-soluble fluorine concentration results were: C = S = AMC < F < AMC+F ≤ AMC+FS ≤ FS. It was concluded that the AMC biopolymer increased the anti-erosive effect of fluoride, and fluorine associated with tin, in the presence of the acquired pellicle on enamel.

Keywords: Tooth Erosion, Dental Enamel, Polymers, Sodium Fluoride.

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ELG06

Color and translucency analysis after staining of nanohybrid resin for printing

Chahin VS*, Souza KB, Prata JM, Siqueira JRCS, Bottino MA, Ramos NC

The aim of this study is to evaluate the optical properties (translucency and color) of a nanohybrid printing resin after staining. For this, 12 blocks of nanohybrid resin (7 mm x 7 mm x 2 mm) were manufactured, designed using Rhinoceros 7 Software and printed on a 3D printer using the digital light processing (LCD) method. After printing, the specimen holders were removed, the samples were cleaned in isopropyl alcohol for 4 minutes in an ultrasonic cleaner and dried with oil-free compressed air for 20 seconds. The specimens were then taken to a polymerizer for 60 minutes. The specimens were immersed in coffee in a proportion of 250 ml of boiling water to 25 g of instant coffee, changed every 2 days. Color and translucency recording was carried out at 0, 7, 14, 21 and 30 days using a spectrophotometer (Vita EasyShade® -Vident - Brea, CA, USA) with readings under a black, white and gray background. The data obtained using the CIEDE2000 formula were subjected to the Kruskal-Wallis One Way test followed by the Dunn test for translucency and ANOVA-1 factor followed by Tukey 5% for color. The results showed that there was a decrease in translucency after 21 days of immersion ($p = 0.003$). For color measurement, it was observed that all groups were statistically different ($p < 0.05$), with the exception of the 21- and 30-day groups, which showed statistical similarity. Therefore, we can conclude that the nanohybrid resin, after immersion in coffee for 30 days, changes color after 7 days and translucency is affected after 21 days.

Keywords: Three-Dimensional Printing, staining, optical properties.

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EL07

Longitudinal effect of dentin pretreatment with a remineralizing substance and the use of conventional adhesive without phosphate monomer

Barros JL, Silva-Junior JP, Mendonça RP, Campos TMB, Silva TM, Gonçalves SEP.

The objective of this work was to compare the remineralizing potential of two substances, a-wollastonite and combeite, used in solution as post-etching dentin pre-treatment, of a conventional 2-step Etch-and-Rinse (ER) adhesive system, free of monomer. phosphate in its composition. Thirty-nine dentin surfaces of bovine teeth were exposed and divided into 3 groups (n=13): Control (CER), Wollastonite (WOL) and Combeite (CMB). Three samples were used for ATR-FTIR reading, and another 10 were subjected to restoration and cutting into sticks for microtensile resistance testing, subdivided according to storage: Immediate (24h in distilled water) and Longitudinal (1h in 12% NaOCl for accelerated chemical aging equivalent to 12 months). The data were treated by 2-way ANOVA and Tukey 5% ($p<0.05$). No statistical difference was detected between the groups in each storage period, however, they all suffered similar degradation in bond strength after accelerated aging. In FTIR, both substances promoted significant remineralization after dentin conditioning. The use of the substances as pre-treatment did not promote significant changes in the longitudinal adhesive strength of dentin when associated with conventional adhesive without phosphate monomer, despite having been shown to be capable of promoting remineralization after acid etching. New studies must be conducted to investigate the effectiveness of these substances with adhesives of other formulations.

Keywords: Dentin Adhesives, Dental Remineralization, Dental Materials

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ELG08

BOND STRENGTH FOR STAIN AND GLAZE REPAIR IN HYBRID CERAMIC: EFFECTS OF DIFFERENT SURFACE TREATMENTS

Passarelli LA*, Demachkia A, Marinho RMM

Hybrid ceramic is a composite material combining ceramic and composite resin, manufactured through computer-aided design and computer-aided manufacturing (CAD/CAM). It is advantageous due to its facile adaptability and a modulus of elasticity similar to dentin. Pigment and glaze application are achieved through photopolymerization, although over time, the pigmentation layer may experience wear. The objective of this study was to assess the bond strength and effects obtained on hybrid ceramic with different surface treatments, including the reapplication of glaze and pigment. Initially, ceramic blocks were cut and polished. Each specimen underwent surface treatment with 5% hydrofluoric acid for 60 seconds, followed by washing, drying, and silanization. The specimens underwent aging in a brushing machine until the entire characterization layer (pigment + glaze) was removed. After wear, the specimens were placed in artificial saliva for 1 week. The specimens were randomly divided into 4 groups based on surface reconditioning (water rinse, self-etch ceramic primer, hydrofluoric acid, and aluminum oxide). Subsequently, the specimens underwent silanization, pigment and glaze application in microtubes, and photoactivation. Microshear bond strength testing was conducted using a 50 Kgf load cell and a 1 mm/min crosshead speed, employing a steel wire (Ø 0.2 mm) in a loop configuration. The maximum load sustained until cylinder displacement was recorded. The samples were examined under a stereomicroscope to classify the type of failure, and representative samples were analyzed using scanning electron microscopy. Data were assessed for normality and homoscedasticity and subjected to statistical tests.

Keywords: Hybrid ceramics, Surface reconditioning, Bond strength.

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ELG09

ANALYSIS OF THE CHEMICAL ADHESION OF UNIVERSAL ADHESIVES TO LEUCITE-REINFORCED FELDSPATHIC CERAMICS THROUGH DUAL CEMENTATION

Arruda CC*, Silva JFG, Assis RASS, Mendonça RP, Grangeiro MTV, Marinho RMM

The aim was to assess a universal adhesive's impact on the bond strength between leucite-reinforced feldspathic ceramic and a resin cement, both with and without aging. IPS Empress CAD blocks were sectioned into 1.9 mm thick slices, embedded in acrylic resin and polished with #1200 grit sandpaper. The specimens were conditioned with 5% hydrofluoric acid for 60 seconds and divided into 6 groups according to the protocol prior to cementation and ageing (n=30): AD - adhesive only (Tetric-N-Bond); Sil+AD - silane (Monobond N) + adhesive; Sil - silane only; EAD - adhesive only + aging; ESil+AD - silane + adhesive + aging; ESil - silane only + aging. Cylinders of a dual resin cement (Multilink N - Ø0.96 × 2 mm) were made. The micro-shear bond strength test for the unaged groups was carried out after 24 hours and for the aged groups after 5000 cycles in a thermal cycler. Failure modes were analyzed using a stereomicroscope and scanning electron microscope. The data was analyzed using two-factor ANOVA and Tukey's 5% test. There was a statistically significant difference when comparing the groups with and without aging, with the groups without aging showing higher bond strength values, of which the Sil+AD group showed higher bond strength. The Sil+AD group showed better adhesion, but after ageing there was a significant reduction in adhesion.

Keywords: Ceramics; Dentin-Bonding Agents ; Dental Materials.

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ELG10

STRESS DISTRIBUTION OF DIFFERENT INTRARADICULAR RETAINERS IN MAXILLARY INCISORS WITHOUT FERRULES: FINITE ELEMENT ANALYSIS

Pereira GM.

The objective of this study was to evaluate the effect of the type of intraradicular retainer on endodontically treated maxillary central incisors without a ferrule using finite element analysis (FEA). Seven models of upper central incisors were created using three-dimensional modeling software. The types of pins evaluated are: Double conical fiberglass (PFV) pin (DC Group); double conical PFV relined with composite resin (DC-R Group); Serrated PFV (SE Group); Serrated PFV relined with composite resin (SE-R Group); Two-piece universal PFV (SAP); PFV customized by CAD/CAM (CTM); and molten metal core (NMF). All models received full ceramic crowns reinforced with lithium disilicate crystals. The models were imported into the finite element analysis software using the maximum principal stress as the failure criterion. A load of 200 N was applied to the cingulum region with an inclination of 45° in relation to the long axis of the tooth. The geometries were considered homogeneous, linearly elastic, with perfectly bonded contacts and isotropic. For both the restoration and the tooth structure, the NMF group presented the worst biomechanical behavior, while the DC-R group presented the lowest tensile stress peaks. Qualitatively, the other groups showed no difference, both for the restoration and for the tooth structure. Therefore, the DC-R group had a more favorable biomechanical behavior for both the tooth and the restoration.

