055 EVALUATION OF CHEMICAL AUXILIARY SUBSTANCES IN ENTEROCOCCUS FAECALIS REDUCTION.

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The mechanical instrumentation may not remove all of the microorganisms during endodontic therapy, therefore such as significantly as the instrumentation is the use of chemical auxiliary substances (CAS) in the disinfection of root canals. Aim: To evaluate the microbial reduction of teeth contaminated with Enterococcus faecalis using different CAS. Methods: In triplicate, bovine teeth were contaminated with E. faecalis (ATCC 29212) for 15 days. Subsequently, they remained in contact for 1 minute with the CAS: 17% EDTA, 0.9% sodium chloride (SC), 10% citric acid (CA), 2% cat's claw (CC), mouthwash (MW) Colgate®, 30vol. hydrogen peroxide (H2O2), 6% and 2.5% sodium hypochlorite (NaOCl), 2% chlorhexidine (CHX) liquid and 2% CHX gel. Then, each specimen was transferred to a tube containing 1 ml of BHI broth and serial dilution (10-1 to 10-5) was performed. The samples and dilutions were seeded in petri dishes containing BHI agar for colony forming units (CFU) counting. Results: The CAS that showed better results in terms of bacterial reduction were: 6% NaOCl, 2.5% NaOCl, 2% CHX liquid and 2% CHX gel; eliminating E. faecalis from the samples tested. While the specimens treated with EDTA, CS, CA, CC, MW and H2O2 had 2.2x105; 1.9x105; 9.6x103; 2x103; 4x102 and 45 UFC counts, respectively. Conclusion(s): There were differences between CAS antimicrobial activity against the bacteria E. faecalis; the NaOCl and CHX solutions, at the concentrations tested, had a higher than 99.99% microbial reduction. (Supported by PIBIC-EM; FAPESP 2012/23697-4; CNPq 308162/2014-5; & CAPES)

056 INFLUENCE OF DIFFERENT IRRIGATING SOLUTIONS ASSOCIATED TO PHOTODYNAMIC THERAPY: (IL-1B; AND IL-6) PRODUCTION IN RATS

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Aim: This study evaluated the production of cytokines IL-1B; and IL-6 in vivo of photodynamic therapy compared with different irrigating solutions (2% chlorhexidine, 2.5%, 5% sodium hypochlorite and 0.9% sodium chloride as control) in the subcutaneous tissue of rats. Methods: The solutions were placed in polyethylene tubes and implanted into the dorsal connective tissue of 50 Wistar rats for 7, 15, 30, 60, and 90 days. The tubes was collected for cytokine evaluation by using an enzyme-linked immunosorbent assay. Statistical analysis was performed using ANOVA, with Bonferroni correction ($p < 0.05$). Results: The results showed no statistically significant difference ($P > 0.05$) for IL-1B;. The PDT showed higher levels at 7 and 90 days. At 15 and 60 days, 2% chlorhexidine reached the highest averages. At 30 days, 2.5% sodium hypochlorite was the group that had the highest average. For IL-6, there was a statistically significant difference, ($P < 0.05$). At 7 days and 60 days 2% chlorhexidine expressed higher. In 15 days, the sodium hypochlorite 5% had the largest average and at 30 days, 2.5% sodium hypochlorite. Control group and 2.5% sodium hypochlorite caused mild reactions after 30 days. Conclusion(s): PDT induced release of IL-1B; and IL-6, but similarly amounts compared to other sodium hypochlorite irrigating solutions (2.5% and 5%) and 2% chlorhexidine, showing biocompatibility.

057 MICROBIOTA ANALYSIS AND EFFECT OF CHEMO-MECHANICAL PREPARATION AND INTRACANAL MEDICATION IN ENDODONTIC FAILURE

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The persistence of intracanal infection is a major cause of endodontic failure. Aim: a) To characterize the microbiota associated with endodontic failure phenotypically (biochemical test) and genotypically (partial 16S rRNA gene sequencing) ; b) To analyze the efficiency of both techniques in microbial identification; c) To evaluate the effect of the chemical-mechanical preparation (CMP) and intracanal medication (MIC) in reducing bacteria. Methods: Microbiological samples from 20 single-rooted teeth with chronic apical periodontitis were collected before CMP, after CMP and after MIC. After culture and bacterial isolation, identification of isolates strains was performed. Results: The results showed the presence of a mixed microbiota containing Gram positive and Gram negative, facultative anaerobic and strict. Enterococcus faecalis was the most prevalent species, identified phenotypically (19/158) and genotypically (42/158). The sequencing has identified 10.12% of the samples in the genus level and 89.88 % at the species level, whereas the biochemical test identified 13.29% and 51.26% , respectively. After the CMP there was a bacterial reduction of 94.3 %, but after the use of MIC this value decreased to 86.7 %. Conclusion(s): Enterococcus faecalis was the most prevalent bacteria in teeth with endodontic failure; the most efficient identification method was the sequencing; the CMP showed significant effect on the reduction of infection content, whereas the MIC showed no additive effect in reducing these levels. (Supported by CAPES, FAPESP (12/23697-4) & CNPq 308162/2014-5).

