PEF IADR

10-12 September 2008

London   Queen Elizabeth II Conference Centre

Conference Programme and Abstracts

QUEEN ELIZABETH II CONFERENCE CENTRE

10-12 SEPT | LONDON 2008

Methods: Two stainless steel miniscrews per animal were placed (after drilling) in the mandible of four three-month-old pigs and immediately loaded (1N) during 4 weeks. For each device, the absence of clinically detectable mobility need to be reached immediately after insertion in order to include it in the study. Plaque control was carried out twice weekly around the screws. The protocol of the present work was approved by the ethics committee on animal research of the Ecole Nationale Veterinaire de Lyon to make sure that the number of animals included was sufficient to obtain statistically significant results and that the experiment did not induce pain or discomfort. A daily veterinary supervision was performed to verify that the devices did not cause any inconvenience (irritation). Mobility and gingival inflammation were assessed clinically. Osseointegration was evaluated by histological sections.

Results: Survival rate after 4 weeks of loading were 100% but clinical mobility was diagnosed on 25% of the devices. Among the mobile miniscrews, 50% were associated with a moderate clinical gingival inflammation and 50% with an absence of inflammation. Osseointegration was not performed (interposition of a fibrous tissue between the screw thread and the bone tissue) neither for the mobile devices nor for the non-mobile devices.

Conclusions: Gingival inflammation and absence of osseointegration did not appear to influence significantly mobility of immediately loaded miniscrews in pigs. Other parameters such as surface characteristics and the design of the devices have to be studied in a further study to determine their influence on orthodontic screws mobility.

0525 (110755)

Novel Anti-stain and Calculus Reducing Dentifrice Containing Sodium Polyaspartate. A. RAWLINSON1, A. JOWETT[1], T.F. WALSH[1], and I. MARLOW[2], [1]University of Sheffield, United Kingdom, [2]Boots Group PLC, Nottingham, England, Uk

Objectives: To test the efficacy of a novel anti-stain and calculus reducing dentifrice containing Sodium polyaspartate 40% solution (test) compared with a control toothpaste, at 3 and 6 months. A secondary objective was to test the efficacy in controlling gingival inflammation.

Methods: Ethical and research governance approval were obtained and volunteers were recruited to this double blind randomized control clinical trial. Volunteers were allocated to groups using either the test dentifrice or a standard fluoride control dentifrice. The method for randomization permitted blocks with strata for allocation to each group, taking into account both the smoking status of volunteers and their gender. The formation of stain and calculus were used as the criteria for entry into the study for all meeting the general inclusion criteria. Measurements of stain, calculus and gingival inflammation were recorded using the Shaw and Murray Stain score, Volpe-Manhold Calculus score and the Modified Gingival Index respectively. Measurements were made at baseline prior to the removal of all stain and calculus, and after 3 and 6 months. The outcomes were subject to statistical analysis using ANCOVA.

Results: At three months, the test toothpaste was significantly better than the control toothpaste for the control of dental stain and calculus (p<0.05). Interestingly, stain and calculus scores continued to show a numerical trend in favour of the test product to six months, although this did not reach statistical significance. There was no difference between toothpastes with respect to the MGI scores. Sub-analysis showed the volunteers with heavy stain at baseline and light deposits of calculus benefited most from the test toothpaste in terms of stain and calculus reduction.

Conclusion: The novel test toothpaste containing Sodium polyaspartate was more effective than the control toothpaste for the control of stain and calculus.

This research was funded by Boots Contract Manufacturing.

0526 (110592)

Periodontal health of an antique and medieval population from Croatia. M. VODANOVIC[1], M. SLAUS[2], I. SAVIC[1], V. NJEMIROVSKIJ[1], J. KEROS[1], and H. BRKIC[1], [1]University of Zagreb, School of Dental Medicine, Croatia, [2]Croatian Academy of Sciences and Arts, Zagreb, Croatia

Calculus deposits are a significant contributing factor to periodontal disease which is usually characterized by alveolar bone loss, fenestrations and dehiscences.