Keywords: Fiberglass Posts, Finite Element Analysis, Technique for Intraradicular Retainer.

EL011

INFLUENCE OF A NEW PHOTOPOLYMERIZATION SYSTEM ON THE ADHESION OF A HIGH TRANSLUCITY ZIRCONIA RESTORATION

França CG, Gomes LCL, Silva JFG, Paes Junior TJA.

Evaluate the influence of a new photoactivation system on improving the polymerization of resin cements and adhesive resistance of a zirconia restoration. 48 zirconia slices were cemented into dentin substrate and randomly distributed into 4 groups according to the type of light-activation system applied and the type of resin cement (dual curing and light-cured). For alternative photoactivation, a fiber optic device was used, which conducted the LED light from the photopolymerizer. Then, the microshearing test was carried out on the EMIC to analyze the adhesive strength and the data were analyzed by 2-way ANOVA and Tukey with $p<0.05$. The groups with dual cement obtained the highest value of adhesive resistance, among the groups with photoactivated cement, direct activation with a fiber optic illuminator obtained the highest adhesive resistance. Therefore, the direct photoactivation system with the fiber optic illuminator was relevant in improving adhesive resistance in groups with photoactivated cement, allowing better light conduction in difficult-to-access regions. The new device could be a promising alternative for improving the mechanical properties of resin cements applied in clinical use.

Keywords: Ceramics, Resin Cements, Adhesiveness, "Denture, Partial, fixed"

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ELPG01

IMPACT OF SIMULATED BRUSHING AND TOOTHPASTE ABRASIVITY ON HYBRID RESTORATIVE MATERIALS AND DENTAL ENAMEL

Souza LS*, Grangeiro MTV, Andrade GS, Bresciani E.

The study evaluated the effect of toothpaste abrasiveness on roughness, surface gloss, and microhardness of resin materials compared to tooth enamel. The study consisted of a 4 x 3 factorial design, with the substrate factor at 4 levels: Hybrid ceramics - Vita Enamic (VE); Hybrid Ceramics SHOFU Block HC (SB); CAD/CAM nano-hybrid resin block – Grandio Blocs (GB) and Natural Enamel (ESM); and the toothpaste abrasiveness factor in 3 levels: low=36 (B); average=78 (M); extra-high=175 (XA). For this, discs (n=15 per group) of LV, SB, GB, and ESM (6 mm in diameter, 2 mm thick) were made. The gloss and surface roughness were evaluated before and after the brushing simulation. Additional analyses such as microhardness were also performed. The mean and standard deviation were calculated. Inferential statistics consisted of normality and homoscedasticity tests and based on these, the three-factor ANOVA test of repeated measures and Tukey's test ($p<0.05$) were used. Group GB showed a brighter surface initially, but after brushing it was the material that showed lower gloss values; regarding the microhardness parameters, Sensodyne Pró-Esmalte and Colgate Total 12 dentifrices increased the microhardness of the VE group and decreased the hardness of the ESM; there was similarity between the groups when the roughness of the material was analyzed, except the control group (ESM). It is concluded that the surface gloss was influenced by brushing, the roughness was changed only in the ESM, and, about hardness, changes were observed in the VE and ESM groups.

Keywords: Dental Materials. Dental Restoration Wear. CAD-CAM. Toothbrushing. Modified Ceramics.

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ELPG02

Microstructure, optical and mechanical properties of a 3D printed nanohybrid resin

Arcila CLV*, Ramos NC, Campos TBM, Santos Siqueira JRC, Bottino MA

The study evaluated the microstructure, optical and mechanical properties of a nanohybrid resin for 3D printing. Bars and squares were designed in modeling software (Rhinoceros, 6.0), printed with the nanohybrid resin (Nanolab Resin, Wilcos) for LCD printer (Anycubic Photon Mono Se 3D), and post-polymerized in a cure equipment (Anycubic Cure 2.0) in 4 times (No polymerized [NP], 16 min, 32 min and 1 h). The characterization was via Scanning Electron Microscopy. For mechanical and optical properties, flexural strength, microhardness, elastic modulus, color and translucency were performed respectively. All tests except flexural strength were performed before and after hydrothermal aging. Micrographs revealed similar microstructures between groups. The highest flexural strength was for the 32 min group (134.00 ± 8.96 MPa), while the lowest was for the NP (102.35 ± 8.16 MPa). Microhardness and elastic modulus were higher for the non-aged groups and lower for the aged ones. The NP and 16 min groups showed unstable color, while the 32 min and 1 h groups showed color stability. The NP and non-aged group showed greater translucency, while all aged ones were similar. In conclusion, the microstructure was similar in post-polymerization times, the non-aged groups showed greater translucency, hardness and elastic modulus; the 32 min group showed greater color stability and Flexural Strength.

Keywords: 3D Printing, Dental Materials, Aging

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ELPG03

Texture maps for detection of simulated bone defects in the mandibular condyle by cone beam computed tomography images

Santos LF*, Ribeiro LF, Oliveira VGB, Moura NB, Fardim KAC, Lopes SLPC

The study evaluated the performance of texture map (TM) images in identifying mandibular condyle (MC) bone defects in cone beam computed tomography (CBCT) images, comparing the spatial resolution of the images. 03 bone defects were made in 08 macerated MC (0.9, 1.0, 1.2 mm), arranged in two lines at the lateral/medial (L and M) and anterior/posterior (A and P) poles, passing through the central point (C). The points were marked by hyperdense material, forming 04 semi-straight lines, where 01 defect was produced, except in one. Two CBCT resolutions were used - 0.20 and 0.40 mm. The OnDeman3D software generated 02 slices for each MC (LCM and ACP). In the MaZda 4.60 software, a region of interest (ROI) was determined, encompassing the MC. By the analysis (TA), images were generated in 07 different parameters (TM). The images were coded and analyzed by 03 evaluators as to the presence of defects between each semi-straight, with scores: absent; present and inconclusive. McNemar's test was used to compare hits with and without TM and between resolutions, and Fisher's exact test to compare hits in relation to dimensions. There was greater agreement between the evaluators in the images with TM contrast and less with TM entropy. The TM entropy showed differences in the 03 evaluators at a resolution of 0.20mm ($p<0.05$). There was no difference in the number of correct identifications of defects with the variation in spatial resolution. Images with TM contrast favored agreement between the examiners in the analyses, regardless of the spatial resolutions adopted.

Keywords: Cone-Beam computed tomography, Mandibular condyle, Texture analysis,

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ELPG04

EFFECT OF EXTRINSIC CHARACTERIZATION ON THE MICROSTRUCTURE AND PROBABILITY OF FATIGUE SURVIVAL OF A HIGHLY TRANSLUCENT ZIRCONIA

Barreto LAL*, Ramos NC, Grangeiro MTV, Dal Piva AMO, Tribst JPM, Junior LN

This study evaluated the surface roughness and fatigue strength (probability of survival) of polished zirconia characterized with extrinsic pigmentation and/or glaze in a precision cutting machine, with constant water cooling. In this way, 60 discs with 12 mm in diameter and 1.2 mm in thickness were obtained, randomly distributed among the Groups: P-polishing, CG- characterization and glaze, and G-glaze, according to the manufacturer. The discs were subjected to a biaxial flexion test in a universal testing machine, at constant speed (0.5 mm/min) until failure (n=3), to determine the average fracture load, in order to establish the profile of the fatigue test load. The load profile used started at 120 N with an increase of 5% of the initial load at each step, in intervals of 20 thousand cycles at a frequency of 4Hz. The probability of survival analysis was performed with Kaplan- Meier and Mantel-Cox (Log-rank, 95%), indicating that the G group had a greater resistance to fatigue and a greater number of cycles required for fracture, being statistically different of the other groups. It was possible to conclude that surface characterization alters the mechanical behavior of high translucency zirconia. Polished-only high-translucency zirconia has lower fatigue strength than surface glaze treatment, which promotes a greater likelihood of long-term survival.

Keywords: Ceramics. Dental materials. CAD-CAM. Fatigue.

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ELPG05

Antimicrobial effect of Ti6Al4V alloy covered with diamond-like carbon film (DLC) doped with silver

Casarini CM*, Pignataro RRDG, Vegian MRC, Sobrinho ASS, Koga-Ito C, Junior LN.

