POSTER ABSTRACTS

Etiology and Pathogenesis

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Ref no: EUABS065960

Assessment of single nucleotide polymorphism at IL-1β +3954 in Turkish chronic periodontitis population

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Aim: IL-1β is a multifunctional proinflammatory mediator which stimulates bone resorption and inhibits bone formation by activation osteoclasts and stimulation PGE2 synthesis. IL-1β gene has been associated with increases in IL-1 production. The aim of present study is to determine IL-1β gene polymorphism and their association with periodontal disease in Turkish chronic periodontitis (ChP) population.
Material and methods: Samples of venous blood were obtained from 98 patients with ChP and 72 age-matched healthy subjects. The IL-1β promoter sequences at position +3954 was amplified by polymerase chain reaction (PCR) and the PCR-RFLP technique was used to investigate the polymorphism. Genotype and allele frequencies were calculated and data were analyzed using the Mann–Whitney U test.
Results: The frequency of polymorphism at position IL-1β +3954 was increased in patients with ChP compared to healthy control patients ($P < 0.05$).
Conclusion: This study demonstrates that the IL-1β +3954 polymorphism was strongly associated with susceptibility chronic periodontitis in Turkish population. According to the results a functional polymorphism of IL-1β gene could act a risk factor for chronic periodontitis. This study was supported with project number 485 by Scientific Research Projects Department of İstanbul University

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Expression of MMP-9 in gingival crevicular fluid and in the hypertrophic gingiva during orthodontic teeth movements

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Aim: Involvement of MMP-9 in periodontal remodeling process is known but is insufficiently clarified in periodontal remodeling during fixed orthodontic therapy.
Material: Twenty-three patients (16 women, 7 men), with ages comprised between 14 and 27 years, with fixed orthodontic therapy.
Method: We obtained GCF samples at the level of upper-right canine ans upper left central incisor at 1 hour before the application of the orthodontic forces, at 1 hour, 4 hours, 8 hours and weekly after, until 8 weeks of treatment. In case of gingival hypertrophy we performed gingivectomy and we determined the expression MMP-9 both in GCF and hypertrophic gingiva. Periodontal indexes were calculated and rigorous oral hygiene was thought to all patients at each periodical visit.
Results: We noted an increase of MMP-9 at 1 hour after the application of orthodontic forces with a significant increase after 4 hours and then decrease to a baseline level after 8 hours. In 6 patients (2 women and 4 men), we noticed an increase in the gingival volume, between the 21st and 45th day. In those patients, the level of MMP-9 in GCF began rising 2 weeks before. At the moment of the gingivectomy we determined the expression of MMP-9 in the hypertrophic gingiva, which was very high.
Conclusions: Those results suggest that collagen metabolism and the remodeling processes are very intense and the role of the MMP-9 is very important.

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Ref no: EUABS065947

Collagen gene expression patterns in normal and diseased periodontal oral mucosa

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Aim: Periodontal disease (PD) usually affects all the tissues that surround and support the teeth. However, the genetic and molecular alterations that are present in the affected connective tissues are unknown. In this work, we have quantified the gene expression of several major components of the extracellular matrix of the connective tissue in human periodontal tissues to shed light on the pathogenesis of PD.
Material and methods: Ten oral mucosa (OM) biopsies were analyzed in this work using high-density oligonucleotide microarrays (Affymetrix U133 plus system), including 5 normal control samples and 5 PD samples. Then, all genes with a role in the synthesis of several types of collagen fibers were selected. Genes whose expression was at least 2-fold in normal OM in comparison with PD OM were selected.
Results: Our analysis revealed that the genes encoding for collagens type IV and XX (COL4A6 and COL20A1) were upregulated in control OM, whereas several genes with a role in the synthesis of collagens type I, IV, IX, XII, XV, XVIII and XXIV (COL12A1, COL15A1, COL18A1, COL1A1, COL1A2, COL24A1, COL4A1, COL4A2, COL6A1 and COL9A1) were preferentially expressed by PD samples.
Conclusions: Gene expression analysis suggests that the synthesis of several components of the connective extracellular matrix, especially collagen fibers, could be altered in the OM of patients with PD and might contribute to the progression of the disease. Supported by FIS 08/615.

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Identification of periopathogens in combined endodontic-periodontal lesions and their correlations with clinical parameters

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Objective: To investigate the concomitance of 5 bacteria (*Aa, Pg, Tf, Td, Pi*), known both as periodontal and endodontic pathogens, in samples from combined endo-perio lesions.
Methods: Forty one patients, 21 with teeth presenting combined lesions of primary endo origin and 20 with combined lesions of primary perio origin. Patients having received antibiotics within the preceding 3 months were excluded. Clinical examination (PD, CAL, BOP) was performed, together with X-rays and microbiological investigation of endo and perio biofilms. Semiquantitative evaluation of the investigated bacteria was performed by molecular genetic assay using the Micro-IDent Kit (HainLifescience, Nehren, Germany). Readings were assigned as follows: score 0–no bacterial load, score 1 positive load ($> 10^4$, $> 10^3$ for *Aa* respectively). Score 1 was used as cut-off level to contrast colonization versus non-colonization. Spearman test was used for the co-variation of the pathogen detections.
Results: In all pat, *Tf* and *Pi* had a positive association in endo samples, as well as *Tf* and *Pg* in perio samples ($P < 0.01$). No significant relation could be established between PD and the intensity of detection of the pathogens expressed as scores, although a significant negative correlation was found between PD and the positive detection of *Tf* in perio samples ($r = -0.33$, $P < 0.05$).
Conclusions: Results suggest that connections between perio and endo niches could lead to refractory courses of either endo or periodontal infections. Study supported by the Eur. Soc. of Endo.

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Ref no: EUABS065932

Qualitative and semiquantitative evaluation of periopathogens in combined endodontic-periodontal lesions

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Objective: To correlate by scores 5 perio and endo pathogens (*Aa, Pg, Tf, Td and Pi*) in samples from combined endo-perio lesions, to establish correlations with clinical parameters.
Methods: 41 pat.-2 groups: 21 teeth with combined lesions of primary endo origin, 20 teeth with lesions of primary perio origin. Pat. having received antibiotics in last 3 months were excluded.Clinical parameters (PD,CAL,BOP) were measured, X-rays and microbiological sampling from the endo space and perio pockets were performed. Semiquant evaluation of bacteria was performed with the Micro-IDent-kit (HainLifescience, Nehren, Germany). Readings were assigned as scores: 0-no bacterial load; 1-bacterial load 10^4 (10^3 for Aa); 2-increased load 10^4–10^5 (10^3–10^4 for Aa); 3-high load 10^5–10^6 (10^4–10^5 for Aa); 4-extremely high load $> 10^7$ (10^6 Aa).Frequency distributions of positive tested germs were assessed. Statistics: Spearman rank correlation.
Results: In all pat, a medium positive correlation was found between *Aa*-endo and *Aa*-perio ($r = 0.57$, $P < 0.01$), which increased in the group with lesions primarily endo ($r = 0.61$, $P < 0.01$), and remained significant in the group with lesions primarily perio ($r = 0.50$, $P < 0.05$). In all pat, a medium negative correlation was found between *Pi*-perio and *Pg*-endo ($r = -0.35$, $P < 0.05$). No correlations between clinical parameters and frequency of bacterial detection were established.
Conclusions: Combined lesions could reveal strong relationship between endo and perio infections in this close area. Study supported by Eur.Soc. of Endo.

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Ref no: EUABS065972

Cytokeratin-expression profiling as a quality control of oral mucosa substitutes generated by tissue engineering

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Aim: Different techniques were used to evaluate the quality and efficiency of oral tissues developed by tissue engineering (TE). In this work, we assessed the usefulness of a model of artificial human oral mucosa (OM) by *in vivo* grafting and evaluation of cytokeratin (CK) expression at both *in vitro* and *in vivo* levels.
Materials and methods: Human OM substitutes were generated from primary cell cultures of human oral fibroblasts and keratinocytes using fibrin-agarose (f-a) scaffolds. Air-liquid culture technique was used to induce stratification and differentiation of the epithelial layer. *In vivo* evaluation was carried out by implantation of the OM substitutes at the back of 9 Fox1nu/nu immunodeficient athymic mice for 4 weeks. Expression of several CKs and proliferating cell nuclear antigen (PCNA) was determined by microarray and immunohistochemistry.
Results and discussion: The OM substitutes kept *in vitro* developed a multilayered epithelium that expressed PCNA and markers of simple epithelia (CKs 7, 8 and 18) and stratified epithelia (CKs 5 and 13). Then, bioengineered tissues grafted onto nude mice exhibited complete biointegration, showing a CK expression pattern very similar to normal native OM controls, with the formation of rete ridges and neovascularization. Our results suggest that *in vitro* and *in vivo* CK profiling is a good quality control for human tissue substitutes generated by TE and imply that our model of f-a OM substitute could have potential clinical value.

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Ref no: EUABS065973

Synthesis of extracellular matrix components by tissue-engineered human oral mucosa subtitutes

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Aim: *In vitro* reproduction of all proteins that are present in the native extracellular matrix is very difficult. In this work, we have carried out a gene expression analysis of the major components of the extracellular matrix in both human native controls and bioengineered oral mucosa (OM) samples.
Materials and methods: Human OM substitutes were generated by using fibrin-agarose scaffolds with fibroblasts entrapped within and keratinocytes seeded on top. To analyze the gene expression profile of controls and artificial OM samples, total RNA was analyzed by using Affymetrix U133-plus 2.0 microarray chips. Genes with a role in extracellular matrix were selected, and genes with at least 2-fold increased expression in the group of controls or in the group of bioengineered samples were considered overexpressed.
Results and discussion: OM substitutes showed overexpression of genes encoding for several metallopeptidases, biglycan, several

collagens, decorin, elastin, fibronectin, laminins β1 and γ1, for example. In contrast, native OM expressed high amounts of RNA of ADAMTS18, ADAMTS20, ADAMTS6, ADAMTSL1, collagen 14, fibrillin 3, laminin β4 and matrilin. Expression of more than 100 genes was similar for native and artificial OM. These results suggest that our artificial stroma is able to induce the cells to initiate an active process of remodeling by synthesizing several extracellular products that normally exist in native OM controls. Supported by CTS-06-2191 and CM2005/011

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The effect of *Aggregatibacter actinomycetemcommitans* lipopolysaccharide on rat periodontal tissues

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Aggregatibacter actinomycetemcommitans (*A.a*) is considered to be associated with aggressive periodontitis. *A.a* produces a lot of tissue damaging products, including LPS. Recent studies have shown that MMP-13 would be not only related to collagen degradation on connective tissues, but also associated with alveolar bone destruction. The purpose of this study was to evaluate the effects of *A.a* LPS on osteoclastogenesis and the expression of MMP-13 in periodontal ligament and alveolar bone. Experimental periodontitis (upper posterior teeth) was induced by delivery of *A.a* LPS for 8 weeks in 15 Sprague-Dawley rats. PBS was given in 10 rats served as a control. Tissue blocks were fixed and prepared for TRAP stains and immunohistochemical stains. LPS injection induced severe bone loss whereas PBS-injection induced unchanged ($P < 0.001$). The number of TRAP-positive multinucleated osteoclast-like cells was significantly higher in periodontitis-group when compared with control. Immunolocalization of MMP-13 was mainly observed at the PDL cells near to alveolar bone and osteoblasts lining on irregular bone surfaces in periodontitis groups. These results suggest that *A.a* LPS induce alveolar bone resorption by formation of osteoclasts and the expression of MMP-13 mRNA in osteoblasts. This *A.a* LPS-induced experimental periodontitis model also represents chronic inflammatory models of bone resorption.

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Ref no: EUABS066064

Increased total oxidant status and decreased total antioxidant capacity in serum and saliva in patients with chronic periodontitis

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Background: Oxidative stress, increase in oxidants and/or decrease in antioxidant capacity, is one of the potential biochemical mechanisms involved in the pathogenesis of periodontitis. In this study, total oxidant status (TOS), total antioxidant capacity (TAOC) and a novel oxidative stress index (OSI) in serum and saliva were investigated in patients with chronic periodontitis (CP).
Materials and methods: Thirty-six CP patients and 28 periodontally healthy controls were enrolled in the study. After clinical measurements and samplings, serum and saliva TOS and TAOC concentrations were measured by novel automatic colorimetric methods. OSI was calculated as [(TOS/TAOC) × 100].
Results: Serum and saliva TOS levels and OSI were significantly higher; TAOC levels were significantly lower in the CP group than the control group ($P < 0.05$). Significant positive and negative correlations were observed between periodontal parameters and TOS, TAOC and OSI values (except serum TOS) ($P < 0.05$).
Conclusions: The results revealed that both systemic and local/saliva TOS and OSI significantly increased, whereas TAOC decreased in periodontitis. The findings suggest that increased TOS and decreased TAOC may play an important role in the pathology of periodontitis, and are closely associated with the clinical periodontal status. OSI may be a useful and practical parameter to evaluate the oxidant/antioxidant status in periodontal disease. However, further research is needed on this topic.

