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same was not observed for the Ni-Cr and Co-Cr. The MAR tool acted mostly in hypodense artefacts (negative DMGV).

Conclusion: The MAR tool is effective in reducing the expression of artefacts generated by Ag-Pd posts in a restored tooth, mainly in the regions affected by hypodense artefacts, regardless of the mandibular region.

EFFECT OF THE P11-4 ON ENAMEL REMINERALIZATION AND PROGRESSION OF CARIES LESIONS: SYSTEMATIC REVIEW
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Aim: The aim of this study was to evaluate the evidence on the effectiveness of self-assembling peptide P11-4 on enamel remineralization and progression of caries lesions.

Method: Systematic searches were conducted on PubMed/Medline, Embase and Scopus databases to find in vitro studies assessing the impact of P11-4 peptide on hardness, fluorescence, micromorphology, chemical composition and other properties of demineralized enamel. Also, clinical trials on the progression of incipient dental caries following P11-4 peptide application were included. Main methodological data extraction was performed by using a standardized form. An adapted instrument and Cochrane collaboration tool were used to assess the risk of bias of in vitro and randomized clinical studies, respectively.

Results: In total, 17 articles met inclusion criteria (14 in vitro and 3 clinical trials). Enamel morphology (n=7), microhardness (n=7) and optical properties (n=5) were mainly evaluated. Overall, 11 in vitro studies (82%) reported that P11-4 peptide was more effective to improve the physicochemical properties of enamel compared to fluoride and non-fluorides alternatives. International caries detection and assessment system (ICDAS) index (n=2) and laser fluorescence (n=2) were mainly used to assess the progression of incipient caries lesions. Overall, 2 of 3 studies reported better results on P11-4 peptide compared to control groups.

Conclusion: Under in vitro conditions, P11-4 promoted better enamel remineralization compared to other preventive strategies. Clinical evidence on the effectiveness of P11-4 was limited but showed promissory results in terms of caries lesion progression.

EFFECT OF TOOTH PASTE WITH MICROMETRIC AND NANO-SIZED β -CALCIUM GLYPHOSPHATE ON DENTAL CARIES: IN SITU STUDY

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Aim: The aim of the present study was to evaluate in situ the ability of a conventional fluoride toothpaste (1100 ppm F) containing micrometric β -CaGP (β -CaGPm) and nano-sized β -CaGP (β -CaGPN) on enamel remineralization of initial dental caries.

Method: This blind and cross-over study was performed in 4 phases of 3 days each. Twelve subjects used palatal appliances containing four bovine enamel blocks with artificial caries lesions. Volunteers were randomly assigned into the following treatment toothpastes: 1) without F/ β -CaGPm/ β -CaGPN (Placebo); 2) 1100 ppm F (1100F); 3) 1100F with 0.5% β -CaGPm (1100F-0.5% β -CaGPm) and 4) 1100F with 0.25% β -CaGPN (1100F-0.25% β -CaGPN). Volunteers were instructed to brush their natural teeth with the palatal appliances in the mouth during 1 min (3 times/day), so that blocks were treated with natural slurries of toothpastes. After each phase the final surface hardness was determined to calculate the percentage of hardness recovery surface (%SHR). Data were analyzed by ANOVA and Student - Newman - Keuls test.

Results: The enamel surface was ~21% more remineralized when treated with 1100F-0.5% β -CaGPm toothpaste when compared to 1100F ($p < 0.001$). When treated with 1100F-0.25% β -CaGPN promoted a higher remineralization in ~69% and ~40% when compared to 1100F and 1100-0.5% β -CaGPm toothpastes ($p < 0.001$).

Conclusion: It was concluded that the addition of 0.25% β -CaGPN to a conventional toothpaste promoted a higher remineralizing effect when compared to 1100 ppm F.

EFFECTIVENESS OF 1% SODIUM HYPOCHLORITE OF HYGIENE PROTOCOLS FOR COMPLETE DENTURES IN HOSPITALIZED PATIENTS

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Aim: Considering the clear association between oral and systemic diseases, the objective of this study was to evaluate hygiene protocols for 40 maxillary complete dentures (MCD) of hospitalized patients admitted to the Hospital Beneficência Portuguesa, Bauru, São Paulo, Brazil.

Method: They were randomly submitted to one of the following protocols (n=10): BRUSH/DW - MCD brushing with soft brush and sterile distilled water; BRUSH/TP - brushing with toothpaste (Colgate total 120); HYP - immersion in 1% sodium hypochlorite solution for 10min; BRUSH/HYP - MCD brushing with sterile distilled water and immersion in 1% sodium hypochlorite solution for 10min. Quantitative microbiological cultures were obtained with oral swab rubbed for 1min on the inner MCD surface before and after the application of the proposed methods for evaluation of their efficacy. Then, aliquots of 25 μ L of the serial dilutions obtained (10⁻¹ a 10⁻⁹) were plated on sheep blood agar and, after 48h on 37 °C (5% CO₂), the viable colonies were counted. The data (UFC/mL) were analyzed by Wilcoxon and Kruskal-Wallis test ($\alpha = 5\%$).

Results: Compared to the controls, which were similar to each other ($P > 0.05$), a greater antimicrobial effect was observed for the groups using sodium hypochlorite ($P > 0.05$), with no difference between them ($P > 0.05$).

Conclusion: The hygiene protocols with 1% sodium hypochlorite solution tested in this study proved to be viable and effective alternatives for denture biofilm reduction in hospitalized patients, which can minimize the risks of systemic infections via prosthesis as well as contribute to a shorter hospital stay.