The objective of this study was to evaluate the antimicrobial effect of diamond-like carbon film (DLC) doped with silver nanoparticles (Ag), deposited on Ti6Al4V alloy discs. DLC and DLC-Ag films were deposited using the PECVD (Plasma Enhanced Chemical Vapor Deposition) process. The characterization of the material was carried out by scratch test analysis, Raman scattering spectroscopy and energy dispersive spectroscopy (EDS). Antimicrobial activity was evaluated using a standard strain of Enterococcus faecalis (ATCC 29212). For all analyses, the samples were divided into 3 groups according to the type of treatment: Control group (no treatment); DLC Group, samples coated with DLC film, DLC-Ag Group, samples coated with DLC film with silver. The samples were analyzed by SEM. The data obtained were analyzed with ANOVA and Tukey tests for comparisons between groups. The significance level for all tests was set at 5%. The results demonstrated that the deposition of the DLC and DLC-Ag film was effective, and the microbiological tests showed a significant reduction ($p<0.05$) in the CFU/ml count on the discs. We conclude that coating with DLC and DLC-Ag has an antimicrobial effect and is a promising surface treatment on Ti6Al4V.

Keywords: Titanium; Antimicrobial action, Enterococcus faecalis.

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ELPG06

Influence of Surface Treatments on the Bond Strength between 3D Printed Nanohybrid Resin and Resin Cement

Santana SC, Rodriguez RMM, Siqueira JRCS, Ramos NC, Bottino MA.

The aim of this study was to evaluate the bond strength between a 3D printed nanohybrid resin and resin cement after different surface treatments and aging. 120 blocks of the resin (Nanolab 3D, Wilcos do Brasil) were manufactured, printed on the W3D Print (Wilcos do Brasil). Five surface treatments were performed: no treatment, hydrofluoric acid conditioning, Al3O2 blasting, immersion in methyl methacrylate monomer (primer), and a group combining blasting with primer. Conventional dual resin cement cylinders (< 1 mm2) were built on the treated surfaces. Bond strength was measured using a microshear bond test with wire. Half of the samples from each group were tested seven days after cementation, the other half was thermocycled for 12,000 thermal cycles (5-55 oC, 30 seconds each) and then tested. After the inferential analysis with 2-factor ANOVA, it was possible to observe that there was a statistically significant difference for both the surface treatment and aging factors. Thermal cycling increased the bond strength of the printed resins and decreased it in the machined resin. Thus, the application of silane is the best surface treatment for 3D printed nanohybrid resin. The long-term adhesive strength of the 3D printed hybrid resin (Nanolab) is positively influenced by aging.

Keywords: Shear Strength, Printing, Three-Dimensional, Resins, Materials Science

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ELPG07

EFFECT OF CAD-CAM RESTORATIVE MATERIALS ON THE FABRICATION OF *ENDOCROWNS*: AN *IN VITRO* STUDY ON HARDNESS AND MECHANICAL STRENGTH.

Neto AJT, Raimundo ACM, Silva CML, Grangeiro MTV, Figueiredo VMG

The objective of this research was to evaluate the effect of restorative materials for CAD-CAM in the manufacture of endocrown restorations, through an in Vitro study on hardness and fracture resistance. For the study, cad-cam blocks were transformed into discs 12 mm in diameter and 1.2 mm thick (specimens). Three restorative materials were evaluated and distributed into experimental groups (N=12 specimens): Leucita- Reinforced Ceramic/ IPS Empress CAD (MRleu), Lithium Disilicate/ IPS Emax CAD (MRdis) and Nanoceramic Resin /Lava Ultimate (MRres). These restorative materials were evaluated for morphology (N=1) by Scanning Electron Microscopy (SEM) and surface chemistry (N=1) by dispersive energy spectroscopy (EDS). The specimens were evaluated when the Vikers microhardness (N=1) with a load of 1kg and 10 indentations, as well as the resistance to biaxial flexion (N=10) at a test speed of 0.5 mm/min. The fragments after the fracture were observed under a stereomicroscope. The results obtained were tabulated and analyzed in the Minitab statistical program. The results showed that the MRdis material obtained superior results in relation to hardness (P=0.000) and biaxial bending resistance (P=0.000), followed by MRleu and finally the MRres. The presence of inorganic particles on an organic matrix and the presence of Zirconium (Zr) stands out in Lava Ultimate. It was concluded that restorative materials for CAD-CAM in the manufacture of Endocrowns restorations have a significant effect on hardness and mechanical strength.

Keywords: Ceramics. CAD-CAM. Hardness. Flexural Strength.

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ECG01

Effects of lesion size and type of composite resin on the 30-month clinical performance of restorations in noncarious cervical lesions

Marques BC*, Correia AMO, Jurema ALB, Bresciani E, Caneppele TMF

The size of non-carious cervical lesions (NCCLs) and their influence on restorations is questionable. Therefore, the aim of this double-blind, randomized trial was to evaluate this influence on the clinical performance of restorations with a bulk fill resin and a regular nanofilled resin composite. One hundred fortyNCCLs in 77 participants were divided into 4 groups, according to occlusogingival distance (OGD) (1.5 mm±10% or 3 mm±10%) and resin composites (Filtek Bulk Fill Posterior [B] or Filtek Z350 XT [C]), namely: 1.5 mm-B, 1.5 mm-C, 3 mm-B, and 3 mm-C. The restorations were bonded using a two-step self-etch adhesive (Clearfl SE Bond). After 1 week, the restorations were polished. 2 examiners evaluated using modified US Public Health Service criteria at 7 days and 6, 12, 18, 24, and 30 months. Statistical analysiswere carried out using Kruskal-Wallis, Wilcoxon, and Friedman repeated measures tests (α=0.05). After 30 months, the recall rate was 94.2%; 8 restorations were lost. All groups had a worse marginal discoloration and surface texture compared to the initial phase (one week). In other parameters, there were no significant differences. Therefore, the restorations performed with both resincomposites had clinically acceptable results. The OGD of NCCLs didnot influence the clinical performance.

Keywords: composite resins, permanent dental restoration, double-blind method, clinical study

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ECG02

CLINICAL AND SALIVARY ANALYSIS OF VAPE USERS

Silva KCS*, Faria NC, Carvalho BFC, Silva MFM, Almeida MGS, Almeida JD

The aim of this study was to evaluate the clinical and salivary profile of vape users and compare it to non-smokers and non-vape users. Unstimulated saliva was collected from 50 patients, divided into two groups: Vape Group (VG), consisting of 25 exclusive vape users for at least 6 months, and Control Group (CG), consisting of 25 non-smokers and non-vape users. Clinical analysis of the participants included parameters such as age, sex, heart rate, oximetry, capillary glycemia, and exhaled CO concentration. The salivary analysis encompassed salivary flow rate, viscosity, pH, and buffering capacity. Alcohol consumption was assessed through average drinks and the AUDIT test. The usage time of the vape device by VG individuals was 2.06 ± 1.32 years, with 68% of participants using the vape 3 to 7 days a week. Around 40% of individuals showed a usage frequency greater than 10 times per day, with a nicotine consumption of 37.20 ±61.10 mg/day. The Mann-Whitney test with a significance level of 5% demonstrated that the VG differed and had higher results compared to the CG in terms of exhaled CO concentration and AUDIT test, and lower results in oximetry and salivary viscosity. In conclusion, vape users exhibit higher levels of alcohol consumption and lower salivary viscosity, as well as significant changes in respiratory capacity, as demonstrated by increased exhaled CO concentration and decreased oximetry.

Keywords: Saliva. Electronic nicotine delivery systems. Vaping. Alcohol Drinking. Oximetry. Viscosity.

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ECG03

GENE EXPRESSION PROFILE OF IL1-B, IL8, AND TNF IN THE ORAL MUCOSA OF VAPE USERS

Silva MFM*, Carvalho BFC, Faria NC, Silva KCS, Almeida JD

The present study aims to evaluate the expression profile of inflammatory mediators in the epithelium of the oral mucosa among vape users. The project was submitted and approved by the Ethics Committee Involving Human Subjects of the Institute of Science and Technology of São José dos Campos (CAAE: 36911420.0.0000.0077, opinion number: 4.397.780). Research participants were divided into two groups: Vape Group (VG), consisting of 25 regular and exclusive vape users, and Control Group (CG), composed of 25 non- smokers and non-vape users. Smears from the buccal mucosa and the lateral border of the tongue underwent RNA extraction using the Trizol method, and gene expression of IL1-B, IL8, and TNF genes was assessed using RT-qPCR. The Mann-Whitney test with a significance level of 5% demonstrated significant differences for all tested genes. The IL1-B ($p<0.0001$) and TNF ($p<0.0001$) genes were downregulated in the VG compared to the CG, with expressions of 1.33 and 1.92, respectively. On the other hand, the IL8 gene ($p<0.01$) showed upregulation, with a 0.96-fold higher expression in the VG compared to the CG. Inhaling the vapors produced by vaping is detrimental to the users' health, as it leads to an increase in the expression of inflammatory mediators such as IL-8, causing an inflammatory dysregulation that could elevate the risk of malignant transformation of oral mucosal cells.