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Ref no: EUABS066052

The α2 integrin +807 c/t polymorphism in cyclosporine-induced gingival overgrowth

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Aim: The α2 integrin serves as a specific receptor for type I collagen in fibroblasts and plays a key role in collagen phagocytosis. Since drug-induced gingival overgrowth (GO) is associated with decrease in collagen phagocytosis by a reduction of α2 integrin expression in fibroblasts the present study aimed to evaluate whether α2 integrin +807 C/T polymorphism is associated with GO induced by cyclosporine A (CsA).
Materials and methods: Genomic DNA was obtained from peripheral blood of 71 renal transplant patients medicated with CsA exhibiting GO (GO+), 78 CsA-treated patients without GO (GO-) and 52 tacrolimus medicated patients without GO (Tac). Clinical periodontal parameters including probing depth and plaque, papilla bleeding and hyperplasia indexes were recorded. α2 integrin +807 C/T polymorphism was genotyped by PCR-RFLP method. The data were analyzed by chi-square, Fisher exact, logistic regression and Mann-Whitney U tests.
Results: Distribution of TT genotype was similar in GO+, GO- and Tac groups (36.6%, 43.6%, 40.4%, respectively). No significant differences were observed between GO+, GO- and Tac groups regarding T allele frequency (53.5%, 57.7%, 62.5%, respectively) and T allele carriage (70.4%, 71.8%, 84.6%, respectively) of α2 integrin +807 C/T gene.
Conclusions: Based on the findings of the present study, it seems unlikely that α2 integrin +807 C/T gene polymorphism is related to CsA-induced GO.

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Investigation of the relationship between the polymorphism-330 (t → g) in the il-2 gene and localized aggressive periodontitis in Turkish population

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Background: Interleukin-2 (IL-2) which is a pro-inflammatory cytokine is produced by activated T cells and has a powerful effect on a variety of immune cells. It is involved in B-cell activation and stimulation of the macrophages, natural killer cells, T-cell proliferation and the stimulation of the osteoclastic activity. It is known that IL-2 is closely associated with periodontal breakdown. The aim of our study was to investigate the genetic association of the IL-2 polymorphism in patients with localized aggressive periodontitis (LAgP) in Turkish population.
Material and methods: Venous blood samples were obtained from 64 patients with localized aggressive periodontitis (LAgP) and 89 healthy controls. The IL-2 promoter sequences at -330 were amplified by polymerase chain reaction (PCR). PCR-RFLP

technique was used to investigate the polymorphism. Genotype and allele frequencies were calculated, and data were analyzed by Mann–Whitney U test.
Results: There was a statistically significant ($P < 0.05$) difference at position -330 T to G between patients with localized aggressive periodontitis and healthy controls.
Conclusion: We conclude that the IL-2 gene polymorphism at position -330 seems to be associated with localized aggressive periodontitis in Turkish population.
Acknowledgement: This study was supported with project number 485 by Scientific Research Projects Department of Istanbul University

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Corcorrelation between IL-1β, IL- 6, TNF-α and clinical attachment loss in aggressive and chronic perioperiodontitis
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Objective: The aim of this study was to investigate the possible correlation among IL-1β, IL-6, TNFα and attachment loss (LoA) and probing depth (PD) from gingival samples of chronic and aggressive periodontitis.
Methods: Clinical parameters including LoA, PD and bleeding index of 11 patients with moderate to advanced periodontitis were recorded and gingival tissue specimens from 12 chronic and 14 aggressive active sites were cultured with Fetal Calf Serum + RPMI + Amphotericin + Gentamicin in the 96-well plates for 72 hours. The cytokines present in the culture media were quantified using an enzyme-linked immunosorbent assay (ELISA) in each case and results were statistically analyzed.
Results: The overall means of LoA, PD, IL1β, IL-6 and TNF-α were (6.8 ± 1.3 mm, 6.5 ± 1.2 mm, 111.23 ± 143.4, 10.1 ± 16.9 and 5.2 ± 0.2) respectively. There weren't significant differences among 3 cytokine concentrations in Aggressive and chronic periodontitis. There were not any correlation among cytokine concentrations and clinical parameters. There were direct statistic correlations between IL-6 and TNF-α in both periodontitis and direct statistical correlations between IL-1β and TNF-α only in chronic periodontitis ($P < 0.05$).
Conclusions: Regarding to irritation of bacterial products in both types of periodontitis and synergy among them, especially correlation between TNF- α and both IL-1β and IL-6, TNFα seems to play a more important role, however, future studies is strongly suggested.

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Ref no: EUABS066319
The influence of diabetes on gingival crevicular fluid and serum substance P levels
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Objective: To examine the relationship between the substance P (SP) level in human serum and gingival crevicular fluid (GCF) and the degree of periodontal disease in diabetic patients.
Materials and methods: Fourty-five patients with type II diabetes (DM) and 40 patients without DM were enrolled. GCF was collected from randomly selected two sites, one healthy and one deepest pocket in mouth, the levels of substansce P, in the serum and GCF were quantified by radioimmuno assay. Periodontal parameters were recorded.
Results: There was no difference in serum SP levels compared to healthy subjects. However, when the SP levels stratified into 2 groups based on hA1c. (hA1c < 7 and ≥7) the difference among groups become significant. There was no difference between gingival crevicular SP levels between diabetic and control group in healthy pockets. In contrast, when SP GCF levels in healthy and deep pocket compared in diabetic patients the difference was statistically significant ($P = 0.02$). The deep pockets have significantly higher levels of SP 91.79 pg/mL, compared to healthy pocket 66.99 pg/ml. Additionally, GCF levels in deep pockets was correlated with plaque index ($r = 0.32$, $P = 0.04$).
Conclusion: Diabetes does not seem to affect SP levels in GCF and serum; however when the hA1c levels above 7% serum SP level decreased. Similar to chronic periodontal disease SP level increase in deep pockets in diabetic patients as well. The change in SP levels was localized to deep pockets.

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Ref no: EUABS066163
Infection of the gingival epithelial barrier by *Porphyromonas gingivalis* strains *in vitro*
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Background: *Porphyromonas gingivalis* is known as one of the etiologic agents of periodontal infection and expresses a variety of virulence factors. Gingipains, extracellular cysteine proteinases constitute a major virulence factor of this bacterium. Gingival epithelial cells form the first line of defence against microbial challenge. *In vitro*, oral keratinocytes form an epithelial barrier, which is characterized by a distinct transepithelial electrical resistance (TEER) (Groeger et al., 2008). In this study immortalised human gingival keratinocytes were used to investigate the influence of different strains of *P. g.*, gingipains and other bacterial proteases on the TEER.
Methods: The Immortalised cells were seeded on inserts until they developed a TEER between 70 and 100 Ohm × qcm. *P. gingivalis* ATCC 33277, KDP 136 and W83 were applied. The specific RGP and KGP gingipain inhibitors FFRck and Z-FKck were added. TEER was measured before and at different intervals after infection.
Results: *P. g* caused a decrease of the TEER from 70 Ohm × qcm to nearly zero (W83), 20 Ohm × qcm (ATCC 33277) and 40 Ohm × qcm (KDP 136) 24 hour after infection. The decrease was accelerated if the bacteria were applied to the basolateral part of the insert. Gingipain inhibitors delayed the decrease of the TEER as well as *P. g.* KDP 136, a gingipain defect mutant.
Conclusions: The impact of *P. g.* infection on the oral barrier can be attributed in part to the activity of gingipains and other bacterial proteases.

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Ref no: EUABS066165
Periodontitis lesions are the source of salivary cytomegalovirus
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Backround: Herpesviruses are frequent inhabitants of diseased periodontal pockets. The aim of this study was to determine the DNA copy counts of human cytomegalovirus (HCMV) and Epstein–Barr virus (EBV) in whole saliva of patients with periodontitis, gingivitis and no teeth.

Methods: The study included 9 chronic periodontitis patients, 9 gingivitis patients and 8 subjects having no teeth for at least 2 years. In each study subject, unstimulated whole saliva sample was collected for virological testing. Taq Man real-time polymerase chain reaction assay was used for used in herpesvirus identification.
Results: Salivary HCMV was detected in 33% of chronic periodontitis patients but not in any of the gingivitis or edentulous subjects ($P = 0.042$). Salivary EBV occurred in 77% of periodontitis patients, in 44% of gingivitis patients and in 63% of persons with no teeth. Positive saliva samples showed HCMV counts in the range of 3.3×10^3–4.2×10^4 and EBV counts in the range of 3.6×10^2–1.6×10^9.
Conclusions: HCMV and EBV are commonly found in saliva samples of periodontitis patients. However, because salivary HCMV was not detected in saliva of gingivitis or edentulous patients, it is suggested that inflamed periodontal pockets are the major source of salivary HCMV. Maintaning a healthy periodontium may reduce the risk of salivary transmission of HCMV to close acquaintances.

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Ref no: EUABS066126

Cd^{4+} T helper lymphocyte apoptosis due to enamel matrix derivate

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Introduction: Enamel matrix derivate (EMD) is successfully used in regenerative periodontal surgery. However the exact EMD cellular and molecular mode of operation remains incompletely understood. Uneventful healing is concordantly reported throughout the literature. Thus an EMD effect on immunocompetent cells is likely. As T lymphocytes are modulating inflammation within chronic periodontitis the EMD influence on T cell apoptosis as a crucial feature in wound healing was investigated in this study.
Materials and methods: After immunomagnetic positive human primary peripheral blood CD^{4+} lymphocyte selection 5×10^5 cells were incubated with 1, 25, 50 and 100 μg EMD/ml for 24 hours. Cell incubation for 24 hours without EMD served as a control. Annexin V-FITC Apoptosis Detection Kit was used according to manufacturer's instructions. FACS raw data were compensated using FACSDiva-Flow Cytometry-Software Version 5.0.
Results: Dose-dependent rising percentage of solely annexin-V positive events representing apoptosis showed 0.1% in the control at 1 μg EMD/mL a rise to 0.3%, at 25 μg to 2%, to 13.7% at 50 μg and at 100 μg EMD/ml to 32.4% could be identified.
Conclusion: *In vitro* EMD causes dose dependent apoptosis in human peripheral blood CD^{4+} T helper cells. This may be interpreted as a further feature for uneventful healing as seen *in vivo*.

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Ref no: EUABS066081

Expression of CRF receptors in mast cells of human periodontal tissues: targets for direct action of stress?

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The relationship between periodontal illness and psychosocial predisposing factors is well established. While bacteria are the triggering agents of the disease, local host tissue mechanisms seem to cause most of the tissue damage and disease chronicity. Thus, we sought to investigate histochemical targets for potential neuroimmunomodulatory mechanisms taking place. Since the neuropeptide corticotropin-releasing factor (CRF) is a well established key mediator of various stress responses, we examined the tissue expression of its receptor (CRF-R1, 2). CRF-R1 expression was detected not only in primary sensory and sympathetic nerve endings accompanying small peripheral blood vessels but also in local cell populations, especially mast cells. Morphologically distinguishable types of mast cells, i.e. blood vessel-associated ovoid mast cells, as well as a differently shaped type of mast cells with dendritic appearance also expressed one or both receptors for CRF and occasionally also CRF binding protein. Taken together, our data suggest that non-inflammatory predisposing factors might cause differential numbers of mast cells in the human periodontium and CRF/CRF-R1, 2 expressions therein which in turn may be of significant importance for local (over) stimulation of immune processes.

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Ref no: EUABS066070

Immunohistochemical analysis of TLR4 and MCD14 in patients under immuosupressive therapy and in patients with different periodontal diseases

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Aim: Immune cell recognition of lipopolysacharides via CD14 and toll-like receptor 4 (TLR4) complexes plays a crucial role in linking innate and adaptive immune responses. This study was aimed to investigate the expression of TLR4 and membrane-bound CD14 (mCD14) in human gingival tissues of patients under immuosupressive therapy and in patients with different periodontal diseases.
Methods: Gingival tissues were obtained from 7 renal transplant patients receiving cyclosporine-A (CsA) and having gingival overgrowth (GO), 7 patients with chronic periodontitis, 7 with aggressive periodontitis, 7 gingivitis and 7 healthy subjects. Immunohistochemistry was used for the localization of mCD14 and TLR4 in tissue specimens.
Results: mCD14 and TLR4 expression were simultaneously detected in all healthy and diseased gingival tissues. mCD14 and TLR4 positive cells were predominantly confined to the epithelium-connective tissue interface and were higher in tissues of patients with CsA GO and chronic periodontitis patients compared to other groups. Their expressions were predominantly found in the deep gingival connective tissues of CsA GO patients.
Conclusion: The present study suggests that mCD14 and TLR4 protein expression may be interrelated and appear to be associated with different periodontal conditions. CsA treatment may up-regulate mCD14 and TLR4 expression in CsA-induced overgrown gingiva and demonstrate the close association between CsA-induced GO and activation of innate immunity.

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Association of interleukin-1 cluster genes polymorphisms with chronic periodontitis in Macedonians

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Background: Periodontitis is a multifactorial disease whereby both environmental and genetic factors contribute to its aetiology

and/or clinical severity. The aims of this study were to determinate the prevalence of IL-1 cluster genes polymorphisms and their association with chronic periodontitis in the Macedonian population.
Methods: The group of 125 unrelated Macedonian subjects with chronic periodontitis and 301 periodontitis free Macedonian subjects were studied. Cytokine genotyping was performed by PCR. The population genetics analysis package (PyPop) was used for analysis of the IL-1 gene cluster.
Results: The frequency of *IL-1* alleles in patients with periodontitis varies from 0.793 for *IL1A -889/C*, 0.737 for *IL-1B +3962/C*, 0.737 for *IL-1RN mspa 11100/T*, 0.681 for *IL-1R psti 1970/C,* followed by 0.632 for *IL-1B-511/C*, indicating common "wild type" allele. We determined 22 different haplotypes from the total number of 32. The most frequent haplotypes in patients with periodontitis for *IL-1* are *CCCCT* (0.215), *CTCCT* (0.169), *CCCCC* (0.081), *CCCTC* (0.068), and *CCCTT* (0.065). All pairs of loci for *IL-1*, except for *IL-1B +3962* and *IL-1RN mspa 11100*, are in linkage disequilibrium, with $P < 0.05$. The heterozygous of the IL-1B-511 C: T were significantly higher in cases than in controls (OR 2.11, 95%CI 1.35–3.32, $P = 0.001$) and we concluded susceptible association between IL-1B-511 C: T genotype and periodontitis.