EFFECTIVENESS OF CLEAR ALIGNER THERAPY IN ORTHODONTICS: A REVIEW

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Aim: This study aimed to review the orthodontic literature and assess scientific evidence regarding the efficacy of tooth movement with clear aligner therapy.

Method: We performed an electronic search from January 2015 to September 2020 using PubMed, without limitations on language. The conducting question addressed the predictability of this treatment modality: "How efficient are clear aligners in providing accurate orthodontic tooth movement?"

Results: We selected six articles for this review (five retrospective cohort and one prospective cohort study), and excluded review articles, case reports, interviews, and letters to the editor.

Conclusion: The evidence presented in the literature suggested clear aligner therapy has improved over the years, with higher overall accuracy of individual tooth movement. However, specific types of movements remained a challenge for this technique and presented limited predictability, namely rotation of rounded teeth, such as canines, premolars and molars; and mandibular incisor intrusion. A better understanding of how effective clear aligner therapy is in providing orthodontic tooth movement might aid the clinician in patient selection and treatment planning. In consequence, orthodontists may achieve more accurate results and thus reduce the need for additional case refinement.

EFFECTIVENESS OF DIFFERENT ACTIVATION SYSTEMS IN REDUCING BACTERIA FROM THE RED COMPLEX

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Aim: Red complex consists of three anaerobic bacteria considered as periodontal pathogens, but can be present in infected root canals, such as: Porphyromonas gingivalis, Treponema denticola and Tannerella forsythia. Activation systems were developed in order to optimize the removal of infectious bacterial content of the root canals during chemical mechanical preparation (CMP). This study evaluated the effectiveness of different activation systems in reducing the red complex.

Method: Twenty-four cases of primary endodontic infection without periodontal involvement were evaluated. They were prepared with Reciproc system and irrigated with sodium hypochlorite (NaOCl) 6% and EDTA 17%. Samples were collected before and after the CMP and divided into 3 groups according to the activation system of both solutions: without activation group (WA, n = 8), reciprocating activation group (RA, n = 8) and ultrasonic activation group (UA, n = 8). The samples were analyzed using the Checkerboard technique. Bacteria concentration scores were analyzed by Kruskal Wallis, Dunn and Wilcoxon test.

Results: All investigated bacteria were present in the initial samples. There was a significant decrease after CMP only in the ultrasonic activation group ($p < 0.05$).

Conclusion: It was concluded that the ultrasonic activation of NaOCl 6% and EDTA 17% was the only system capable of significantly reducing the microbial load of red complex bacteria. (FAPESP 2015/23479-5, CNPq 303852/2019-4, CAPES 001)

EFFECTIVENESS OF THE USE OF XYLITOL CHEWING GUM IN PREVENTION OF DENTAL CARIES: A SYSTEMATIC REVIEW

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Aim: This systematic literature review assessed the effectiveness of using chewing gum containing only xylitol compared to others prevention strategies or placebo in reducing the incidence of carious lesions in children.

Method: A research protocol was developed and recorded in the International Prospective Register of Systematic Reviews (PROSPERO - CRD42020197945). The electronic search was carried out in PubMed, MEDLINE, LILACS, Web of Science, Scopus and Science Direct databases through the period between 2000 and 2020 using the descriptors "Child", "Children", "Xylitol", "Prevention", "Dental caries", "Caries" and "Tooth decay" combined and modified on each platform. This review included only randomized controlled trials addressing the prevention of dental caries through the use of gum containing only xylitol in children. Study selection, data extraction, quality assessment and data analysis was performed in order.

Results: Two hundred studies were found and after analyzing the inclusion and removal of duplicates, only 5 studies were analyzed for the quality of evidence. This analysis showed that there was no consensus regarding the adopted caries index. Also it was possible to verify the low level of scientific evidence on the effectiveness of gums containing only xylitol for the prevention of caries in children.

Conclusion: Therefore the conflicting results, limitations and inconsistencies of the studies allow us to establish that there is insufficient evidence to support the use of gums containing only xylitol for the prevention of caries in children, so that other properly designed clinical trials need to be carried out.

EFFECTIVENESS OF USING HOMEMADE MASKS IN REDUCING SARS-COV-2 INFECTIONS: REVIEW OF CURRENT LITERATURE

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Aim: The purpose of this literature review was to analyze the scientific evidences related to the effectiveness of homemade masks in reducing the transmission of SARS-CoV-2, gathering population evidence and recommendations from global health agencies.

Method: For this, after searching international databases and official websites of health agencies, 54 references were selected from scientific articles, technical notes, among others.

Results: In general, there is a consensus among global health organizations that recommend the use of homemade masks by the entire healthy population or asymptomatic individuals to reduce the spread of SARS-CoV-2. However, evidence of particle filtration efficacy is scarce, controversial, and mostly performed in vitro. Despite the varied methodologies of the studies and the diversity of results, fabrics such as 100% cotton in 2 or 3 layers have demonstrated satisfactory filtration efficiency (70% to 99.5%), like surgical masks and N95 respirators. Regarding the effectiveness of population use, mathematical prediction studies have suggested that the use of masks, even with low filtration efficiency, can reduce deaths caused by SARS-CoV-2 by up to 45% in 2 months. Additionally, a recent study, which evaluated the spread of COVID-19 in the first 100 days in several countries, showed that the use of masks by the entire population had a significant effect in reducing the spread of the disease.

Conclusion: In view of this evidence, the use of homemade masks seems to have a beneficial effect in reducing the spread of respiratory infectious diseases, such as COVID-19, justifying their use when there is no vaccine.