Keywords: Electronic nicotine delivery systems. Vaping. Oral mucosa. Polymerase Chain Reaction. Inflammation.

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ECG04

Clinical influence of functional gradation with experimental glaze on 5Y-PSZ zirconia implant-supported crowns: Pilot clinical study

Haus JA*, Ribeiro AOP, Rodrigues MFS, Silva-Boghossian CM, Bastos TM, Marinho RMM

The study aims to evaluate how the process of functional gradation with experimental glaze in implant-supported ultratranslucent zirconia crowns influences the clinical prognosis, when compared to crowns with commercial glaze. Patients were selected using pre-established exclusion and inclusion criteria, and after signing the free and informed consent form, they underwent surgery to install CM Strong SW Plus implants (S.I.N. Implant System). After the osseointegration period, the implant-supported screw-retained crowns in 5Y-PSZ zirconia were manufactured using digital flow. Patients were divided into two groups: 1) 5Y-PSZ zirconia crown with commercial glaze (GC) and 2) 5Y-PSZ zirconia crown with experimental glaze (VI). The parameters are evaluated through color stability analyzes using VITA Easyshade® Compact, wear using ExoCad Dental Software, immunological analysis, peri-implant clinical evaluations and subgingival biofilm analysis in the provisional phase, 7 days after crown installation, and 3 and 6 months after delivery. The data being collected will be subjected to exploratory analysis and analyzed inferentially with the most appropriate test ($p<0.05$). Qualitative data will be analyzed using images. It is assumed that this experimental glaze has better integration into peri-implant tissues due to its promising results in cellular options observed in in vitro tests, in addition to color stability and mechanical behavior.

Keywords: Dental materials, Organically Modified Ceramics, Dental Prosthesis, Implant-Supported.

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ECG05

EVALUATION OF DENTISTS' KNOWLEDGE REGARDING THE UTILIZATION OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS IN DENTISTRY.

Reis JP*, Mello PS, Zutin EAL, Candido CBSA

The objective of this study was to evaluate the level of knowledge of the dental surgeon about the class of non-steroidal anti-inflammatory drugs, their prescription, adverse effects and possible drug interactions, in addition to raising the main gaps in relation to the learning of pharmacology applied to dentistry. After CEP-UMC approval (#5.492.115), an electronic questionnaire containing fifteen questions was applied to 150 general surgeon dentists. The results showed that (86%) of the participants prescribe NSAIDs in complex procedures involving more than one tooth and more exacerbated tissue damage, with Ibuprofen (48%) and Nimesulide (43%) being the most prescribed ones. About half of the interviewees (49%) reported that when prescribing this class of drugs they advise their patients to take it between 3 to 5 days and (73%) had prescribed it in the previous week. Reports of stomach pain (64%) and gastritis (18%) after the use of NSAIDs were the most reported complaints and drug interaction seems to be a concern since (29%) of participants update their anamnesis at each session. Although (74%) consider it important to keep up-to-date in the area of pharmacology, only (23%) of the interviewed do so by taking part in courses and conferences. It can be concluded that although the subject is present in daily professional life, this subject is still a challenge when the objective is rational and adequate prescription in the dental clinic.

Keywords: Dentistry, Drug Prescription, Dentists

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ECG06

ARTIFACTS IN HISTOPATHOLOGY: EVALUATION OF CLINICIANS' KNOWLEDGE AND ANALYSIS OF HISTOLOGICAL SLIDES

Battistelli LS*, Ribeiro JL, Kaminagakura E, Anbinder AL

The artifacts in histopathology are artificial structures or tissue alterations produced during biopsy or tissue processing, which can alter the sample or lead to misdiagnosis. Our objective was to evaluate clinicians' knowledge about artifacts and to assess the most common artifacts found in histological slides. An online questionnaire was prepared to be answered by clinicians and 200 histological slides were evaluated by two calibrated examiners. Results were statistically analyzed. 44 users of an Oral Pathology Laboratory answered the questionnaire. They were predominantly female (63.6%), over 40 years old (54.5%), graduated more than 20 years ago (52.3%), from public universities (72.7%), non-specialists (54.5%), with 88.6% of the sample correctly answering over 70% of the questionnaire. It was observed that non-specialists had a higher knowledge of artifacts, and other comparisons were not significant. The most common artifacts produced during biopsy were those of force (30.5%), while in the laboratory, tears/splits were the most common (92%). All slides presented at least one processing artifact. Most users have a basic knowledge of the subject, but the percentage of artifacts is high. Knowledge of artifacts is important for clinicians and pathologists to reduce their prevalence and prevent misinterpretation.

Keywords: Artifacts, histology, oral pathology, biopsy.

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ECG07

THE GENERAL DATA PROTECTION LAW (LGPD) AND THE COMPLIANCE OF DENTAL CLINICS WITH THE NEW REALITY

Lourenço PVP*, Sousa MR, Feitosa FA, Teixeira SC, Barbieri AA

The widespread use of individuals data by companies and society at large has prompted the proposition of legislation addressing the topic in depth, aiming to build pathways that, without relinquishing fundamental rights and guarantees, preserve and expand existing commercial relationships among companies, governments, professionals, and society in general, ensuring respect for privacy, freedom, human dignity, and informational self-determination. In this context, the General Data Protection Law (LGPD) emerged. The objective of this research was to assess, within the scope of dental service providers, the knowledge about LGPD and the measures already taken for compliance. For this purpose, a structured questionnaire was sent to 500 participants via email, along with the Informed Consent Form (ICF). Participants only had access to the questionnaire once they had accepted the ICF. Out of the total emails sent, only 35 participants replied, with 3 declining to participate in the research. Among the respondents, 97% claimed to have heard about the LGPD, and 63% considered their knowledge about it "basic." Additionally, 72.7% of participants were not aware of the category of personal data to which patient data belonged. Only 2 respondents believed that a leakage of patients' personal data would not harm the healthcare establishment. The participating professionals demonstrated a lack of knowledge about the LGPD and the need to comply with the legislation.

Keywords: Legislation. Data Collection. Electronic Data Processing. Dental Clinics

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ECG08

EVALUATION OF THE EFFECTIVENESS OF ENDODONTIC TREATMENT PERFORMED BY GRADUATE STUDENTS: PROSPECTIVE CLINICAL STUDY

Gonçalves LAN*; Gagliardi CF; Fiamini BK; Moura FBM; Valera MC.

The success of endodontic treatment (ET) is associated with the reduction of bacteria and by-products to levels compatible with healing, the absence of clinical signs, and periapical lesion (PL) resolution. The objective of this study was to monitor ET conducted by undergraduate students at ICT-UNESP-São José dos Campos after 3-5 years. Patients undergoing ET were selected; case data were collected from medical records, and participants underwent a clinical examination to assess demographic characteristics, clinical signs, restoration status, and whether the COVID-19 pandemic influenced prognosis. Periapical radiographs (X-rays) were performed to evaluate fillings and compare initial X-rays with follow-up ones, using scores based on the Periapical Index (PAI). A total of 51 teeth were analyzed: 74.28% female, 25.72% male. There was a statistically significant reduction in the PL score when comparing the initial and follow-up X-rays. Most patient-related clinical factors did not significantly influence cure rates. However, a statistically significant difference was observed regarding the final restoration characteristic (p=0.011959) and the initial PL score (p=0.00347). It was concluded that there was a reduction in the PL score between the initial and follow-up X-rays. The final restoration quality demonstrated a correlation with cure, highlighting that temporary or inadequate restorations hindered this process. Teeth with an initial PL score ≥ 4 exhibited a lower cure rate.