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Ref no: EUABS067036

Study of collagen modeling using CD34, collagen IV and MMP-9b immunostaining in gingival hypertrophy generated by therapy with calcium antagonists

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Aim: The mechanism of calcium antagonist's induced gingival hypertrophy is an old subject in dental research. We tried to follow the collagen transformations using different immunomarkers.
Material: 11 patients treated with calcium antagonists in therapeutic doses that suffered gingival hypertrophy. None of these patients presented diabetes mellitus or any previous treatments with hidantoine and cyclosporine.
Methods: We measured the periodontal indexes and performed gingivectomy. We performed immunomarking for MMP-9 and collagen IV and CD34 immunostaining.
Results and conclusions: Positive immunohistochemical reactions in various degrees show an intense process of collagen remodeling on a background of local inflammation.

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Ref no: EUABS067030

Azithromycin inhibits interleukin-8, RAC1 and nuclear factor kappa B activation in an oral epithelial cell line stimulated with lipopolysaccharide

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Aims: Recent studies have shown that the 15-member macrolide antibiotic, azithromycin does not only play the role as antibacterial but also results in the immunomodulators. However, the interleukin-8 (IL-8) is an important inflammatory mediator in the periodontal disease, there has been little report on the effect of azithromycin in IL-8 production from human oral epithelium. Therefore, we investigated the effects of azithromycin on IL-8 production from KB cells.
Materials and methods: KB cells were stimulated by Escherichia coli or Aggregatibacter actinomycetemcomitans lipopolysaccharide (LPS) with or without azithromycin (AZM). IL-8 mRNA and protein expression in response to LPS were analyzed by real-time PCR and ELISA. Activation of Rac1 and nuclear factor kappaB (NFκB), which is important for IL-8 expression, was analyzed by Western Blotting and ELISA, respectively.
Results: The level of IL-8 mRNA expression, IL-8 production and NFκB activation were decreased by additional azithromycin. Interestingly, the Rac1 activation was inhibited by AZM as well as using Rac1 inhibitor.
Conclusions: This study suggests that azithromycin inhibits LPS-induced IL-8 production derived from oral epithelial cell line. This inhibition might be in part resulted from inhibition of Rac1 activation by AZM. The utilization of azithromycin might provide possible benefits in the periodontal therapy, both with respect to antibacterial action and to anti-inflammatory effect.

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Ref no: EUABS067031

Tobacco smoke impairs the innate immune response in oral epithelial cells as a risk factor of periodontitis

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Aims: Accumulating evidence from numbers of epidemiological studies, it becomes to be well known that tobacco use is most harmful risk factor for the development of periodontitis. The exact nature of the relationship between tobacco use and periodontitis is still not clear. The disruption of barrier function of the sulcular and junctional area of gingival epithelium is the trigger of the development of periodontitis. The production of human beta-defensin (hBD), a natural antimicrobial peptide, by gingival epithelial cells exposed to bacterial infections is recognized as a major mechanism of initial immune system. We framed a hypothesis that smoking might affect to the progression of periodontitis by inhibition of hBD production of gingival epithelial cells. In this study, we introduce the effects of cigarette smoke extracts (CSE) for hBD production of human oral epithelial cells.
Materials and methods: mRNA expressions of hDB-1, 2 in human oral epithelial cells (SCC-25) stimulated with/without CSE was detected by RT-PCR. Production of inflammatory cytokines was also investigated for mRNA levels.
Results: mRNA expressions of hDB-1, 2 were reduced in CSE stimulated cells. However, significant change in cytokine expressions was not detected.
Discussion: The results of this study suggests that tobacco smoke may provide environment in which the ability to remove periodontal pathogens decreased by inhibiting protective functions of gingival epithelium such as hBD productions.

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Ref no: EUABS067016

Study of gene expression in gingival tissue of the experimental periodontitis using the diabetic model rats

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Background: Periodontitis has been identified as a major complication of diabetes. However, the biological mechanisms responsible for this relationship remain unclear. In this study, global gene expression in gum with periodontitis was profiled from diabetic ZDF rats.
Material and method: 8 week old ZDF and Lean rats received ligature placement around the second right maxillary molar. At 0,

14, 28, 42 and 56 days, maxillae around the molar was analyzed using micro-CT. At 2 and 7 days, total RNA in gum at the buccal side of the molar was isolated and gene expression analysis was conducted using Agilent Rat Oligo array. We further analyzed the selected genes by Real-time Quantitative PCR.
Result: The bone resorption in both groups significantly increased in a time-dependent manner. However, there was a significant difference in the average of bone resorption in ZDF rat than it in lean rat until 56 days. At 2 days, LBP mRNA expression was significantly higher in the gum with periodontitis from ZDF rat compared to those from lean rat. At 7 days, IL-10 and IL-24 mRNA were significantly lower but IL-2 mRNA was significantly higher.
Conclusion: The results of this study indicate that the role of diabetes in modulating bone destruction with periodontitis may involve increased level of LBP and reduced levels of Th2 cytokines. A better understanding of infectious bone resorption in diabetes and the immune response could explain the relationship between periodontitis and diabetes.

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Ref no: EUABS066988
Localization of interleukin-17 in inflamed periodontal tissue
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Cytokine networks play a central role in the pathogenesis of periodontal disease. In common with numerous human inflammatory diseases, the Th1/Th2 paradigm does not fully explain the immune response observed in the disease. The recent discovery of Th17 cells has provided further insight into the role of T cell differentiation and cytokine production in inflammatory disease. However, the role of IL-17 in periodontal disease remains unclear. Previous studies have identified IL-17 mRNA and protein expression in cell lines and in tissue homogenates from inflamed periodontal tissue, but the location or cell type expressing IL-17 has not been identified. We therefore sought to confirm IL-17 mRNA expression and to investigate the expression of IL-17 protein in situ. We obtained granulation tissue from patients (n = 10) undergoing periodontal surgery. This tissue was fixed and 6 μm sections stained for the presence of IL-17. Sections of fixed tonsillar tissue were used as a positive control. IL-17-encoding mRNA in tissue homogenates was also analysed. We demonstrate that IL-17 is expressed at low levels, and localizes to mononuclear cells within the granulation tissue. However, there were variations between individual patients. These data suggest that whilst IL-17 may play a role in periodontal disease, this role may vary over the course of disease.

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Ref no: EUABS066943
Expression of MMPs and TIMP-1 in gingival tissues from chronic periodontitis patients before and after the initial periodontal treatment
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Background: Matrix metalloproteinases (MMPs) play significant role in extracellular matrix remodeling and their activity is regulated by tissue inhibitors of metalloproteinases (TIMPs). MMPs expression has been compared between healthy and periodontally diseased individuals in previous studies. Though, the possible effect of initial periodontal treatment on the expression of MMPs has not been studied so far.
Aim: To compare the expression of MMP-1, -3, -8 and TIMP-1 in gingival tissues from periodontitis patients before and after the initial periodontal treatment.
Methods: 30 chronic periodontitis patients (15 non smokers, 15 smokers) were studied. The plaque index, gingival index, probing depth and clinical attachment level were recorded. Two gingival samples were obtained from each patient, one prior to treatment at the extraction of a hopeles tooth and a second after during a surgical procedure. The presence of MMPs and TIMP-1 was assessed by reverse transcription-polymerase chain reaction.
Results: All of the clinical parameters improved significantly after the initial treatment. A slightly increase in TIMP-1 expression and reduction in MMP-1, -3, -8 expressions were observed in patients (both smoker and non-smokers) after the periodontal treatment but there was no statistical significance difference.
Conclusions: There are certain indications that initial periodontal treatment might affect MMPs expression in chronic periodontitis patients. Further research is required.

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Ref no: EUABS066935
Clinical aspects of herpes virus implication in periodontal pathology
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Aim: This study had evaluated, from clinical and statistic point of view, the oral symptoms caused by infectious viral diseases and their association with the systemic manifestations, laboratory results and demographic statistics.
Material and method: We studied 68 cases of herpetic gingivo-stomatitis (infected with HSV 1). Lesions of herpes simplex origin are described for both primary and recurrent or secondary forms.
Results and discussions: Oral symptoms of study group had a polymorphic character. 49.8% of the study group presented specific and also non-specific oral manifestations for this viral pathology. We found oral lesions of vesicular and ulceration type in 13 cases (9.0% of total number of studied patients) examined and in 25 cases (17.65% of total number of studied patients) only vesicular lesions.
Conclusion: We concluded that in our area of population there is an increased incidence of these types of viruses with polymorphic character at oral mucosa.

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Ref no: EUABS066639
Characterization and serotype distribution of *A. actinomycetemcomitans* detected in a population of periodontitis patients in Spain
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Objective: To investigate the serotype distribution of *Aggregatibacter actinomycetemcomitans* and the polymorphism of the genes that codify the leucotoxin and the operon of the cytolethal distending toxin (CDT) in untreated periodontitis patients in Spain.
Material and methods: 42 *A. Actinomycetemcomitans*-positive, periodontitis patients were included in the study, and their clinical periodontal status was assessed. On average, 1 or 2 isolates from each patient were subcultured and characterized by specific PCR reactions.

Results: Serotype distribution analysis concludes that the most frequent serotype were A and B and that 16 patients showed monoinfection. From these 16 isolates 56.25% corresponded to serotype A, 25% to serotype B and 16.75% to serotype C. Further characterization of these samples with leucotoxin specific PCR reaction showed that none of the 16 samples presented the 530-bp deletion in the leucotoxin's promoter region. As for the CDT, the operon that codifies for the toxin was present in 68.75% of the samples. On the other hand, 28 patients showed coinfection, mostly with serotypes c and a.
Conclusions: The most common serotypes were A and B. Serotype A was the most frequent in monoinfections, while serotypes D, E and F were not detected. In the majority of samples from monoinfected patients, operon that codifies the CDT (68.75%) and the genes responsible for the codification of leucotoxin (64.29%) were found. None of the isolates belonged to the JP2 clone.

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Ref no: EUABS066885

Immunohistological analysis of the gingiva in the diabetic patients with periodontitis

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Objectives: The aim of this study is to compare the distribution of PDGF and TGFbeta-1 expression before and after periodontal treatment in chronic periodontitis patients with diabetes mellitus (DM).
Methods: Fourteen Type1DM patients, 9 Type2DM patients and 22 systemically healthy chronic periodontitis patients were participated to the study. The gingival tissues were obtained during periodontal surgery and the second biopsies were performed 6 months after surgical therapy. The biopsy specimens were stored into 4%formaldehide diluted with PBS at +4 for 4 hours. The samples were incubated overnight in 30% sucrose solution. Followingly the samples were freezed with izopentan and stored at -80ordm;C. 4 micron thich slices were prepared and stained with adequate antibodies. The positive stained cells were counted under light microscobe with X100, X200 and X400 magnifications. The before and after findings were compared by utilizing Wilcoxon test and the differences from each group were compared by Mann–Whitney U test.
Results: Our analyses demonstrated that PDGF and TGFbeta-1 expression were significantly decreased in both of the diabetic groups compared to those of controls.
Conclusions: These findings may help to explain the maintenance of periodontal tissues in patients with diabetes mellitus.

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Ref no: EUABS066886

Nitric oxide in gingival crevicular fluid of diabetic patients with periodontal disease?

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Background: Nitric oxide (NO) is a free radical which has complex roles in both health and disease. NO has also been implicated in the pathogenesis of numerous inflammatory and autoimmune diseases. Abnormal NO synthesis has been implicated in the pathogenesis of both periodontal disease and diabetes mellitus. Periodontal diseases are more prevalent and of greather severity in diabetic patients (DM) than nondiabetic patients. The purpose of this study was to examine the effects of type II diabetes mellitus on the production of NO in the gingival crevicular fluid (GCF) from normal subjects and patients with chronic periodontitits.
Methods: GCF was obtained from diabetic patients diagnosed with chronic periodontitis (Group I), chronic periodontitis without diabetes mellitus (Group II), diabetes mellitus without chronic periodontitits (Group III) and healthy adults (Group IV). All groups have 20 patients. Type II DM patients were under good metabolic control. The GCF samples of the sutudy groups were measured by colorimetric assay (photometric endpoint determination).
Results: The data were analyzed by Spearman corelation test in statistical means. There was no statistically significant difference in the NO levels of GCF between the study groups ($P > 0.05$).
Conclusion: Our results suggest that this effect may not be influenced by the metabolic control of DM and DM may not effect the NO level of GCF in periodontal tissues.

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Ref no: EUABS066889

The influence of nonsurgical periodontal therapy and smoking status on type 2 diabetes mellitus patients' gingival tissue interleukin-8 level

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While the mechanisms by which mediators and cytokines stimulate neutrophils to migrate across the gingival tissues are still unclear; interleukin-8 (IL-8) is believed to play an important role in response to infection. This study was designed to evaluate the effect of smoking status and periodontal therapy on gingival tissue IL-8 levels of chronic periodontitis (CP) patients with or without type 2 diabetes mellitus (DM). 15 CP patients [7 smoking (S) and 8 non-smoking (NS)] with type 2 DM and 15 CP patients (8S, 7NS) were enrolled. Gingival tissue samples were obtained and clinical parameters were recorded before and after nonsurgical periodontal therapy. Haematoxylin and eosin and immunohistochemical analysis were used to observe inflammation and IL-8 positively stained cell counts. In CP-S group significantly lower levels of mononuclear and total inflammatory cell; IL-8 positively stained mononuclear, epithelial, and total cell counts were observed after therapy. In DM group, IL-8 stained mononuclear cell counts were significantly decreased in both S and NS groups after therapy. Correlations between clinical parameters and cell counts were also noted. Data suggests that nonsurgical therapy may be more effective on inflammatory cell counts and IL-8 mediated immune response of smoker CP patients. Although, IL-8 mediated mononuclear response decreased after therapy, different factors other than IL-8 may contribute to the pathogenesis of periodontal disease in S or NS DM patients.