OBJECTIVES: The purpose of this study is to assess the periodontal health of 174 individuals whose remains were excavated at six archaeological sites in Croatia: three date back to the antique period (4th-6th centuries): Vinkovci, Strbinci, Osijek and three date back to the medieval period (7th-11th centuries): Glavice, Sibenik, Bijelo Brdo.

METHODS: The number of teeth with any degree of calculus was recorded and scored in six categories. Both the mandibular and maxillary alveolar surface areas were measured to determine the extent of alveolar bone loss as an indicator of periodontal disease. This was done by measuring the length of exposed root on the buccal side from the cemento-enamel junction to the resorbed surface on the maxilla or mandible. Alveolar bone fenestrations and dehiscences were recorded. Data was analyzed by Chi-square test and Student's t-test. P-values <0.05 were considered significant.

RESULTS: The mean number of teeth per skull that had calculus was greater in the medieval than in the antique sample. Calculus scores were statistically significantly higher in the medieval sample (X2= 121.505), as was as alveolar bone loss (2.45±1.28 mm in the antique sample and 3.45±1.82 mm in the medieval sample). The prevalence of alveolar bone fenestration and dehiscence was also statistically significantly higher in the medieval sample.

CONCLUSIONS: The presence or absence of calculus and periodontal disease appears to be related to dietary habits as well as to oral hygiene. The higher levels of calculus, alveolar bone loss and the prevalence of alveolar bone defects in the medieval population indicate a greater consumption of cereals and fibrous foods. Still, there is no clear evidence of knowledge about oral hygiene procedures in ancient times on Croatian territory.

0527 (111205)

The Association Between Oral Hygiene and Periodontal Infection. P.V. YLÖSTALO , A.L. SUOMINEN-TAIPALE[2], and M. KNUUTTILA[1], [1]University of Oulu, Finland, [2]National Public Health Institute (KTL), Helsinki, Finland

Objectives: Firstly, to produce evidence about the association between oral hygiene and periodontal infection, and secondly about the accuracy of self-reported tooth brushing frequency as a measure of oral hygiene.

Methods: A Health 2000 Health Examination Survey was carried out in 2000-2001 by the National Public Health Institute of Finland. The subjects in this study consisted of dentate, non-diabetic subjects aged under 50 years (n=2784). Periodontal infection was determined by the presence of periodontal pockets of 4 mm or deeper. Probing was performed on 4 surfaces of each tooth apart from the third molars, and the most severe site of each tooth was recorded. Dental plaque was assessed from the buccal surface of the most posterior tooth of the right side of maxilla (17–14) and from the lingual surfaces of the most posterior tooth of the left side of mandibula (37–34) and the buccal surface of tooth 33. The presence of dental plaque was classified into three categories (no visible plaque, visible plaque in gingival margins, visible plaque also elsewhere)and the highest value was recorded.Tooth brushing frequency was categorised into three categories; twice a day or more, daily, more seldom. We estimated relative risks and 95% confidence intervals using Poisson regression models.

Results: Dental plaque was more strongly associated with the number of teeth with deepened periodontal pockets than tooth brushing frequency. The correlation between the tooth brushing frequency and presence of dental plaque was 0.15.

Conclusions: We found evidence that dental plaque is associated with periodontal infection. The low correlation between tooth brushing frequency and the presence of dental plaque suggests that the validity of self-reported tooth brushing frequency as a measure of oral hygiene is poor. The results suggest that dental plaque can be an important confounder in the association between a non-oral condition and periodontal infection.