Keywords: Endodontic treatment - Periapical lesion - Periapical Index - Bacteria reduction

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ECG09

Imaging Analysis of the optic canals and sphenoid sinuses on Cone-Beam Computed Tomography

Bizarro LC, Correa AGS, Santos MMA, Bittencourt GM, Fardim KAC, Lopes, SLPC

The aim of this study was to evaluate the prevalence of different sphenoidal sinus (SS) extensions and its relationship with the optic nerve channels, using cone beam computed tomography (CBCT). 200 CFCT exams (440 SS) belonging to the archive of the Radiology Clinic of the Institute of Science and Technology of the São Paulo State University (UNESP) were evaluated, 88 exams (176 SS) male and 112 (224 SE) female, without differentiation of age groups. The CBCT exams were previously acquired in a tomography of the i-CAT Next Generation brand (Imaging Sciences International, Hatfield, PA, USA), with a 0.25mm voxel and FOV (field of vision) protocol that fully covered the anatomical structures observed by the research. The images were evaluated by 02 trained examiners, in agreement on the findings. It was studied: anteroposterior (pre-sella, sella and post-sella) extensions of SS, presence of SS extension for anterior clinoid processes, presence of SS extension for pterygoid processes and the relationship between SS and optic nerve channels (unrelated, intimate relationship and inclusion of the channel in the SS). The results indicated that the highest frequency was pre-seal type SS (100.00%). The extensions for the clinoid processes presented a low frequency (33.24%) in relation to their absence, whereas for the pterygoid processes, there was practically the same frequency between the present cases (43.75%) and absent (44, 25%). The optic nerve channels included in the sphenoid sinuses were less frequent (24.00%) than those in close relation (36.50%) with this structure and these, were less than those without relation (41.75%) with the sphenoidal sinuses.

Keywords: Cone beam computed tomography; Paranasal sinus; Anatomic variations.

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ECPG01

Cross-sectional cohort study on systemic diseases and their associations with oral diseases

Tiradentes, N; Azeredo, PB; Silva, EG; Lopes, SLPC; Bresciani, E; Gomes, APM

The objective of this study was to investigate whether there is an association between three oral diseases (Caries, Apical Periodontitis and Periodontal Disease) and three systemic diseases (Diabetes Mellitus, Arterial Hypertension and Obesity). 201 patients from the Dental Emergency Room and Clinics of a Faculty of Dentistry were evaluated. The evaluation consisted of anamnesis, clinical examination, pre- and post-treatment blood pressure measurement, capillary blood glucose measurement prior to the intervention, analysis of panoramic and periapical radiographs, determination of the patient's weight and height and assessment of oral and systemic pathologies. The results were statistically analyzed using the T Test, Chi-square, Anova 1 Factor and Tukey, considering the variables under study. There was an association between Systemic Diseases and Hypertension alone with Periodontal Disease. There was no association between Diabetes Mellittus and oral pathologies (Caries, Apical Periodontitis and Periodontal Disease), while Obesity was associated with the experience of caries (DMFT). It was concluded that possible associations between systemic and oral conditions exist and should be considered for dental planning and treatment, as well as for the prognosis of cases.

Keywords: Diabetes Complications; oral pathologies; systemic arterial hypertension; obesity

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ECPG02

The tendency to use models of excellence in health management: competitive advantages in dental clinics

Bianchi LEF*, Gomes APM.

The constant changes in business scenarios have heightened the demand for strong organizational relationships, emphasizing the importance for managers to stay updated on both the technical aspects of Dentistry and its management. The objectives are based on analyzing the professionals' perception in the São José dos Campos region regarding the need to adopt models of excellence, which act as guarantors of organizational sustainability. At the same time, we qualitatively investigate the management disciplines offered in higher education institutions during Dentistry training. The materials and methods were carried out through bibliographical research and qualitative evaluation through research supported by an instructional video, presenting the operational process of response and sending. It can be stated that there is evidence that 98.7% of dentists recognize the importance of management models as enhancers of competitive differentiation, as well as 100% of them recognize the growing trend of their use in their businesses, 78% of the interviewees did not study subjects related to Organizational Management during their undergraduate studies, and of those who did, 76% rated them as a low quality subjects. It is concluded that there is a clear need to reformulate the business management discipline. Its incorporation into the curriculum will not only empower future dentists but also enable them to provide patient-oriented care aligned with the evolving demands of the oral healthcare scenario.

Keywords: Dental clinics, Dental Health Education, Practice management.

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ECPG03

PARTNERSHIP BETWEEN PUBLIC ENTITIES STRENGTHENING THE EXERCISE OF CITIZENSHIP – EXPERIENCE REPORT

Rocha MB*, Feitosa FA, Pucci CR, Teixeira SC, Barbieri AA.

This report aims to present the collaborative partnership established between the City Hall of São José dos Campos – São Paulo and the Institute of Science and Technology – ICT/UNESP. The action, executed within a Basic Health Unit designated by municipal management, enlisted undergraduates from the Dentistry course, who were supervised by a Community Health Agent from the Family Health Teams. The students conducted home visits and, with consent, administered a socio-economic assessment tool, gathering data on the utilization of dental services, reported oral morbidity, self-perception of oral health, and social capital. The instrument used was originally designed for the São Paulo State Oral Health Survey – SBSP – 2015. Additionally, a survey of the oral health needs of each participant was conducted. After evaluating the user and family context, the undergraduates provided information and health education, presenting strategies centered on improving health while respecting observed specificities with an overarching goal of contributing to the strengthening of autonomy and the cultivation of healthier habits. Participants in need of oral health services were referred for clinical care, and all participants received personalized hygiene kits. Altogether, 18 families, comprising 71 adults and 46 children, participated in the project, totaling 117 citizens. The organization and commitment of all involved can be credited with the success of the action and partnership, which contributed significantly to the strengthening of citizenship.

Keywords: Health education, Primary Prevention, Public health policies.

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ECPG04

TEMPOROMANDIBULAR JOINT DISORDERS, MUSCLE HYPOTONIA AND SLEEP DISORDERS IN YOUTHS AND ADULTS WITH DOWN SYNDROME

Dicieri-Pereira B*, Gomes MF, Giannasi LC, Oliveira W, Bressane A, Rode SM

This study aimed to evaluate temporomandibular joint disorders (TMD) and their association with masticatory muscle hypotonia and sleep disorders in individuals with Down syndrome (DS). Twenty-three volunteers with DS were assessed using axis I of the diagnostic criteria for temporomandibular disorders (DC/TMD) to explore TMD, including myalgia and arthralgia. For hypotonia evaluation, measurements of maximum mouth opening (MMO) and maximum bite force (MBF) were verified. In addition, the electromyographic recordings of right and left masseter and temporal muscles were performed. Type II polysomnography was applied to assess sleep disorders: sleep bruxism (SB), obstructive sleep apnea (OSA), and snoring index (SI). Myalgia and referred myofascial pain were more prevalent in men, mainly in the left masseter muscle, while arthralgia was more frequent in women. In men, the electrical activity was lower than women (in the left masseter p=.008; left temporal p=.002 and right temporal p=.004). MBF values were lower in men, and MMO was higher in men, highlighting the masticatory muscle hypotonia. Sleep disorders were more prevalent and severe in men with DS, except for SB, which was more frequent in women. No statistically significant differences were found concerning myalgia, arthralgia between the sexes, MMO, MBF and sleep disorders. However, temporal and masseter myalgia may have influenced the muscle hypotonia, especially in the left masseter muscle in men with DS.

Keywords: Down syndrome; masticatory muscle; muscle hypotonia; sleep-wake disorders; temporomandibular joint, Temporomandibular Joint Disorders

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EG01

MEO Project "More Than Seeing and Hearing"

Andria SA*, Paes Junior TJA, Santos GAM, Bonafé ACF.

This project is based on census data that reveal a significant portion of the Brazilian population has some form of disability (auditory, visual, physical, and intellectual). In Brazil, there are 148,000 blind individuals, 2.4 million with severe visual impairments, and 166,000 deaf individuals. It is necessary to provide information in the field of dentistry for this segment of the population in an easily understandable manner, positively impacting the change in habits with a preventive character. Carrying out oral health care activities for the prevention of diseases in individuals with visual and auditory impairments and their caregivers, using tactile, visual, and sign language (LIBRAS and Braille) educational resources, encourages the community to take actions to improve their quality of life and disseminate initiatives to other communities. Through visits by the team to partner institutions, conducting surveys of the population's needs, facilitating knowledge with educational materials adapted to each disability. In addition, disseminating information on social media through posts with images, captioned videos, dubbed content, and interpreted in LIBRAS. This extension activity achieves integration between institutions with a more dynamic and effective approach. It enhances the quality of life for individuals with disabilities by actively involving them in the process. It also contributes to the learning of students and encourages professionals to seek improvement in their services, promoting more efficient communication.