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Ref no: EUABS065336

Effects of nitric oxide synthase during experimental periodontitis in diabetics rats

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The inhibitors of the NO, may be useful candidates for the treatment of inflammatory diseases. The influence of diabetes mellitus may induce alteration of the inflammation process that may lead to an increase of the severity of diseases. The objective was to evaluate the influence NO in diabetics animals with induced periodontitis. Two hundred fifty-six rats were divided into 8 groups: Group C–control; Group D–diabetic unligated rats (streptozotocin-STZ); Group P–periodontal disease induced by dental

ligature (ligated), Group DP– streptozotocin (STZ)-diabetic, ligated. The others groups had the same name, but they ingested the inhibitor of the nitric oxide synthases (L-NIL). Eight animals of each group were killed at the experimental periods of 3, 7, 15, 30 days. The hemimandibles were removed to evaluate the interdental papilla, contouring or position of the gingiva of the lower first molar, MPO activity and bone loss. Alveolar bone mean loss was statistically higher in the 30-day experimental period for all the groups' water. In the treated groups (L-NIL), the animals with induced periodontitis presented a decrease of the bone loss when compared to the groups that ingested water. The MPO present a significant increase associated with increase of the severity periodontal. The L-NIL groups showed lower MPO activity than the groups that intaked water. It can be suggested that the nitric oxide synthase (L-NIL) decreased the development of periodontal disease in diabetic animals.

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Ref no: EUABS065362

The effects of alpha-tocopherol in combination with sodium selenite on gingival tissues of rats with experimental periodontitis

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Background: The resolution of inflammation with antioxidants after periodontal destruction is a new approach. The purpose of this study was to analyze the morphometric and histopathologic changes associated with experimental periodontitis in rats in response to the systemic administration sodium selenite, alpha tocopherol alone or combination of these agents.
Methods: Forty male Sprague Dawley rats were divided into four groups of ten animals: Groups; A (sodium selenite 0.2 mg/kg/day intraperitoneally), B (alpha tocopherol 40 mg/kg/day intraperitoneally), C (sodium selenite 0.2 mg/kg/day + alpha tocopherol 40 mg/kg/day) and D (control, saline). Silk ligatures were placed at the gingival margin level of the lower left first molar of all rats. The animals were sacrificed after 1 month. The soft and hard tissues **surrounding teeth** were histopathologically examined to assess the differences in alveolar bone loss, inflammatory cells and collagen densities among the study groups.
Results: The inflammatory cell infiltrates in groups A, B and C were significantly lower than group D ($P < 0.05$). In group C the measurements of alveolar bone loss was significantly different from group D ($P < 0.05$). Group C showed a tendency to be more aboundant in collagen density than control group, but not statistically significant ($P > 0.05$).
Conclusions: In our study the combine use of sodium selenite and alpha tocopherol decreased the signs and consequences of inflammation in ligature induced in rat model.

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Ref no: EUABS065353

Elevated GCF cathelicidin LL-37 levels in CsA-induced gingival overgrowth

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Aim: Antimicrobial peptide LL-37, derived from neutrophils and epithelium, is part of host innate immune reponse in oral cavity. In addition, LL-37 is associated with inhibition of protease mediated tissue damage. The aim of the present study was to determine the gingival crevicular fluid (GCF) levels of LL-37 in relation to the pathogenesis of cyclosporine (CsA)-induced gingival overgrowth (GO).
Materials and methods: GCF samples were collected from sites with GO (GO+; $n = 20$) and without GO (GO-; $n = 20$) in 20 renal transplant patients receiving CsA (CsA GO) and CsA-medicated patients having no GO ($n = 20$). GCF were also collected from sites of tacrolimus-medicated ($n = 20$), gingivitis ($n = 21$) and healthy subjects ($n = 19$). Clinical parameters including probing depth (PD), clinical attachment level (CAL), plaque and papilla bleeding indexes were recorded. Data were analyzed by non-parametric statistical methods.
Results: GCF LL-37 levels were significantly elevated at GO+ sites in the CsA GO group in comparison to all other groups ($P < 0.001$). GO+ sites had higher GCF LL-37 levels than sites without GO in CsA GO patients ($P = 0.003$). GCF LL-37 levels were positively correlated with all clinical parameters ($P < 0.05$).
Conclusions: The present study suggests that LL-37 is a key contributor of host defense at sites with GO. Furthermore, elevated GCF LL-37 levels might have implications in the pathobiology of CsA-induced GO.

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Ref no: EUABS065320

Expression of endothelial and inducible forms of nitric oxide synthase in CsA-induced gingival overgrowth

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Aim: Present knowledge regarding the influence of cyclosporin-A (CsA) on nitric oxide synthase (NOS) activity in gingival overgrowth (GO) is still unclear. Present study aimed to evaluate nitrite/nitrate levels in gingival crevicular fluid (GCF) and endothelial NOS (eNOS) and inducible NOS (iNOS) expression in gingiva of CsA-treated patients.
Materials and methods: Twenty-four CsA-medicated renal transplant patients with GO (GO+; $n = 12$) or without GO (GO-; $n = 12$), 10 gingivitis and 10 healthy subjects were included. GCF samples were collected and interdental gingiva was excised. iNOS and eNOS expression was determined by immunohistochemistry. GCF nitrite/nitrate levels were analyzed by Griess method.
Results: iNOS expression was not observed in healthy and GO- groups. In gingivitis and GO+ groups, iNOS expression was significantly increased in connective tissue. Epithelial expression of iNOS was localized to basal keratinocytes and lower layer of str. spinosum in gingivitis group. In the GO+ group, iNOS immunoreactivity was differentially localized to keratinocytes of str. superficiale, but considerably decreased in the str. basale. Weak eNOS expression was found in healthy and GO- groups whereas higher expression in gingivitis and GO+ groups. No intergroup differences were observed regarding nitrite/nitrate levels in GCF.
Conclusion: CsA differentially upregulates iNOS, but not eNOS, in overgrown gingiva which may play a pivotal role in the pathogenesis of CsA-induced GO.

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Ref no: EUABS065312

GCF adrenomedullin and human neutrophil peptide levels in the pathogenesis of CsA-induced gingival overgrowth

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Aim: Adrenomedullin (ADM) is a multifunctional antimicrobial peptide (AMP) secreted constituvely and following induction of live bacteria by oral epithelial cells. Human neutrophil peptide (HNP) is an AMP which is present in oral and periodontal environment and activates acquired immunity. The present study

aimed to evaluate gingival crevicular fluid (GCF) levels of ADM and HNP 1–3 in relation to the pathogenesis of cyclosporine (CsA)-induced gingival overgrowth (GO).
Materials and methods: GCF samples were collected from sites with GO (GO+; $n = 20$) and without GO (GO-; $n = 20$) in 20 renal transplant patients receiving CsA (CsA GO) and CsA-medicated patients having no GO ($n = 20$). GCF were also collected from sites of tacrolimus-medicated ($n = 20$), gingivitis ($n = 20$) and healthy subjects ($n = 19$).
Results: Study groups showed similar GCF ADM levels ($P > 0.005$). CsA-medicated patients having no GO exhibited elevated GCF HNP levels in comparison to all other groups ($P < 0.005$). GO- sites of CsA GO group had similar GCF ADM levels when compared to other groups ($P > 0.0125$), but elevated GCF HNP levels when compared to healthy and gingivitis sites ($P < 0.0125$). GO– sites had higher GCF ADM and HNP levels than GO+ sites in CsA GO patients.
Conclusions: ADM and HNP might be involved in the pathogenesis of CsA-induced GO. Furthermore, low GCF levels of ADM and HNP might be associated with GO in CsA-treated patients.

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Ref no: EUABS065223

The IL-11 and IL-17 levels in aggressive periodontitis patients

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The balance between the anti- and pro-inflammatory cytokines was attributed to have an important role in the periodontal disease pathogenesis. Despite the unique features (familial aggregation, rapid rate of tissue destruction, the age of onset, etc.) of the disease, the mentioned imbalance may modulate the disease progression in aggressive periodontitis (AP). In this study, we aim to investigate the levels of Interleukin (IL)-11 and -17 and their ratio in Gingival Crevicular Fluid (GCF) of AP patients compared to healthy controls (HC). Twenty-eight patients with AP, 20 healthy controls (HC) were included. The AP group was divided into two groups according to pocket depths (PD) (a: PD ≤ 3 mm, b: PD ≥ 4 mm). For each patient, clinical parameter values were recorded. The IL-11 and IL-17 levels were evaluated by ELISA. The IL-17 concentration in AP-a group was higher and the concentration of AP-b group was lower than the HC group ($P < 0.0125$). The total amount and concentration of IL-11 in AP-a group were not found significantly different than HC ($P > 0.0125$). The total amount and concentrations of both cytokines were found significantly lower in AP-b group compared to the AP-a ($P < 0.0125$). In AP-a group a significant negative correlation between the total amount of IL-17 and plaque index score in sampling site was found ($P = 0.028$). Further studies evaluating the levels and ratio of IL-11 and IL-17 with the accepted key cytokines are needed to clarify their role in AP pathogenesis.

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Ref no: EUABS065116

Statin medication and periodontal infection

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Background: Statins have been suggested to have anti-inflammatory effects, independent of their lipid-lowering effects. The aim of this study was to investigate the relation of statin medication with periodontal infection.
Material and methods: Study was based on a subpopulation of the Health 2000 Survey, which included dentate non-diabetic, non-rheumatic subjects who did not smoke, aged 40–69 years ($n = 2032$). Periodontal infection was defined as the presence of teeth with periodontal pockets of 4 mm or more. Statin medication was categorised in two ways; firstly, subjects with statin medication of some sort ($n = 134$) versus those with none, and secondly, subjects taking either simvastatin ($n = 58$), atorvastatin ($n = 38$), some other statin ($n = 38$), or no statin medication. Relative risks (RR) were estimated using Poisson regression models.
Results: We found a statistically non-significant negative association between statin use and periodontal infection after adjusting for confounding factors (RR 0.8, 95% CI 0.7–1.1). Simvastatin medication was most strongly negatively associated with periodontal infection (RR 0.8, 95% CI 0.6–1.0), followed by atorvastatin and other statin medications (RR for both 0.9, 95% CI 0.6–1.4).
Conclusion: Despite the weak negative association, more evidence is needed on the possible effects of statin medication on periodontium.

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Ref no: EUABS065119

Fc gamma receptor gene polymorphisms and its association with periodontal disease in a population in Tamilnadu, India

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Objective: The aim of the present study was to evaluate the occurrence of FcγR gene polymorphisms in a population in Tamilnadu, India and its association with periodontitis.
Material and methods: The study population consisted of 200 subjects, 80 healthy gingiva (healthy), 80 chronic periodontitis (CP) and 40 aggressive periodontitis (AgP). DNA extracted from the withdrawn blood was typed for the following genes (alleles) - FcγRIIa (131H or 131R) FcγRIIIa (V158 or F158) and FcγRIIIb (NA1 or NA2) by allele-specific polymerase chain reaction (PCR).
Results: There was no significant skewing in the distribution of FcγRIIa genotypes between the three groups. The frequency and carriage rate of 131H allele was significantly higher in CP group ($P < 0.05$). There was no significant skewing in the distribution of FcγRIIIa genotypes and allelic frequency with the absence of the homozygous 158V/V in all the three groups. There was a significant increase in the FcγRIIIb NA2/NA2 genotype (83%/52%, $P < 0.05$) and FcγRIIIbNA2 allele carriage rate in AgP group when compared to healthy and CP groups.
Conclusion: FcγRIIa and IIIa genotypes were not significantly associated with AgP. While FcγRIIa131H allele was significantly associated with CP group, FcγRIIIb-NA2/NA2 genotype was significantly associated with AgP but not CP. The results obtained from this study do not produce conclusive evidence for the use of FcyR gene polymorphism as a risk maker for chronic periodontitis.

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Ref no: EUABS065499

Association of interleukin-10 gene polymorphism with localized aggressive periodontitis

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Background and Objectives: Interleukin-10 (IL-10) is an inflammatory and a key immunoregulatory cytokine that may be of significance in the immunopathogenesis of chronic inflammatory

diseases such as periodontal disease. Genetic polymorphisms, modulating host immun responses to the microbial challenge, have been associated with different clinical forms of periodontitis. Genetic polymorphisms in the IL-10 gene might be useful as marker to diagnose to susceptibility to periodontitis. Therefore, the aim of this study was to investigate the association between IL-10 gene polymorphism and localized aggressive periodontitis (LagP) in Turkish population.

Materials and methods: Venous blood samples were obtained from 64 patients with LAgP and 89 healthy controls (C). The IL-10 promoter sequences at position -597 were amplified by polymerase chain reaction (PCR). PCR-RFLP technique was used to investigate the polymorphism. Genotype and allele frequencies were calculated, and data were analyzed by Mann–Whitney U test.

Results: There was a statistically significant ($P < 0.05$) difference at position -597 C/A between LAgP and C.