0528 (111262)

The Effect of Polihexanide on Dental Biofilm Formation In Vivo. M. BRECX, E.-M. DECKER, H.-P. FREITAG, G. MAIER, and C. VON OHLE, University of Tübingen, Germany

Objectives: Polihexanide (PHMB) is a widely used topical antimicrobial agent. Medical applications are wound coatings, wound rinsing solutions, antiseptic treatment of the eye and abdominal lavage. The aim of this study was to evaluate the effect of PHMB as mouthrinse on the de novo dental biofilm formation in vivo.

Methods: In a double-blind randomized controlled clinical study the effect of the PHMB containing mouthrinse solution (Prontolind®) on biofilm formation was compared to the efficacy of 0.2% chlorhexidine rinse (CHX) as positive control and to 0.9% saline solution (NaCl) as negative control. Six volunteers wore intraoral splints supplied with standardized sterile human enamel coupons for biofilm generation for 96h. They rinsed their oral cavity twice daily for 30s. Sampling points were after 24h, 48h, 72h and 96h. The biofilms were characterized by evaluating the microbial vitality using fluorescent dyes that labelled vital and dead bacteria. Furthermore, the %-surface area coverage of the enamel slides with biofilm was monitored.

Results: The mean vitality was reduced to 31% (24h) and 26-34% (48-96h) after PHMB application compared to 33% (24h) and 23% (48-96h) following CHX rinsing. In contrast the control rinse with NaCl resulted in a higher vitality of 65-70% (24-96h). Microbial colonization of the sample surfaces after PHMB rinsing showed surface area coverage of 20% (24h) and 11-18% (48-96h). CHX use reduced the colonization to 10% (24-48h) and 21-30% (72-96h). During saline application the colonization with dental biofilm increased constantly from 48-64% (24-48h) to 80% (72-96h).

Conclusion: The application of the PHMB formulation used as mouthrinse showed a similar antiviral effect and reduction of the de novo biofilm formation in the oral cavity over a test period of 4 days compared with CHX which still is considered the antibacterial gold standard.

Supported by Prontomed, Germany.

0529 (111451)

Local Delivery Antimicrobials for Chronic Periodontitis. J. SUVAN[1], D.R. MOLES , I.G. NEEDLEMAN[2], M. KRAEHENMANN[2], M. TONETTI[3], and N. DONOS[4], [1]UCL Eastman Dental Institute, London, [2]UCL Eastman Dental Institute, London, United Kingdom, [3]European Research Group on Periodontology, Genova, Italy, [4]UCL Eastman Dental Institute and Hospital, London, United Kingdom

Objectives: Local delivery antimicrobials may enhance the effects of non-surgical therapy. Numerous trials investigating various products, many with conflicting results, have been published. This project presents results of a systematic review of randomised controlled trials (RCTs) investigating the adjunctive use of local delivery antimicrobials in chronic periodontitis patients.

Methods: Search strategy included electronic and hand searching, bibliographic references review and industry/expert contact. MEDLINE, EMBASE, SCISEARCH, CENTRAL, LILACS, SIGLE, BLDCP, COS, NRR, and CCTMR (no year/language restrictions) were searched. RCTs that included chronic periodontitis patients, sustained or controlled release local delivery antimicrobials, reported pocket probing depth (PPD) and/or clinical attachment level (CAL), and performed patient level analysis were eligible. Screening and data abstraction (including bias protection assessment) were performed independently, in duplicate. Meta analyses were performed when appropriate using random effects models.

Results: 270 titles and abstracts were screened, resulting in 130 full text articles assessed for eligibility with 67 being included. Six antimicrobial agents delivered in a sustained or controlled release form were identified from studies providing sufficient information for inclusion in meta-analyses. Five agents found to provide statistically significant adjunctive benefits in PPD and/or CAL were Metronidazole (PPD: 0.23mm, 95%CI 0.11 to 0.44; CAL: 0.21mm, 95%CI 0.00 to 0.42), Doxycycline (CAL: 0.53mm, 95%CI 0.18 to 0.89), Tetracycline (PPD: 0.35mm, 95%CI 0.04 to 0.65; CA