Keywords: Dentistry; Community Participation; Health Services Accessibility

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EG02

"ALL SCIENCES ARE HUMAN": WHY ALL SCIENCES EXIST TO IMPROVE PEOPLE'S LIVES

Rossini CP*, Mendes JWS, Santos YC, Santiago SG, Nicodemo D, Anbinder AL

"All Sciences are Human" is an outreach program aimed at promoting the humanization of interpersonal relationships through art and culture, involving interconnected projects and events. In the project "All Sciences Are Human - Promoting Medical Humanities on Social Media," an Instagram profile (@projetotcsh) was created to provide recommendations for books, movies, profiles, and content related to the theme. Additionally, a podcast featuring interviews with healthcare professionals was created, addressing the pleasures and challenges of the professional-patient relationship. The project "All Sciences Are Human: The Book and Humanization of Relationships" along with the "Wings of Reading Book Club" strive to cultivate a reading habit through monthly meetings and musical presentations to discuss interpersonal relationships. The "IV Odontomeeting" is a traditional dental congress featuring lectures, scientific presentations, and social activities, all selected to encompass the theme of "Innovation, Art, and Care." In times of uncertainty and polarization, the concern for nurturing empathetic and conciliatory professionals is crucial, as is tending to those who provide care. Over the next three years of the program, additional projects and events are planned to sustain this vital discourse within the community's daily life.

Keywords: Art, Culture, Helping Behavior, Reading

EG03

Workshops on Multiple Intelligences: Exploring Linguistic Intelligence in School

Andria SC*, Morais RC, Santos LF, Bonafé ACF, Santos GAM, Spalding M

The linguistic intelligence encompasses skills related to oral, verbal, and written communication, as well as morphological, syntactic, and semantic aspects of language. It was explored as part of an extension project at ICT-Unesp: Neuroscience in Education, during workshops on "Multiple Intelligences" aimed at students in the lower secondary education level. Three distinct didactic strategies were addressed: stimulating writing, narrative with effective public speaking, and introducing a new language. The activities were conducted in a circuit format consisting of four dynamic learning stages: a) presentation of the workshop's theme and the relevance of linguistic intelligence development; b) writing stimulation activity involving the composition of a poem with a minimum of four verses; c) introduction to a new language, where students learned some signs in Brazilian Sign Language (LIBRAS) and were challenged to create sentences using the learned signs; d) improvement of public speaking: students chose groups of words and constructed coherent stories based on those words, practicing cohesive and impactful narration. During the circuit, students who completed all stages were rewarded with prizes. Participation involved more than 60 students, and the activities revealed specific inclinations even within the linguistic sphere. The project emphasized how activities related to linguistic intelligence can not only enhance linguistic proficiency but also identify individual skills in a specific area.

Keywords: Dentistry; Teaching; Health Services Accessibility

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EG04

HISTO&ARTE: EXPLORING THE CREATIVITY OF FUTURE DENTISTS

Brito AA*, Sobrino FS, Fernandes EE, Vasconcellos LMR, Spalding M.

The "*Histo&Arte*" initiative, supported by UNESP's notice No. 002/2022 - PROGRAD/PROEC/ACI/AUIN, aimed to integrate and nurture Dentistry students at ICT-Unesp by promoting socialization, stimulating creativity, and fostering an appreciation for Histology and Embryology. In the backdrop of the Covid-19 pandemic's impact on education, the project sought to mitigate the challenges posed by social isolation. This experiential report encapsulates the perspectives of project participants, underscoring the convergence of Art and the realms of Histology and Embryology. The project encompassed four art workshops, focusing on drawing and painting, covering topics such as "Introduction to Drawing and Colored Pencils," "Introduction to Watercolor Painting," "Exploring Oil Painting," and "Finalizing Canvases." Nineteen students took part in the initiative, comprising 6 from the full-time 1st year and 13 from the evening 1st year. Post-project, a virtual feedback form was administered, with all 11 respondents highlighting positive impacts on their academic journeys. A substantial 82% fully endorsed the project for promoting a sense of belonging and facilitating interaction. Concerning motivation for the Histology discipline, 54.5% fully concurred, 27.3% concurred, and 18.2% remained neutral. Grounded in an informal educational setting, the project fostered a relaxed approach, honed artistic skills, nurtured creativity, and spurred interaction among students across diverse dentistry course cohorts.

Keywords: Dentistry Education, Creativity, Socialization, Pandemic Impact, Art, Histology and Embryology.

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EC05

Stomatocast: a work in progress

SILVA, J. C. P.*, ALVES, M. G. O., ALMEIDA J.D.

The Stomatocast podcast was created from the idea of sharing stories of real people. The target audience are undergraduate students in the Dentistry program, specifically those in the Stomatology Discipline. The project's goal is to showcase the journeys undertaken by these patients and the professionals who guided their diagnosis and treatment. Patients who sought care in the field of stomatology at the ICT-UNESP Stomatology Outpatient Clinic were attended to by professors, undergraduate, and postgraduate students who help us narrate their stories. These stories were conveyed through interviews conducted with the invited patients, aiming not only to discuss diagnostic thinking and therapeutic possibilities but, especially, to ponder on the humanization of healthcare. Questions such as "Do you know what was observed in your mouth?" and "Could you tell us a bit about the involved professionals and how they attended to you?" Were posed to the patients, and the entire interview was recorded for subsequent organization in a concise audio format. The podcast has been used to as pre-class material, with the intention of contributing to the humanistic and ethical education of future dental surgeons. We understand that getting to know people and their stories has been used to greatly aid in this process. The work is currently in progress, with some interviews and scripts completed, and the audio material is undergoing editing. Thus, through the process carried out so far, we have concluded that a humanized approach to dental care holds significant importance in the patient treatment process.

Keywords: Webcast, Oral Medicine, Preventive Dentistry, Stomatology

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EC06

Tutorial Education Program - PET Dentistry UNESP São José dos Campos

Maroscia GM*, Rocha JC, Franco ALCO, Mendes JWS, Silvestre PR, Bevilaqua GCD.

The PET Dentistry Tutorial Education Program at UNESP São José dos Campos develops activities for the internal and external community, integrating the dimensions of the Brazilian university's tripod, which are teaching, research, and extension. The group offers activities within and beyond the scope of dentistry, demonstrating that knowledge of other activities can improve professional performance in the field of Dentistry. The program's main objectives are to integrate, inform, teach, include, and promote citizenship, as well as the social awareness of the participants and the stimulation of the development of humanized dental professionals. Currently, the program is composed of 12 undergraduate students, including scholarship holders and non-scholarship holders, under the guidance of a tutor professor who coordinates the program, providing conditions for the realization of extracurricular activities that complement the academic education, stimulating critical and active thinking of the participants, and skills in different areas. Some of the activities developed during the year 2023 by PET include Assistance to Transgender Individuals in the *Transbordamos* Project, Oral Health for Students in the *Herói Mirim* Project, Cultural Activity on Chess Teaching and Promotion, *Meses Coloridos* Project, Podcast on Complementary Examinations in Dentistry, Workshop on Dental Practice Management and Marketing, Activity in partnership with the MEO Project, Discussion of Foreign Language Films, as well as individual research by all members and participation in PET Events, Congresses, and Academic Journeys.

Keywords: Teaching, Research, Extension

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EC07

ONCO PROJECT – DENTAL CARE FOR ONCOLOGICAL PATIENTS: A SMILE FOR LIFE

Santos YC*, Carvalho VG, Fonseca MVA, Neisser M, Santos LM

Cancer is the main public health issue worldwide, with approximately 19.1 million cases worldwide. In Brazil, it is estimated that by the year 2025, there will be 704 thousand new cases of cancer. Head and neck cancer is the 6th most prevalent among men. Currently, the involvement of multiple specialties in the treatment of oncological patients is considered crucial for achieving better prognoses and consequently, a higher quality of life for the patients. For the past 14 years, the Onco Project has aimed to enable undergraduate students to assist cancer and transplant patients throughout all phases of treatment. The project aims to restore function, aesthetics, and quality of life to these patients. It involves the development of classes, research, seminars, prevention campaigns, all within a multidisciplinary and multiprofessional approach. In addition, this includes diagnosing lesions, providing patient guidance, preparing the oral environment for treatment initiation, laser therapy, treating lesions caused by side effects of treatments, monitoring these patients during the therapeutic process, and engaging in oral rehabilitation. The project has already received awards at congresses and has been honored by the municipal council of the city for providing high-level care to oncological and transplant patients. This field of work is lacking throughout the entire country.