Conclusions: According to these data, we suggest that IL-10 gene polymorphism at position -597 seems to be associated with LAgP in Turkish population.

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Ref no: EUABS065513

Mandibular basal bone response to estrogenic treatment after ovariectomy: comparison with the femoral bone

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Studies have shown that histamine is involved, by its H2 receptors, in the mechanisms regulating trabecular bone loss in long bones of ovariectomized (OVX) rats. Ovariectomy leads to a proliferation of hematopoïetic stem cells, including mastocytes and other cells which also produce but do not store histamine. The increase of histamine is responsible for a recruitment of preosteoclastes and their differenciation into osteoclasts. We examined the effects of estradiol treatment after ovariectomy on both mandibular basal bone and long bones.

Materials and methods: 3 groups of rats were ovariectomized; 3 control groups were sham operated. 14 days after surgery, 1 OVX group and 1 sham group were sacrified. The 4 other groups received a 17b-estradiol treatment. All remaining animals were sacrificed 28 days after surgery.

Results: In the femoral bone, estradiol significantly limited the effects of ovariectomy on bone resorption parameters. The bone architecture was partially preserved. In the mandibular basal bone no significative difference was observed between OVX groups and sham groups 14 days after surgery. At 28 days, limiting effects on the resorption activity were detectable in the control estradiol group but not statistically significative.

Conclusion: The mandibular basal bone seems to be less affected by the lack of estrogen than the long bone. The control animals responded to the estradiol injections. This confirms the implication of estrogens on physiologic bone remodelling.

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Ref no: EUABS065525

The role of insulin resistance in periodontal infection

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Background: Insulin resistance is a condition that often precedes type 2 diabetes mellitus and cardiovascular diseases. The aim was to examine whether there is an association of the insulin resistance and β-cell function with periodontal infection.

Material and methods: The study population consisted of 2,050 dentate, non-diabetic subjects aged 30–64 years, who had never smoked (Health 2000 Survey). Periodontal infection was measured by the number of teeth with deepened periodontal pockets. Homeostasis model assessment indices were used to measure insulin resistance (HOMA-IR) and β-cell function (HOMA-B). Relative risks (RR) were estimated using Poisson regression models.

Results: In this population we found a weak association of insulin resistance and β-cell function with teeth with deepened periodontal pockets after controlling socioeconomic and behavioural factors. Risk estimates for deep periodontal pockets 6 mm or more were RR = 1.5 (95% CI 0.8–2.8) for HOMA-IR and RR = 1.4 (95% CI 0.7–2.8) for HOMA-B for the highest decile of both indices.

Conclusions: These findings suggest that impaired glucose tolerance may play a role in the development and/or progression of periodontal infection.

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Clinical aspects of herpes virus implication in oral-gingival pathology

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Introduction: This study research purpose is to analyze the infectious diseases with viral ethiology which have also gingival-oral clinic symptoms.

Aim: This study had evaluated, from clinical and statistic point of view, the oral symptoms caused by infectious viral diseases and their association with the systemic manifestations, laboratory results and demographic statistics.

Material and method: We studied 68 cases of herpetic gingivo-stomatitis (infected with HSV 1) during 2005–2007 from Infectious Diseases Clinic and also from Periodontology Department. We analyzed the evolution of specific oral manifestation; lesions of herpes simplex origin are described for both primary and recurrent or secondary forms.

Results and discussions: Oral symptoms of study group had a polymorphic character. 49.8% of the study group presented specific and also non-specific oral manifestations for this viral pathology. The most frequent lesions were the vesicular type associated or not with ulcerations. We found oral lesions of vesicular and ulceration type in 13 cases (9.07% of total number of studied patients) examined, and in 25 cases (17.36% of total number of studied patients) only vesicular lesions.

Conclusion: This article is an update of the most common vesicular lesions of the oral cavity. We concluded that in our area of population there is an increased incidence of these types of viruses with polymorphic character at oral mucosa.

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Ref no: EUABS065418

Effect of thrombocytopenia on periodontal healing in rats: participation of endostatin and vascular endothelial growth factor

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We evaluated the effects of thrombocytopenia on periodontal healing and determined the contribution of VEGF and endostatin. Experimental periodontitis were induced in rats by cotton ligatures. Sham rats and rats in one of the periodontitis groups

were sacrificed 15 days later. Rats in the remaining two groups had the ligatures removed in order to study the spontaneous recovery from the periodontal disease 15 days later, and were treated with rabbit antiplatelet (or normal) serum. Other group without ligatures received rabbit antiplatet serum in the same period (control). After ligature removal, normal rabbit serum-treated rats showed reduced MPO activity, decreased alveolar bone loss, and increased numbers of blood vessels in the gingival connective tissue. Treatment with rabbit antiplatelet serum caused a delay in alveolar bone regeneration, decrease in the number of vessels, and modest decrease in MPO activity. Serum endostatin concentrations were slightly decreased and serum VEGF remained unchanged in the rats with periodontitis when compared with Sham animals. After ligature removal, a significant VEGF increase and endostatin decrease were observed in the normal rabbit serum-treated rats. Treatment with antiplatelet serum led to a dramatic fall in both VEGF and endostatin concentrations. This study shows that thrombocytopenia leads to a delay in periodontal regeneration, which can probably be mediated by downregulation of VEGF and endostatin production.

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Ref no: EUABS065420

The inhibitory effect of chemically modified tetracycline-8 on osteoclast formation by *Aggregatibacter actinomycetemcomitans* lipopolysaccharide

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Chemically modified tetracyclines (CMTs) are tetracycline derivatives that do not have antimicrobial properties, but retain other host modulating properties. CMTs are able to regulate cytokines involved in bone resorption such as interleukin (IL)-1, TNF-α, and IL-6. However, the regulation of osteoclastogenesis by CMTs still remains unclear. Thus, the purpose of this study was to evaluate the ability of CMT-8 to inhibit osteoclast formation when stimulated by *Aggregatibacter actinomycetemcomitans (A.a)* lipopolysaccharide (LPS) in co-cultures of RAW 264.7 cells and mouse periodontal ligament (mPDL) cells. *A.a*LPS-induced M-CSF mRNA expression was also reduced to 34%, 22% by CMT-8 and doxycycline. CMT-5 and SB20358 had little effect on LPS-induced M-CSF mRNA expression. LPS-induced IL-6 mRNA expression was also reduced to 32% by CMT-8. CMT-5 had little effect on LPS-induced IL-6 mRNA expression. LPS and M-CSF significantly induced TRAP-positive cell formation. Treatment with SB203580 and CMT-8 significantly reduced the numbers of TRAP-positive cells formed in co-culture. These results suggest that CMT-8 suppress IL-6 and M-CSF gene expression in mPDL cells and inhibit *A.a* LPS-induced TRAP-positive cell formation in co-culture. Therefore, CMT-8 has many beneficial effects in the inhibition of alveolar bone resorption.

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Ref no: EUABS065446

Decreased levels of elastase activity in gcf after non-surgical treatment in patients with chronic and agressive periodontitis

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Aim: Our aim was to compare the elastase activity before and after non- surgical therapy in patients with chronic and aggressive periodontitis.

Material and methods: Eighteen patients with chronic (mean age 48.6 ± SD 7.5) and 11 with aggressive periodontitis (mean age 27.9 ± SD 6.54) were included in the study. Clinical data included Probing Pocket Depth (PPD), Attachment level (AL) and Bleeding on probing (BOP). Samples were taken from the 5 deepest pockets and 5 shallow sites from each subject using paper strips and the GCF volume was measured in a Periotron 8000®. The patients were treated with non-surgical procedures and the same samples re-evaluated. The levels of elastase activity were measured with the specific low molecular weight substrate S 2484 and the absorbency was read in a spectrophotometer at 405 nm.

Results: The results showed a significant decrease in PPD, AL and BOP in all sites, both in chronic and aggressive periodontitis patients after treatment ($P \leq 0.05$). Elastase activity and GCF levels significantly decrease after treatment chronic ($P \leq 0.01$) and aggressive ($P \leq 0.02$) periodontitis. No significant differences between chronic and aggressive periodontitis before and after treatment in both groups of sites for the analyzed parameters were observed.

Conclusion: In conclusion, clinical improvements after non- surgical treatment are accompanied by reductions in GCF levels of neutrophil activity in both aggressive and chronic periodontitis.

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Ref no: EUABS065914

The influence of smoking on gingival crevicular fluid and serum substance P levels

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Although smoking is a major risk factor in the pathogenesis of periodontal disease, biological mechanisms behind these detrimental effects are still obscure. Accumulating evidence supports the role of Neuropeptides, particularly substance P in periodontal disease. The aim of this study was to determine the influence of smoking on the amount of substance P in gingival crevicular fluid (GCF) and serum.

Material and methods: Forty healthy subjects, 20 smokers and 20 non-smokers without any periodontal disease, participated in the study. Clinical indices, including plaque index (PI), probing pocket depth (PPD) and bleeding on probing (BOP), were assessed. Plasma and gingival crevicular fluid samples were collected and quantified for Substance-P using a Radio Immuno Assay. Results were expressed as pg/30s sample, the absolute amount of SP in the GCF samples.

Results: GCF substance P concentration was similar in both smokers and non-smokers. Although, mean level of GCF SP levels was lower in smokers (55.8560 ± 10.5952 pg/30s) compared to non-smokers (96.140 ± 27.6424 pg/30 s), the difference was not statistically significant ($P = 0.085$). Concentration of peripheral SP levels of smokers was 235.65 ± 12.3245 pg/ml and of non-smokers 226.75 ± 8.7825 pg/ml, that was statistically not significant ($P = 0.987$).

Conclusion: Our results suggest that smoking does not affect the GCF and peripheral levels of substance P in the periodontally healthy subjects.

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Ref no: EUABS065926

Identification of genetic markers in normal and diseased periodontal cell populations

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Aim: Despite our current knowledge on the pathogenesis of the periodontal disease (PD), the specific gene pathways that are

involved in the genesis and progression of this disease have not been dilucidated to date. In this work, we have carried out a comprehensive genome-wide gene expression analysis in order to identify all genes whose expression is altered in periodontal disease.

Materials and methods: Five small oral mucosa (OM) biopsies were obtained from healthy donors and five biopsies were obtained from patients with active PD. 10 μg of each RNA were hybridized to high-density oligonucleotide microarrays using the Affymetrix U133 plus system. All genes that were expressed in all samples of one of the groups (controls or PD) but not in the other group were selected.

Results: Our analysis revealed that 46 genes were upregulated in PD but not in normal OM including, among others, the genes encoding for ficolin, several immunoglobulins, the lymphocyte antigen 9 and the MHC class I polypeptide-related sequence B. In contrast, 20 genes were upregulated in normal OM but not in PD, including the oncogene RELB, the tumor suppressor TSSC4 and the receptor BRS3.

Conclusions: These results suggest that several gene pathways may be impaired in human PD, especially those related with the immune system and the synthesis of the extracellular matrix, and support the possibility of treating these patients with modulators of the immune system. Supported by FIS 08/615.

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Ref no: EUABS065927

Plasma tissue factor and salivary tissue factor activities of periodontitis patients with and withouth cardiovascular disease

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Background and aim: The association between periodontal disease and cardiovascular disease (CVD) has received considerable attention. Tissue factor (TF) has long been known as a key initiator of the coagulation cascade. Recently it has been shown that circulating pool of TF in blood is associated with increased blood thrombogenicity in patients with CVD. Body fluids including saliva have been known to have TF activity. The aim of this study was to investigate serum TF levels and salivary TF activity in periodontitis patients with and without CVD.

Material and method: Twenty-six patients who were staying in the hospital with diagnosis of CVD and 26 systemically healthy patients in dental clinic were examined and the Community Periodontal Index Treatment Needs (CPITN) scores were recorded. Plasma TF levels and salivary TF activity levels were measured with ELISA kit and Quick's one stage method, respectively.

Results: Plasma TF levels were significantly increased in patients with CVD compared with control group. There was no difference in salivary TF activities between two groups but there was a strong and negative correlation between salivary TF activities and CPITN indexes in both groups.

Conclusion: In order to determine the possible role of salivary TF activity in CVD and periodontitis and to fully understand the negative correlation between salivary TF activities and CPITN, TF activity of tissue fluids such as gingival crevicular fluid that may also affect saliva can be evaluated.

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Ref no: EUABS065896

Expression of inducible nitric oxide synthase in patients with aggressive periodontitis and chronic periodontitis

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Background: Nitric oxide (NO), a free radical is generated by oxidative deamination of L-arginine by nitric oxide synthase (NOS). Various important roles for NO in immune regulation and inflammation have been suggested. Gingival tissues from periodontitis patients demonstrate greater levels of inducible NOS (iNOS) expression than healthy gingiva. The aim of the present study was to evaluate iNOS expression and inflammation intensity in chronic (CP) and aggressive periodontitis (AgP) by immunohistochemistry since they have different pathogenic models.

Material and methods: The study included 17 patients diagnosed with AgP, 19 patients diagnosed with CP and 20 control individuals. Gingival biopsies obtained from patients during the flap surgeries and from healthy individuals during gingivectomy operations. Immunohistochemical staining was performed for evaluating NOS expression.

Results: A significant increase in inflammation intensity and rate of iNOS (+) inflammatory cells were found in the samples of the CP and AgP compared with those of the controls ($P < 0.05$). While iNOS expression intensity was found statistically increased in AgP comparing controls ($P < 0.05$), there was no significant difference between CP and controls. When comparing samples of the CP and AgP, there were no differences for all parameters.