058 SODIUM THIOSULFATE FOR RECOVERY OF BOND STRENGTH TO DENTIN TREATED WITH HYDROGEN PEROXIDE: IN VITRO STUDY

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Aim: The aim of this study was to evaluated the efficiency of sodium thiosulfate ($Na_2S_2O_3$) for restoring the bond strength to intracoronary dentin treated with 35% hydrogen peroxide (H_2O_2). Methods: Eighty crowns of bovine incisors were cut to expose the intrapulpal dentin. The samples were randomly distributed into 10 groups: G1- without bleaching; G2- bleaching (35% H_2O_2 for 40 min) + washing with 0.9% NaCl; G3 and G4- bleaching + washing with 0.9% NaCl + restored after 1 week and 2 weeks, respectively; G5 and G6- bleaching + 10% $Na_2S_2O_3$ for 5 and 10 min, respectively; G7 and G8- bleaching + 20% $Na_2S_2O_3$ for 5 and 10 min, respectively; G9 and G10- bleaching + 35% $Na_2S_2O_3$ for 5 and 10 min, respectively. After drying the specimens, the adhesive protocol was performed using the Scotchbond Multipurpose, followed by the confection of composite resin blocks. After 24 hours, the specimens were sliced to obtain 48 sticks for each group. The microtensile test was performed in the universal testing machine EMIC and converted into MPa. The resulting data were submitted to one-way ANOVA and Tukey-Kramer test ($p < 0.05$). RESULTS: The bond strength of the group 2 (positive control) was found to be statistically lower than groups 1 (negative control), 4, 6, 7 and 8. However, the negative control showed bond strength statistically equal to all groups in which was used the antioxidant protocol. Conclusion(s): washing with 20% sodium thiosulfate for 5 min has proved so effective in restoring the bond strength, than the waiting of 2 weeks for realize the adhesive restoration after internal bleaching.

059 TREPONEMA SPP. IN PERIAPICAL LESIONS ASSOCIATED WITH THE FAILURE OF ENDODONTIC RETREATMENT.

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Extraradicular root canal infections represent an obstacle to the resolution of the infectious after nonsurgical endodontic retreatment. Treponema species, are fastidious strict anaerobic spirochetes difficult to grow under current laboratory conditions, have been found in root canal infections and acute apical abscesses. Aim: This study investigated the presence of Treponema species in endodontic retreatment-resistant apical periodontitis; their association with the clinical/radiographic features; and the association between the target species. Methods: Microbial samples of periradicular lesions were collected from twenty-five adult patients referred to endodontic surgery after unsuccessful root canal retreatment. Nested-PCR and conventional PCR were used for Treponema detection. Twenty-three periradicular tissue samples showed detectable levels of bacterial DNA. Treponema species were detected in 28% of cases. The most frequently species were T. socranskii, followed by T. maltophilum, T. amylovorum, T. lecithinolyticum, T. denticola, T. pectinovorum and T. medium, T. vicentii was not detected. Positive statistical association was found between T. socranskii and T. denticola, T. maltophilum and T. lecithinolyticum. No association was detected between any target microorganism and the presence of clinical or radiographic features. Conclusion(s): In conclusion, Treponema spp. are present in periapical lesions from teeth with failure of the endodontic retreatment and can participate in the microbial communities associated with the maintenance of the inflammatory process in the apical tissues.

060 CAPTOPRIL EFFECTS ON PERIODONTAL DISEASE EXPERIMENTALLY INDUCED IN RATS - HISTOLOGICAL DATA

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Periodontal disease (PD) consists of a group of inflammatory diseases which result in destruction of tooth supporting structures. They are infectious, with etiological factors related to gram-negative microorganisms, and may have manifestations in several ways. Findings showed that mRNA expression exists in rat gingival tissue for all components of the Renin-Angiotensin System (RAS), the presence of renin as well as Angiotensin Converting Enzyme I (ACE) activity in rat gingival tissue, thus suggesting a possible correlation between the RAS and PD. Aim: Therefore, the aim of this study was to investigate whether captopril, an ACE inhibitor, alters the progression of experimentally-induced PD in rats. Methods: Thus, the model of PD induction by ligature placement around rat lower first molar was used. Animals were divided groups of 10 animals each, which were treated with captopril (via gavage, 30 mg/kg/day) or water (vehicle). It was performed pre- and post-induction treatment of PD. The techniques used in this study were: PD induction in rats, total RNA extraction, reverse transcription-quantitative polymerase chain reaction (RT-qPCR) and histological analyses. All the results were subjected to one-way analysis of variance (ANOVA) and represented means and respective standard errors. Differences between groups were considered statistically significant when $p < 0.05$. Conclusion(s): Based on the results, it was concluded that captopril was not able to decrease bone loss in PD in rats, although this drug altered the expression of mRNA for one RAS target (AT1a) and some mediators of inflammation in periodontal tissue such as, COX-2 and others.