Keywords: Cancer of Head and Neck**,** Dental Care, Mouth Neoplasms, Patient Care Team, Oral Medicine

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EPG01

MOBILE APP FOR BUSINESS AMONG DENTISTRY PROFESSIONALS

Ferraz SMGC, Carvalho PCK

Even with a growing presence in different sectors of the economy, dental surgeons and related professions work, for the most part, in clinical environments, in a decentralized manner, which makes it difficult to do business between these professionals, who continue to resort to the traditional method of referral by close colleagues to buy, rent and hire, which limits the possibility of doing good business. Global consumer trend research points to the exponential growth of peer-to-peer businesses and the sharing economy. The expected revenue for the global dental market is also increasing: experts project a jump of 27.61 billion dollars from 2021 to 2029. This work proposed the development of a mobile application whose objective is to connect dental professionals who wish to sell, rent or provide services to those who wish to buy, rent and hire in the national territory, making this environment a reference of efficiency, agility and trust for the conducting business within this sector. The application was developed using a low code programming platform, customized using tools provided by the platform itself in addition to HTML codes and its structure aims to provide a simple and intuitive navigation experience for the user. As a source of revenue, the application will have a monthly advertising fee differentiated by category, in addition to spaces dedicated to advertising.

Keywords: Dentistry. Platform. Services. E-commerce. Shared economy. Mobile application.

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EPG 02

Exploring the microscopic reality in everyday life: analysis of an extramural activity during and after the pandemic.

Sobrinho FS*, Abdala JMA, Brito A, Salgado MAC, Vasconcellos LMR, Spalding M.

During the emergency remote teaching, which took place during the pandemic, the teachers of the Histology and Embryology discipline of the Dentistry course at ICT-Unesp, SJC, launched a photo contest called "I see histology everywhere" to the 86 students enrolled in the 1st year, in both the full-time and evening classes. The participants were required to find everyday images that resembled histological sections. The photos were organized in a digital file for online dissemination and voting. In 2020, 62 students (72%) from both time slots participated in the contest. The full-time and evening class photos received 63 and 62 votes respectively. In 2022, with the return to in-person activities, the contest was held again. Out of the 88 students enrolled in the discipline, 48 participated in the contest (54.5%). Despite the decrease in the number of participants, there were 499 voters for the full-time class photos and 107 voters for the evening class photos. A substantial increase in engagement and participation from the community was observed, almost five times higher. The voting involved students from other institutions, such as FOA, Uniara, ITA, dentists, former students, postgraduates, technical-administrative staff, family members, friends, among others. It was concluded that the photo contest motivated the students, stimulated their creativity, and promoted engagement from the internal and external community, increasing the visibility of the Campus.

Keywords: Histology,Teaching, Community-Institutional Relations.

EPG03

LOGICAL-MATHEMATICAL INTELLIGENCE: THE UNIVERSITY AWAKENINGPOTENTIAL IN PUBLIC SCHOOL CHILDREN.

Sobrinho FS*, Ferreira JM, Vegian MRC, Spalding PHDB, Gonçalves TM, Spalding M.

In the context of multiple intelligences, logical-mathematical intelligence is linked to the ability to solve problems, identify patterns, and develop reasoning and logical thinking. To stimulate elementary school students to understand logical relationships and analyze problems, a workshop on multiple intelligences was conducted as part of the university extension project "Neuroscience in Education: contributions of the university to maximize cognitive performance of public-school students". The workshop took place in a public school in São José dos Campos, SP, and had the participation of approximately 120 students from 6th to 9th grade. Six logic tests were prepared using the Google Forms platform, each with a different level of difficulty. The physical space allocated for the workshop was organized with six desks and six tablets with the tests and decorated with panels and colored papers to create an attractive environment. The participants lined up to take on the challenges. The dynamics involved progression of levels. Certificates and awards were given to those who completed the final bonus. Of the 56 elementary school students who participated, 97.6% advanced to the intermediate level, and 33 students reached the advanced level. The results highlight that logical-mathematical intelligence requires activities that stimulate and motivate to contribute to awakening students' interest in this area. Throughout the workshop, the students showed great interest and maintained a high level of engagement.

Keywords: Extension; University; Logical Thinking.

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EPG04

NEUROSCIENCE IN EDUCATION: POTENTIATING THE COGNITIVE PERFORMANCE OF PUBLIC-SCHOOL STUDENTS

Fernandes EE*, Ferreira JM, Ramos LP, Lima PMN, Gonçalves TM, Spalding M.

Neuroscience is a new science, focused on investigating the organization, structure, and functions of the nervous system, especially the brain, the organ responsible for the teaching-learning process. Through diverse and transdisciplinary initiatives, the project aimed to raise awareness, guidance and motivation among students to enhance their cognitive performance. The project was divided into four phases: the 1st phase was to raise awareness among students, through an event hosted at a public basic education school: "1th Neuroscience Education Meeting, overcoming challenges for enhanced learning effectiveness". The 2nd stage was aimed at high school students. Students had the opportunity to study the human brain in the Anatomy and Histology laboratories at university, among other related activities. The 3rd stage was aimed at elementary school students II, who participated in workshops on "Multiple Intelligences", coordinated by professors, graduate and undergraduate students, as well as external collaborators and specialists. Activities focused on Gardner's eight multiple intelligences were developed: linguistic, logical-mathematical, kinesthetic-corporal, naturalistic, spatial, interpersonal and intrapersonal, and musical. In the 4th and last stage, there was a game of "dodgeball" at the school, between high school students and undergraduate students, to encourage the practice of sports. Based on neuroscience concepts, actions were developed to raise awareness and stimulate the cognitive performance of public-school students.

Keywords: Students; University; Neurosciences.

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RL01

CHALLENGES OF BLACK AND BROWN STUDENTS IN DENTISTRY UNDERGRADUATE PROGRAM: FROM ENROLLMENT TO EFFORTS FOR CONTINUITY.

Silva BVR*, Barbieri AA, Feitosa FA, Teixeira SC

Seeking to correct the historical inequality between black and white individuals, in 2003 the first Brazilian universities adopted affirmative action policies: political actions aimed at members of minority groups with a view to equal opportunities and treatment. These actions include, among others, the creation of reserved seats in public higher education through the Higher Education Quota Law. The objective of this research was to correlate data on student dropout rates in the Dentistry Undergraduate Program at UNESP São José dos Campos over the past 5 years, from 2018 to 2022, with the percentage of self-declared black and brown students. To this end, quantitative dropout data were requested and obtained from the Course Coordination. In the specified period, 400 seats were made available, with 200 for open competition, 130 for public basic education, and 70 seats designated for self-declared black and brown students. During the evaluated period, the total dropout rate, considering the dropout rate by group, represented 2.5% of students in the open competition group, while among public education students, it represented 10.76%. For the group of self-declared black and brown students, the percentage represented 14.28% of students who enrolled in the evaluated period. Affirmative action enables cultural diversity, strengthens institutions, citizenship, and democracy, and its implementation and monitoring are essential for creating tools that promote effective equality of access and opportunities.

Keywords: Student Dropouts. Schools, Dental. Public Policy.

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RL02

UNILATERAL CUSTOMIZED TMJ PROSTHESIS FOR CORRECTION OF CONDYLAR RESORPTION ASSOCIATED WITH ORTHOGNATHIC SURGERY: CASE REPORT

Zuccolotto TC, Silva IB, Toledo GCS, Sato F, Araujo MM

Alloplastic temporomandibular joint (TMJ) replacement seeks to address joint deformities. The objective of this study is to present a clinical case of correction of unilateral condylar resorption associated with dentofacial deformity. A 22-year-old female patient diagnosed with right-sided condylar hypoplasia associated with retrognathism and maxillary atresia. A right TMJ replacement with a customized prosthesis was planned, along with orthognathic surgery to correct the dentofacial deformity. An extraoral preauricular and submandibular approach was used for right condylectomy, articular fossa resection, surface regularization, followed by adaptation of positioning guides and maxillomandibular fixation. Subsequently, a sagittal mandibular ramus osteotomy was performed, and the segment was fixed in an intermediate position. A customized prosthesis was then fixed in the planned position, followed by a Le Fort I osteotomy for segmentation into four parts of the maxilla and fixation of the maxillary segments in the final planned position. The combination of a customized TMJ prosthesis and orthognathic surgery in the same surgical time offers various advantages in terms of cost, morbidity, and surgical time thatfacilitate early patient recovery and readaptation.