Conclusion: Although AgP and CP have different pathogenic mechanisms, our results indicate that iNOS increases in both diseases and shows similarities once initiated.

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Ref no: EUABS065853

Aggressive periodontitis is associated with an increased colonization by *Prevotella nigrescens*

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Aim: The aim of the study was to estimate differences in the prevalence of *Prevotella intermedia* and *Prevotella nigrescens* in the subgingival biofilm of patients with aggressive periodontitis as compared to healthy controls and to search for significant association with clinical status.

Methods: 16 patients with aggressive periodontitis and 16 healthy subjects were enrolled in this study. Aproximal plaque index (API), oral hygiene index (OHI), gingival index (Lobene), bleeding on probing (BOP), probing depth (PD) and clinical attachment level (CAL) were recorded. Samples of the subgingival biofilm were taken with paper points from 4 teeth of each individual and plated immediately on supplemented Columbia agar and incubated anaerobically. Black pigmented colonies were biochemically identified with the Rapid ID 32 A system and further differentiated using MALDI-TOF-MS. For statistical analysis Chi-Square and Mann–Whitney U Test were used.

Results: *P. nigrescens* was isolated from 10 patients and 3 healthy controls, while *P. intermedia* was isolated only from 2 patients. *P. nigrescens* was significantly more often found in subgingival plaque of patients ($P = 0.029$) and was significant associated with high values of OHI, Lobene, API, BOP, CAL ($P = 0.011$–0.025). Significant differences for *P. intermedia* were not found.

Conclusions: Aggressive periodontitis seems to be associated with an increased colonisation with P. nigrescens. Whether or not this is a major pathogen needs to be determined.

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Ref no: EUABS065820

Study of the oral bacterial flora in relation to the transmission of periodontal disease between spouses

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Objective: To quantify the bacterial load of periodontopathogens from subgingival and salival samples of periodontal patients and to compare with their pairs.
Material and methods: In 16 subjects with chronic periodontitis without previous periodontal treatment, with their respective pairs, the plaque index, the probing pocket depth (PPD), the bleeding on probing and the clinical attachment level were examined. Salival and subgingival samples were taken and inoculated in TSBV and Dentaid-1 media, for the detection of *A. actinomycetemcomitans (Aa),* and selective and non-selective Brucella Agar for anaerobic gramnegative bacilli.
Results: Periodontitis was detected in both spouses in 7 pairs (44%). *Aa* was not detected in any sample. In the set of subgingivales samples, it was observed a linear relation between PPD and count of total anaerobic gramnegative bacilli (regression index = 0.92). In the samples of saliva and in the subgingival samples of sulci with PS≤ 3 mm of patients whose pairs were also affected, it was detected a count of total anaerobic and pigmented anaerobic bacteria greater than in the patients with healthy pairs, but there were not significant differences in the subgingival samples taken from deep pockets.
Conclusions: The rate of anaerobic gramnegative bacilli is a microbiological indicator of subgingival affectation. When both members of the pair are affected, there is a greater load of anaerobic bacteria in the samples taken from healthy locations.

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Ref no: EUABS065629

Levels of serum and salivary sialic acid in patients with periodontitis with and without cardiovascular disease

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Background: The interaction between periodontitis and cardiovascular disease (CVD) has been under investigation, since periodontitis is a chronic inflammatory disease. Serum total sialic acid (TSA) has recently been shown to be a cardiovascular risk factor, but there is a little information about the role of serum TSA and salivary TSA in periodontitis. Thus we aimed to investigate the changes of serum TSA and salivary TSA levels in patients with periodontitis with and without CVD.
Methods: 26 patients, who were staying in the hospital with a diagnosis of CVD and 26 systemically healthy patients with periodontitis participated in our study. In both groups the patients were periodontally examined and the Community Periodontal Index Treatment Needs (CPITN) scores were recorded and samples were collected. TSA levels in blood and saliva was determined by Warren method.
Results: Both serum and salivary TSA levels were significantly increased in the study group ($P < 0.001$). There were also a positive correlation between tooth loss and serum and salivary TSA levels ($P < 0.05$).
Conclusions: TSA levels were significantly high in blood and saliva of CVD patients compared with control group. To our results, TSA in saliva may be a useful marker as serum TSA in patients with CVD. Additional studies are needed to determine whether the positive correlation between tooth loss and TSA levels can be an indicator to evaluate disease progression in time.

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Ref no: EUABS065680

Influence of lipopolysaccharide and interleukin-6 on receptor activator of NFκB ligand expression and release in human periodontal ligament cells

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Background: Recent research in periodontal disease pathology focuses on the role of Receptor Activator of NFκB Ligand (RANKL) and Osteoprotegerin (OPG) in periodontal bone destruction processes. The aim of the present study was to further investigate the proposed ability of *Porphyromonas gingivalis* LPS to induce RANKL expression and to investigate a potential influence of Interleukin-6 on RANKL expression and release. Furthermore RANKL and OPG expression and release was quantified and compared to assess the possible influence on osteoclastogenesis by hPDL cells.
Material and methods: Cultivated primary hPDL cells were stimulated for 48 hour. OPG and sRANKL release was assessed by using ELISA technique. OPG and RANKL expression was quantitative measured by using real-time PCR technique.
Results: Whereas *P. gingivalis* LPS induced RANKL expression and release significantly, IL-6 did not show such an effect. Furthermore the results showed significantly higher expression (10–100 fold) and release (4-fold) of OPG compared to RANKL by hPDL cells.
Conclusion: These data confirm that PDL cells are capable to induce RANKL expression and release after stimulation with *P. gingivalis* LPS and thereby may be involved in osteoclastogenesis. Overall RANKL expression and release was very little compared to OPG, which questioners a significant influence on osteoclastogenesis.

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Ref no: EUABS065743

Polymorphism at position-174 of IL-6 gene is associated with chronic periodontitis in a Greek population

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Background: Periodontitis is a multifactorial disease, which is suggested to have a genetic basis. Interleukin-6 (IL-6) is a multifunctional cytokine, mediating inflammatory tissue destruction. A G to C substitution at position -174 in the promoter of IL-6 gene has been associated with chronic periodontitis. The aim of this study was to investigate the association between the IL-6-174 polymorphism and the susceptibility to chronic periodontitis in Greeks.
Material and methods: Genomic DNA was obtained from gingival crevicular fluid samples of 45 patients with chronic periodontitis (mean age 51.7) and 30 healthy controls (mean age 49.7). The samples were analyzed using PCR-RFLP. The data were assessed by chi-square test, Fisher's exact test, analysis of variance (ANOVA), by calculating odds ratio and 95% confidence intervals.
Results: Individuals with a GG genotype had 6.19 times higher risk to develop periodontitis than individuals with CC/GC genotypes ($P = 0.01$, OR = 6.19). A significant association was found between the IL-6-174 polymorphism and the severity of periodontitis. There was a significant difference in the observed attachment loss and probing depth in the GG ($P = 0.003$ and

$P = 0.007$) and GC genotypes ($P = 0.008$ and $P = 0.012$) compared with that observed in the CC genotype.
Conclusion: IL-6-174 polymorphism is associated with susceptibility and severity to chronic periodontitis in the population studied.

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Ref no: EUABS065746

Lack of association between TLR4 ASP299gly and THR399ILE gene polymorphisms with chronic periodontitis in a Greek population

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Background: Periodontitis is suggested to have a genetic basis. Several studies examined the role of polymorphisms in the Toll-like receptor 4 (TLR4) gene in periodontitis with conflicting results. The aim of this study was to investigate the association between the TLR4 Asp299Gly and Thr399Ile gene polymorphisms and the susceptibility to chronic periodontitis in Greeks.
Material and methods: Genomic DNA was obtained from gingival crevicular fluid samples of 45 patients with chronic periodontitis (mean age 51.7 ± 7.68 years) and 30 healthy controls (mean age 49.7 ± 11.85 years). The samples were analyzed by polymerase chain reaction amplification followed by restriction enzyme digestion and gel electrophoresis. The data were analyzed by the chi-square test, analysis of variance (ANOVA) and the Wilcoxon rank sum test. A P-value of < 0.05 was considered statistically significant.
Results: There was no association of chronic periodontitis with TLR4 Asp299Gly ($P = 0.107$) or with TLR4 Thr399Ile ($P = 0.140$) gene polymorphisms. Furthermore, there was no statistically significant association between these polymorphisms with any of the clinical parameters examined, concerning the severity of periodontal disease ($P > 0.05$ for all the comparisons).
Conclusion: Within the limits of this study the results show that TLR4 Asp299Gly and Thr399Ile gene polymorphisms are not significantly associated with susceptibility to, or severity of chronic periodontitis in the population studied.

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Ref no: EUABS065752

Comparative immunohistochemical study of the distribution of fibronectin in healthy and diseased root surfaces

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Background: Periodontitis is an inflammatory process, which result in subsequent damage/loss of tooth supporting tissues. The aim of this study was to investigate the detection and distribution of fibronectin in periodontally diseased cementum in respect to its exposure to the periodontal inflammation as well as to compare this distribution with that of the normal cementum of the root.
Methods: Five healthy and ten periodontally affected teeth were collected. Following fixation and demineralization, specimens were embedded in paraffin, sectioned and exposed to antibodies against fibronectin. Stained sections were assessed using light microscopy.
Results: The distribution of fibronectin in normal cementum was found to be uniform on the whole cementum mass, in the form of fibrils. In recession cementum fibronectin appears to lose its fibrilar morphology, or appears to be completely amorphous on the whole cementum mass. In pocket cementum fibronectin shows variation and unequal distribution and structure of fibrils.
Conclusions: The diversity of morphology and distribution of fibronectin may be due to structural changes in matrix components associated with periodontal disease. This may influence the ability for regeneration and new connective tissue attachment onto previously periodontally affected root surfaces.

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Ref no: EUABS065758

The impact of dietary induced hyperparathyroidism on healthy and diseased periodontia: an experimental study in rats

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Inadequate nutrition is suggested to be a risk factor for periodontal disease. This study aimed to investigate the histopathological alterations in healthy and diseased periodontia due to dietary induced hyperparathyroidism (dHPT). dHPT was created in 12 rats by dietary induced calcium/phosphorus imbalance. Endotoxin induced periodontitis was created on the right mandibular molar teeth (mt) of these rats and mt of extra 12 rats fed with standart diet (SD). Thus, 4 study groups were constituted as: dHPT + mt without periodontitis (group 1), dHPT + mt with periodontitis (group 2), SD + mt with periodontitis (group 3) and SD + mt without periodontitis (group 4). Histological sections were obtained from the 2nd mt and thus, 12 samples per group were utilized in the assessments. Group 1 demonstrated evident inflammatory alterations in junctional epithelium, subjacent connective tissue and periodontal ligament and some osteoclastic activity without any pocket formation. Inflammatory and degenerative alterations of periodontal ligament and root surface were more abundant in group 2 compared to group 3. Group 2 revealed the highest amounts of gingival inflammatory cell and vessel counts (group 2 > group 3 > group 1 > group 4), attachment loss and bone resorption (group 2 > group 3 > groups 1 and 4) and osteoclastic cell count (group 2 > group 3 > group 1 > group 4) ($P < 0.05$). The results suggest that dHPT may increase susceptibility to periodontal disease and may affect the disease severity.

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An *in vitro* measurement of vertical root trunk length of maxillary and mandibular first and second molar teeth in Iranian population

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Background: In Glickman's classification of FI[1] the amount and pattern of bone loss has been taken into account only in the furcation area. Since some research indicates inclusion of periodontal attachment level in FI classification, determining the RTL[2] deserves attention. So this study measured the vertical RTL of maxillary and mandibular 1st and 2nd molars to estimate the incidence of short, medium & long (Type A,B,C) RTL.
Materials and methods: 134 extracted maxillary molars (71 first & 62 second) and 189 mandibular molars (98 1st & 91 2nd) were selected. Reference points including CEJ,top of fornix and apex were marked to measure the RT & total Root Length.RTs were categorized into 3 types: A,RT/RL = 1/3; B,RT/RL = 1/2; C,RT/RL = 2/3.

Results: The means of RTL of buccal, mesial and distal sides of maxillary 1st molars were 4.6, 4.3, 3.8 and those of maxillary 2nd molars were 4.8, 4.3 & 3.6 mm respectively.The RTL of distal side was shorter than those of buccal and mesial sides.The means of RTL on buccal and lingual sides of mandibular 1st molars were 3.5, 4.2 and those of d molars were 3.8 & 3.9 mm respectively.
Conclusion: The major proportion of RTs in maxillary and mandibular molars was included in type B. More prevalence of FI on distal side of maxillary and buccal side of mandibular 1st molars is related to shorter RT.Further examination is suggested regarding the relationship between the type of RT and the amount of periodontal attachment loss. [1]Furcation Invasion; [2]Root Trunk (Lenght)

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Ref no: EUABS064987

Internal bacterial contamination of dental implants and suprastructures

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Aim: Compare microbiota between peri-implant sulci and internal implant/suprastructure components.
Material and methods: Microbiological data was collected from 8 patients (63 implants supporting full-arch screw-retained bridges, mean functional years: 9.5). 40 species were identified by checkerboard DNA-DNA hybridization at 3 locations per implant: the deepest peri-implant sulcus, the abutment screw in the internal part of the implant and the cotton pellet enclosed in the suprastructure. Associations in bacterial counts were investigated. The sulcus was compared to the internal parts for the presence and counts of each bacterium.
Results: 88.4 % of the abutment screws were contaminated. A significant correlation between the sulcus and the screw was found for 27/40 species. For 37/40 bacteria positive counts were significantly lower at the screw when compared to the sulcus. 38/40 species showed significantly lower levels at the former. 94.7% of the cotton pellets were contaminated. A significant correlation between the sulcus and the pellet was found for 8/40 species. For only 8/40 bacteria positive counts were significantly lower at the pellet when compared to the sulcus. Only 9/40 bacteria showed significantly lower levels at the former.
Conclusions: The internal parts of implants and in particular suprastructures are frequently contaminated. High numbers of various species in the latter suggest leakage of screw-retained restorations.