Keywords: Temporomandibular joint, orthognathic surgery, joint prosthesis

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RL03

Clinical success of restorations with bioactive and non-bioactive materials: Systematic Review and Network Meta-Analysis

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The present systematic review and network meta-analysis was conducted to address the research question: Does the clinical evaluation of restorations on permanent teeth with bioactive materials (BM) show greater success rates than those with non-bioactive materials? A search strategy was developed and used in the following databases: PubMed, Scopus, Web of Science, LILACS, Brazilian Dentistry Bibliography, Embase, The Cochrane Library, and OpenGrey. Only randomized clinical trials that assessed at least one BM in permanent teeth with a minimum follow-up of 24 months were included. The risk of bias was evaluated using the Cochrane Collaboration tool (RoB 2). Mixed-effects Bayesian comparative treatment analysis was used to compare restorative treatments, and the Surface Under the Cumulative Ranking curve (SUCRA) was used for ranking them. In total, 27 studies were included and pooled, revealing three networks. The risk of bias was moderate, with 20 studies (74.07%) classified as having "some concerns". SUCRA rankings classified resin composite (RC) as the preferred restorative treatment for Class I and II (82.6%), as well as for Class III restorations (86.4%). Resin-Modified Glass Ionomer Cement (RMGIC) was the preferred treatment for Class V (89.9%). BM exhibited good clinical performance, particularly in the cervical region, where adhesion of RC is compromised. RC remains as the primary choice for Class I, II, and III restorations and demonstrated satisfactory performance in Class V restorations.

Keywords: Dental Restoration Failure; Dental Restoration, Permanent; Composite Resins; Dentition, Permanent; Glass Ionomer Cements; Systematic Review

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RL04

Peri-implantitis and biomaterials in Dentistry: is it possible or not to establish a correlation?

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The purpose of this study was to perform a review of the literature on peri-implantitis and biomaterials. PUBMED was consulted for 90 days, by two evaluators, limiting the studies to the last 10 years, with the keywords: "*periimplantitis*" and "*biomaterials*". The study was registered at PROSPERO, #CRD42023412334, according to the PRISMA guidelines. 87 studies were selected, being reduced to 12 after the inclusion/exclusion criteria. These were evaluated according to the *Newcastle-Ottawa* scale. A total of 576 patients were submitted to randomized controlled or clinical studies, in which different biomaterials or techniques were used to prevent/treat peri-implantitis. The use of chlorexidine on the implants surface to prevent biofilm formation was used in 8.33% of the studies, with reduction of CFU. 58.33% of the studies used bone substitutes (with/without growth factors), since in half of those there were clinical/radiographic significant differences. Porous titanium granules were used in 16.6% of the studies and biphasic ceramics with calcium phosphate were used in 8.33% of the studies, but with no difference being showed. Other studies (16.6%) used brushes with chitosan, as substitute to the traditional curettes in the treatment of peri-implantitis, with reduction of the inflammation. It was concluded that the area of biomaterials is broad and that clinical studies of peri-implantitis approach different lines of research, with contradictory results. It was not possible to establish a correlation between the use of biomaterials and the prevention of peri-implantitis.

Keywords: Peri-implantitis; Biomaterials; Dentistry.

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RL05

Loosening and resistance of fracture of implant prosthesis retaining screw: a literature review

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The objective of this paper was to present a literature review on the loosening and resistance to fracture of the retaining screw on dental implants. The retention screw is an extremely important component as it is responsible for retaining the prosthesis on the prosthetic abutment, ensuring long-term stability. However, screw loosening and fracture is a common complication in implant dentistry and can lead to treatment failure, with this concept understood, we must have the knowledge to determine the best way to treat this component during the installation and maintenance of the prosthesis on implant. A methodology of bibliographic research was used, searching for articles relevant to the theme, through the PubMed and Google Scholar databases. The selection of articles was performed by reading the titles and then the abstracts. Based on reading the texts in full, the studies with the greatest relevance to the proposed review were selected. Studies have shown that screw stability is directly related to screw preload maintenance, as well as its maintenance and retightening. The loosening of this component precedes its fracture, which can lead to implant loss. The stability of the retaining screw is a key factor for the long-term success of the dental implant prosthesis. Screw maintenance protocols must be followed to minimize complications and ensure the durability of the dental implant.

Keywords: Dental Implants. Dental abutments. Prosthesis failure

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RL06

RANDOMIZED CLINICAL TRIALS OF DENTIN HYPERSENSITIVITY TREATMENTS – COMPLIANCE WITH CONSORT GUIDELINES AND MAPPING OF TRIALS FEATURES: A SYSTEMATIC REVIEW

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Dentin hypersensitivity (DH) is defined as an acute, short-term pain that occurs in response to external stimuli directed at areas of exposed dentin. This systematic review aimed to assess the available literature regarding the compliance of randomized clinical trials (RCTs) on DH treatments with the CONSORT statement, in addition to mapping their characteristics (type of intervention, sensitivity assessment methods, scales used, application mode, etc.), and to analyze the risk of bias of these same studies. Only RCTs were included in this review. A specific search strategy was designed for each of the following databases: MEDLINE via PubMed, Scopus, Web of Science, LILACS, Brazilian Dental Library (BBO) and EMBASE, in addition to manual searches. Data analysis and collection were performed by two independent reviewers who selected the potential studies at first by title and abstract, then by complete reading of the selected ones. Articles were evaluated for compliance with the CONSORT statement on a scale: 0 = no description, 1 = deficient description and 2 = adequate description, for each item. Analysis of the risk of bias was performed using The Risk Of Bias Tool 2.0. Descriptive analyzes were also performed. Among the 3078 articles analyzed, 2867 were excluded because they did not meet the inclusion criteria, did not present a comparison between treatments, or were not RCTs. After deletions, 211 RCTs remained for evaluation. The journals that most contributed were the American Journal of Dentistry (13.7%), Journal of Dentistry (8.5%%) and the Journal of Clinical Dentistry (7.1%). India (24.6%) and Brazil (17.5%) were the countries with the most publications. As for the score received by the articles for each CONSORT item analyzed, 92.42% of the articles obtained the maximum score in "Eligibility", demonstrating that there is a clear description of the eligibility criteria for participants in most studies. The item with the lowest number of articles with the maximum score was "Estimated effect size" (25.6%), demonstrating a particular difficulty for authors to adequately describe the estimated effect size of the outcomes and its precision with a confidence interval of 95%. Most articles presented an "uncertain" risk of bias. After these analyses, it was concluded that the adherence of RCTs to CONSORT requires more attention, since following its guidelines can, in the long term, result in a significant improvement in RCT reports, which may bring numerous benefits both to the science on the subject, as well as for the clinical application of what is being studied.

Keywords: dentin hypersensitivity; dentin sensitivity; dentin desensitizers; dentin desensitizing agents; systematic review; randomized controlled trials as topic.

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RL07

Selection of the local anesthetic based on the systemic conditions presented by the patient

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One of the most commonly utilized tools for assessing the general physical condition of a patient is the classification system of the American Society of Anesthesiologists (ASA). As the ASA score increases, the likelihood of complications in the treatment plan proposed by the dentist also increases. For this reason, the ASA classification system is widely employed in preoperative evaluation, including pre-anesthetic assessment. To demonstrate how the dentist can use this system as a basis for selecting local anesthetics for use in dental surgical procedures, this study addressed the application of pre-anesthetic assessment, based on categorizing the patient within one of the ASA classification system scores. Objective: To demonstrate how the ASA classification system can be utilized in pre-anesthetic assessment. Methodology: The literature review involved technical manuals and articles researched in databases available in the Virtual Health Library, Scientific Electronic Library Online (SCIELO), and PubMed/MEDLINE. Conclusion: The ASA classification system provides the dentist with an overview of the patient's physical condition, encompassing their clinical status on the day of the consultation and their history of treatment and control of systemic diseases. This comprehensive understanding of the patient is only possible through a well-conducted anamnesis, accompanied by supplementary examinations and, when necessary, multidisciplinary collaboration.

Keywords: Medical History; Dental Anesthesia; Local Anesthetics; Surgical Procedures; Classification.

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