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Evaluation of alkaline phospatase and osteocalcin values in osteoporotic patients with choronic periodontitis

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The aim of this study is to evaluate the relationship between the pre- and post treatment clinical index values and Bone Alkaline Phosphatase (ALP) and Osteocalcin (OC) levels in gingival crevicular fluid (GCF) samples obtained from individuals periodontally healthy, with gingivitis, chronic periodontitis and osteoporosis. 60 females' subjects were divided into four groups: Group I (n: 15, healthy), Group II (n: 15, gingivitis), Group III (n: 15, periodontitis) and Group IV (n: 15, periodontitis with osteoporosis). GCF samples were analyzed using ELISA and auto-analizator methods in order to determine the OC and ALP levels. It was observed that GCF amount increased in individuals with gingivitis and periodontitis when compared to those who are healthy and that this increase had a relation with the seriousness of the disease. Though there was a positive correlation between initial periodontal indexes values and GCF - OC concentration and total value ($P < 0.05$), no significant correlation between clinical attachment level (CAL) and GCF-OC correlation was found ($P > 0.05$). After the treatment, a positive correlation was found between index levels and GCF-OC concentration and total value ($P < 0.05$). As a result, we suggest that osteoporosis is a risk factor over periodontal diseases as the group with periodontitis and osteoporosis showed a difference from the other groups both from the point of clinical index and respond given after non-surgical periodontal treatments.

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Evaluation of IG A-G-M levels in romatoid arthritis patients with chronic periodontitis

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The aim of this study was to determine the clinical parameters saliva and Ig A, G, M in gingival crevicular fluid (GCF) in patients who have chronic periodontitis (CP) and CP with romatoid arthritis (RA). The relation between periodontal disease and these parameters and the effects of RA on the severity of periodontal diseases were also investigated. Thirty patients were divided into three groups: Group I: CP, Group II: CP with RA, Group III: Healthy subjects. GCF and Ig A, G, M values in saliva were determined by immunodiffusion method. Probing depth and clinical attachment levels of Group II were statistically different from Group I and Group III ($P < 0.05$). When values of GCF and Ig A, G, M in saliva were compared within each group, it was seen that the two groups were statistically different from the control group (group III). Ig A values were statistically different from each other whereas no difference was observed between the values of Ig G and M. In the light of findings, we can say that these exists an increasing of immunity in both groups when compared with the control group. But, we can not say that this is due to increased periodontal destruction or RA. Because of this, periodontally healthy RA patients must be included in studies. In periodontal diseases, tissue destruction shows differences in different diseases. For this reason, there is a need for comprehensive studies on different periodontal diseased groups.

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Aetiological agents of the periodontal infections and antibiotics susceptibility in the north of Portugal

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The microbiological aetiologie and the antibiotic susceptibility are the rational basis of the periodontal diseases treatment. Specific antibiotics are able of decrease, steady or remove bacteria as *Aggregatibacter actinomycetemcomitans* (*Aa*), *Porphyromonas gingivalis* (*Pg*), *Prevotella intermedia* (*Pi*), *Tannerella forsythia* (*Tf*), and *Campylobacter sputorum* (*Cs*).
Objectives: To evaluate the periodontophatic bacteria in subjects with several periodontitis type and determinate the MIC.

Material and methods: Subgingival plaque of 15 subjects: conventional clinical measurements were taken. Selective anaerobic cultures and test identification were made. The antibiotics were: Amoxicillin, Amoxicillin + Clavulanic acid, Metronidazole, Tetraciclin and Ciprofloxacin with the E-test method.
Results: We found ten generalized chronic periodontitis (GCP), four generalized aggressive periodontitis (GAP) and one localized aggressive periodontitis. Significant presences of *Aa*. in 5 of 15 cases, 4 corresponded to GAP type. Relevant presence of Cs in 6 GCP one of them associate to *Pi*, other one to *Pg*. *Spirochetes* in 6 cases was observed associate to GCP and GAP. In the antimicrobiological susceptibility, we must to emphasize the multiresistence of one *Pi*, *Cs*, and *Capnocyophaga* spp.
Conclusions: This study was similar with others for putative species. It seems to be frequent in this geographical region, the presence of Cs, characterized by multi resistance to the antibiotics.

63
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Vesicle-associated proteases of *Porphyromonas gingivalis*

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Aims: Vesicles of gram-negative bacteria may contribute to the transportation of their virulence factors to the host cells because of their small size and binding facility. We undertook to investigate the interaction of proteases and vesicles.
Materials and methods: *P. gingivalis* ATCC 33277 was used throughout this work. The envelope and crude extract of the cells were prepared by ultrasonication and centrifugation at 100,000 g. Vesicles were precipitated from the culture supernatants by ammonium sulfate addition (40% saturation) and collected by centrifugation. Proteolytic activities of arginine gingipain (RGP) and lysine gingipain (KGP) were determined using paranitroanilide-derivatives of amino acids.
Results: Location of RGP in the cellular fractions in crude extract, envelope, vesicles, and culture supernatants were 48%, 16%, 17%, and 31%, respectively, while the corresponding values of KGP were 47%, 10%, 7%, and 36%, respectively, indicating that distribution rates of both proteases in the cellular components are similar. The native molecular sizes of RGP and KGP solubilized from the vesicles by detergent were estimated as over 1,500 kDa. Partial reduction of the molecular sizes was confirmed only by urea treatment. Both proteases were attempted to purify from the detergent-solubilized materials of the vesicles to characterize the enzymatic properties.
Discussion: Cellular location of proteases of *P. gingivalis* and partial binding properties to vesicles were assessed.

64
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Visualization of periodontopathic bacteria within crevicular epithelial cells with fluorescence *in situ* hybridization

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Periodontal pathogens can invade the host tissue. Morphologic studies have revealed bacteria within the pocket epithelium, gingival connective tissues, alveolar bone, and oral epithelium. The objective of this study was to visualize and evaluated presence of *Porphyromonas gingivalis* and *Tannerella forsythia* in crevicular epithelial cells of periodontally healthy subjects and chronic periodontitis patients. 666 crevicular epithelial cells from 27 chronic periodontitis patients and 9 healthy volunteers were sampled. Specific probes for *P. gingivalis* and *T. forsythia* and universal probe for detection of all eubacteria targeting 16S rRNA for fluorescence *in situ* hybridization was was used in conjunction with confocal laser scanning microscopy. 98.99% of sulcular epithelial cells from healthy volunteers contained bacteria and 84.40% of pocket epithelial cells from periodontitis patients had bacteria. *P. gingivalis* and *T. forsythia* were discovered more often in crevicular epithelial cells from periodontitis patients. *P. gingivalis* and *T. forsythia* can invade crevicular epithelial cells and intracellular bacteria may act as a source of bacteria for persistent infection.

65
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Etiological agents of the periodontal infections and antibiotics susceptibility in the north of Portugal

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The microbial etiological and antibiotics susceptibility are the rational basis of periodontal diseases treatment.Specific antibiotics are able to decrease, steady or remove bacteria as *Aggregatibacter actinomycetemcomitans* (*Aa*) *Porphyromonas gingivalis* (*Pg*) *Prevotella intermedia* (*Pi*) e *Tannerella forsythia* (*Tf*) and *Campylobacter sputorum* (*Cs*).
Objectives: To evaluate the periodontophatic bacteria in subjects with several periodontitis type and determine the minimal inhibitory concentration.
Material and methods: Subgingival plaque of 15 subjects.Conventional clinical measurements was taken.Selective anaerobic cultures and test identification was made.The antibiotics susceptibility with the E-test method, were: Amoxicillin, Amoxicillin + Clavulanic acid, Metronidazole, Tetracycline and Ciprofloxacin.
Results: We found ten generalized chronic (GCP) four generalized aggressive (GAP) and one localized aggressive periodontitis. Significant presence of *Aa* in 5 of 15 cases, 4 corresponded to GAP type. Relevant presence of Cs in 6 GCP one of them associate with *Pi*, other one with *Pg,* Spirochetes in 6 cases was observed associated with GCP and GAP. In the antimicrobial susceptibility, we must emphasize the multiresistant of one *Pi*, *Cs*, and *Capnocyophaga* spp.
Conclusions: Our results agree with others in terms of the putative species associated with periodontal pathogens. The presence of *Cs* seems to be frequent in this geographical region characterized by resistance or multi resistance to the antibiotics.

66
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Effect of *Porphyromonas gingivalis* lipopolysaccharide on the expression level of TLR2 and TLR4 in human gingival fibroblasts

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Porphyromonas gingivalis is gram negative bacteria, which is most often associated with adult periodontitis. *P. gingivalis* lipopolysaccharides (LPS) activate toll-like receptors (TLR) and initiate immune response in various cells including gingival fibroblasts (GFB). In the present study we investigated how LPS of *P. gingivalis* influence the expression of TLR2 and TLR4 in human GFB, and compared it with that of *E coli* LPS. GFB were stimu-

lated with LPS in concentrations range 0–1000 ng/ml for 24 hours, and changes in the expression of TLR2 and TLR4 on cells surface were assessed by flow cytometry. The expression of TLR proteins was affected by both *P. gingivalis* LPS and *E. coli* LPS; however their effects was strikingly different. *P. gingivalis* LPS in concentration up to 30 ng/ml up-regulates the expression level of TLR2, whereas at higher concentrations this effect was either diminished or absent. TLR4 expression was down-regulated by all concentrations of *P. gingivalis* LPS. In contrast to *P. gingivalis* LPS, *E. coli* LPS did not change the expression of TLR2. The expression of TLR4 was up-regulated by *E. coli* LPS in concentrations up to 100 ng/ml and down-regulated at higher concentrations. Summarizing, we found that the level of TLR2 and TLR4 expression on the surface of human gingival fibroblasts is modulated by periodontal pathogens, which may play an important role in maintaining of gingival tissue homeostasis as well as in progress of periodontal diseases.

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Ref no: EUABS064884

The gingival and serum leptin and leptin receptor levels in periodontitis patients

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Leptin thought to play a key role in control of satiety, food intake, and is part of the cytokine cascade, which orchestrates the immunoregulation. The leptin found decreased in inflamed gingiva. This study aims to investigate leptin (OB) and soluble OB receptor (s-OB-R) concentrations in serum and gingiva in individuals with different periodontal diseases; whether correlations exist between clinical parameters and OB and s-OB-R; and whether gingiva is the origin of OB and s-OB-R. Twenty healthy, 20 gingivitis, 16 aggressive periodontitis and 21 chronic periodontitis subjects included to this study. After the clinical periodontal parameter recordings, gingival tissue obtained from the most inflamed gingiva of the periodontally diseased and healthy gingiva of the periodontally healthy individuals. The fasting venous blood obtained. Serum OB and s-OB-R determined using ELISA, in gingiva using immunohistochemical methods. Serum OB concentration present any significant differences among the groups ($P > 0.0125$); only significant difference in serum s-OB-R found between the healthy and gingivitis groups ($P < 0.0125$). Gingival OB and s-OB-R evaluations revealed any differences among the groups. However, gingival epithelium and endothelium showed positive immunoreactivity. The results revealed that OB and s-OB-R playing roles in periodontal pathogenesis. Leptin may be acting as an anti-inflammatory cytokine in periodontal disease.

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Nitric oxide: a possible role in the induction and progression of generalized chronic periodontitis

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Aim: Nitric oxide (NO) is a molecule with multiple effects on different tissues. In recent years, there has been an increasing interest in the role of NO in the pathogenesis of periodontal diseases. This study aimed to determine salivary NO levels in generalized chronic periodontitis (GCP) subjects.
Materials and methods: The NO levels were measured in the saliva of 104 subjects, age 18–65. According to specific criteria, three groups with different degrees of severity of GCP were established: 30 early (group 1), 30 moderate (group 2), and 14 severe (group 3). Thirty individuals (aged 25–29 years) with clinically healthy periodontium were served as control. Unstimulated whole saliva samples by means of spitting method were collected, centrifuged at 3000 Xg for 15 min at 4ordm;C and were then stored at -70°C until analysed. The NO level was determined with Griess reagent by a colorimetric method at 570 nm. The data were statistically analysed using SPSS by one-way analysis of variance (ANOVA), Bonferroni *post hoc* analysis, and Person's correlation.
Results: A significant increase in the NO level existed in the samples obtained from the three groups of patients compared to the control subjects ($P < 0.05$).
Conclusion: Increased NO levels are with closely associated with the severity and patients status of periodontal disease that has not been previously reported. The detection of salivary NO level may provide additional advantages in elucidating the pathogenesis of periodontal disease.

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Effects of *Porphyromonas gingivalis* lipopolysaccharide on human umbilical vein endothelial cells with regard to expression of cell adhesion molecules

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Several studies suggest an association between periodontal and cardiovascular diseases. One of the bases for such link seems to be an involvement of various periodontal pathogens, particularly *Porphyromonas gingivalis (P.g.)*, in the inflammatory response during atherosclerosis. In the present study, we investigated the effect of *P.g.* lipopolysaccharide (LPS) on the expression of cell adhesion molecules (CAMs) in endothelial cells, which is a hallmark for early inflammatory stages of atherogenesis. The effect of *P.g.* LPS was compared with that of *E. coli (E.c.)* LPS and, in addition, the contemporaneous stimulating effect of these two pathogens was studied. Human umbilical vein endothelial cells (HUVECs) were stimulated with *P.g.* LPS (0.1, 1, 10 μg/ml) and/or *E.c.* LPS (0.01, 0.1, 1 μg/ml) for 24 hours and the change in the mRNA expression levels of ICAM-1, VCAM-1, and E-Selectin was measured using real-time PCR. We found that both *P.g.* LPS and *E.c.* LPS induced significant dose dependent increase of mRNA expression levels of all CAMs. The level of E-selectin mRNA was increased up to 300 times compared to control, whereas the mRNA level of ICAM-1 and VCAM-1 were increased maximally by factors of 10 and 20, respectively. Surprisingly, contemporaneous stimulation of HUVECs with two pathogens substantially attenuated the stimulatory effect. Our data show that *P.g.* can enhance progression of early atherosclerotic lesions by up-regulation of CAMs expression by endothelial cells.

70
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Vascular endothelial growth factor levels in sturge-weber syndrome

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Aim: The Sturge–Weber syndrome (SWS) is a rare neurocutaneous disorder with angiomas involving the leptomeninges and skin of the face. The oral findings of SWS include the hemangiomas and enlargement of the maxillary and/or mandibular gingiva which are ipsilaterally to the affected sites. The aims of this study are to analyze the vascular endothelial growth factor (VEGF) levels of gingiva ipsilateral to the affected sites of SWS patients

and to compare these findings with the non-affected sites and with healthy controls.
Material and methods: The gingival biopsies were obtained from the affected sites of six SWS patients. In addition, gingival biopsies were also obtained from the contralateral non-affected sites of SWS patients and healthy controls. A total of 11 samples for each group were analyzed by immunohistochemistry.
Results: It was observed that the gingival expression of VEGF-A, VEGF-B and VEGF-C levels were significantly higher in the affected sites of SWS patients when compared to the non-affected sites and healthy controls ($P < 0.001$ for each). In addition, there were no significant VEGF expression differences between the non-affected sites of SWS patients and healthy controls ($P > 0.05$).
Conclusions: These findings may help to show the pathogenesis and to develop new treatment modalities of the gingival involvement in SWS in which the surgical management is challenging due to the extreme risk of bleeding.

71
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Vesicle-associated proteases of *Porphyromonas gingivalis*

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Aims: Vesicles (blebs) of gram-negative bacteria may contribute to the transportation of their virulence factors to the host cells because of their small size and binding facility. We undertook to investigate the interaction of proteases and vesicles.
Materials and methods: *P. gingivalis* ATCC 33277 was used throughout this work. The envelope and crude extract of the cells were prepared by ultrasonication and centrifugation at 100,000 g. Vesicles were precipitated from the culture supernatants by ammonium sulfate addition (40% saturation) and collected by centrifugation. Proteolytic activities of arginine gingipain (RGP) and lysine gingipain (KGP) were determined using paranitroanilide-derivatives of amino acids.
Results: Location of RGP in the cellular fractions in crude extract, envelope, vesicles, and culture supernatants were 48%, 16%, 17%, and 31%, respectively, while the corresponding values of KGP were 47%, 10%, 7%, and 36%, respectively, indicating that distribution rates of both proteases in the cellular components are similar. The native molecular sizes of RGP and KGP solubilized from the vesicles by detergent were estimated as over 1500 kDa. Partial reduction of the molecular sizes was confirmed only by urea treatment. Both proteases were attempted to purify from the detergent-solubilized materials of the vesicles to characterize the enzymic properties.
Discussion: Cellular location of proteases of *P. gingivalis* and partial binding properties to vesicles were assessed.

72
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Osteoclasts activation by lipopolysaccharides during periodontal diseases

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Aims: Homeostasis of skeletal system relies on the dynamic balance between bone apposition and resorption. During periodontal infections, lipopolysaccharides (LPS) of gram negative bacteria modify this balance towards alveolar bone destruction. Recent discovery of interactions between RANK (Receptor Activator of Nuclear factor-kB) and its ligand RANK-L has led to a better understanding of osteoclasts activation. This poster reviews the different pathways of osteoclasts activation accounting for periodontal bone destruction.
Materials and methods: This review is based on the analysis of publications extracted from Pubmed and selected on the basis of their comprehensive relevance to the field. The question has been analyzed from a cellular biology point of view.
Results: This analysis has revealed the involvement of a direct and an undirect pathway of osteoclasts activation by LPS. In the indirect pathway, LPS induce the secretion of proinflammatory cytokines, which in turn activate a cascade of reactions that leads to osteoclasts activation. In the direct pathway, LPS stimulate osteoblasts, osteoclast progenitors and osteoclasts in an inflammatory cytokine-independent manner.
Discussion: The RANK-L/RANK/OPG (osteoprotegerin) interactions, proinflammatory cytokines, osteoblasts and T lymphocytes are key factors of osteoclasts activation by LPS. Understanding the mechanisms of alveolar bone destruction needs to take in account all the interactions between these different actors.

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Vesicle-associated proteases of *Porphyromonas ginigivalis*

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Aims: Vesicles (blebs) of gram-negative bacteria may contribute to the transportation of their virulence factors to the host cells because of their small size and binding facility. We undertook to investigate the interaction of proteases and vesicles.
Materials and methods: *P. gingivalis* ATCC 33277 was used throughout this work. The envelope and crude extract of the cells were prepared by ultrasonication and centrifugation at 100,000g. Vesicles were precipitated from the culture supernatants by ammonium sulfate addition (40% saturation) and collected by centrifugation. Proteolytic activities of arginine gingipain (RGP) and lysine gingipain (KGP) were determined using paranitroanilide-derivatives of amino acids.
Results: Location of RGP in the cellular fractions in crude extract, envelope, vesicles, and culture supernatants were 48%, 16%, 17%, and 31%, respectively, while the corresponding values of KGP were 47%, 10%, 7%, and 36%, respectively, indicating that distribution rates of both proteases in the cellular components are similar. The native molecular sizes of RGP and KGP solubilized from the vesicles by detergent were estimated as over 1500 kDa. Partial reduction of the molecular sizes was confirmed only by urea treatment. Both proteases were attempted to purify from the detergent-solubilized materials of the vesicles to characterize the enzymic properties.
Discussion: Cellular location of proteases of *P. gingivalis* and partial binding properties to vesicles were assessed.

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Linkage disequilibrium and haplotype structure of IL-1 cluster in an Italian aggressive periodontitis cohort

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Background: Polymorphisms of the interleukin-1 (IL-1) gene cluster family have been proposed as potential genetic markers for periodontal diseases, including Aggressive Periodontitis (AgP), leading to conflicting results.

Aim and methods: The present study investigate the association between IL-1 genes and AgP by means of 70 markers spanning the 1.1 Mb region where the IL-1 cluster maps and exploring both the Linkage Disequilibrium (LD) and the haplotype structure in a case-control study including 216 subjects (95 patients and 121 controls).
Results: An LD map of the region 2q13–14 under the Malécot model for multiple markers was constructed. The LD map obtained by Italian dataset shows a close correspondence with the LD map obtained by HapMap data. The test for the presence of a causal polymorphism within the candidate region, gives no significant results ($\chi^2 = 1.59$; $P = 0.207$). Significance was assessed by permuting case and control statuses 400 times. Sliding windows of size three and six were used to reconstruct haplotypes. All 3–6 SNPs haplotypes which contained variants mapping within IL1F6 and IL1F8 genes, demonstrated a significant or borderline association (P-values range 0.022–0.053). However, no significant association was found in the region where IL1A, IL1B and IL1RN map.
Conclusions: In conclusion, our findings failed to support the existence of a causative variant for generalized AgP within the candidate region in a representative Italian Caucasian population.

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Intracellular destiny of *Fusobacterium nucleatum* in human gingival epithelial cells

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Although the prevalence and numbers of *Fusobacterium nucleatum* has a significant association with increasing pocket depth, the role of *F. nucleatum* in oral health and disease is controversial. To clarify the role of *F. nucleatum* in the pathogenesis of periodontitis, intracellular destiny of *F. nucleatum*, along with its cytopathic effect on gingival epithelial cells, was studied. The abilities of *F. nucleatum* and seven other oral bacterial species to invade immortalized human oral epithelial (HOK-16B) cells were examined by confocal microscopy and flow cytometry. Upon infection for 4 h, *F. nucleatum* had the highest invasive capacity among the eight oral bacterial species tested, which was comparable to *Porphyromonas gingivalis*, one of periodontal pathogens. However, *F. nucleatum*-infected cells quickly lost the fluorescence of intracellular bacteria upon further culture after killing of extracellular bacteria. Confocal microscopic examination revealed colocalization of *F. nucleatum* with endosomes and lysosomes. Colony counting assay verified the lack of its ability to survive within the epithelial cells. Furthermore, *F. nucleatum* did not have any cytopathic effects on the epithelial cells. Our results suggest that *F. nucleatum* does not have a direct cytopathic effect on oral epithelial cells but may contribute to the development of periodontitis by facilitating colonization of other periodontal pathogens.

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GCF and serum myeloperoxidase and matrix metalloproteinase-13 levels in renal transplant patients under different immunosuppressive therapy

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Aim: The present study aimed to investigate gingival crevicular fluid (GCF) and serum myeloperoxidase (MPO) and matrix metalloproteinase (MMP)-13 levels from renal transplant patients receiving cyclosporine-A (CsA) and having gingival overgrowth (GO), from patients receiving CsA therapy and having no GO and patients receiving tacrolimus therapy.
Methods: GCF samples were collected from sites with GO (GO+) and without GO (GO-) in CsA patients having GO; GO- sites in CsA patients having no GO; sites from tacrolimus, sites from gingivitis and healthy subjects. GCF and serum MPO and MMP-13 levels were determined by a time-resolved IFMA and ELISA.
Results: CsA patients having GO had elevated GCF MPO levels than CsA patients having no GO, tacrolimus and healthy subjects ($P < 0.005$), but similar levels to those of gingivitis. GCF MPO level was higher in GO+compared to GO- sites in CsA patients having GO ($P < 0.05$), while GCF MMP-13 levels were similar. CsA patients having GO, CsA patients having no GO, tacrolimus and gingivitis patients had significantly higher GCF MMP-13 total amount compared to those of the healthy subjects ($P < 0.005$), while they had similar MMP-13 levels. CsA patients having GO had significantly higher serum MPO levels than CsA patients having no GO and healthy subjects ($P < 0.005$).
Conclusion: These results show that GCF MPO and MMP-13 levels have not been affected by CsA and tacrolimus therapy, and gingival inflammation seems to be the main reason for their elevations.

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P. gingivalis lipopolysaccharide regulates bone sialoprotein gene transcription

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Aims: Bone sialoprotein (BSP) is expressed by differentiated osteoblasts having function in the initial mineralization of bone. Lipopolysaccharide (LPS) is a major mediator of inflammatory responses in periodontal disease. The purpose of this study was to examine the molecular mechanism of transcriptional regulation of BSP gene by *Porphyromonas gingivalis* (*P.g.*) derived LPS.
Materials and methods: To determine the ability of *P.g.* LPS to regulate BSP gene transcription in osteoblast-like ROS17/2.8 cells, we conducted Northern blot, luciferase assays with chimeric constructs of the rat BSP gene promoter, and gel mobility shift assays.
Results: BSP mRNA levels were increased by 0.01 μg/ml *P.g.* LPS and decreased by 0.1 μg/ml *P.g.* LPS at 12 hour. In transient transfection analyses, 0.01 μg/ml *P.g.* LPS increased and 0.1 μg/ml *P.g.* LPS decreased (12 hour) luciferase activities of the construct, which encompasses nucleotides -116 to +60 transfected into ROS17/2.8 cells. The effects of *P.g.* LPS were abrogated by 2-bp mutations in cAMP response element (CRE) and FGF2 response element (FRE) in the construct. Tyrosine kinase and ERK inhibitors abrogated *P.g.* LPS effects on BSP transcription. Furthermore, 0.01 μg/ml *P.g.* LPS increased and 0.1 μg/ml *P.g.* LPS decreased the CRE- and FRE-protein complexes formation.
Conclusion: These studies indicated that 0.01 μg/ml *P.g.* LPS enhanced, and 0.1 μg/ml *P.g.* LPS suppressed BSP gene transcription, which targeted CRE and FRE in the rat BSP gene promoter.

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Different functional activity pattern of fibroblasts from a case of ligneous periodontitis

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Background and Aims: We report here on a case of ligneous periodontitis (LP), which is one of the main clinical manifestations

of hypoplasminogenaemia, a rare disorder characterized by a nearly complete deficiency of immunoreactive plasminogen (plg) level and functional activity. It appears as massive, painless, gingival enlargements and alveolar bone destruction in the area. The course of the disease is progressive and typically ends up with early loss of all teeth. At present, no efficient treatment option is available. Biochemical investigations for defective fibrinolysis in ligneous lesions are scarce in the literature. Thus, we aimed to investigate the possible contribution of fibroblastic functions in the pathophysiology of this disease.

Materials and methods: Gingival tissue specimens were taken from a diseased and a healthy control patient to compare fibroblastic cell functions.

Results: Molecular genetic analysis of a female patient exhibited a K19E plg gene mutation and 4 polymorphisms in a homozygous form within the plg gene. Fibroblasts from the hypoplasminogenemic patient reorganized collagen lattices more rapidly than cells from the healthy control. Furthermore they demonstrated a significantly greater overall production and increased activation of MMP2 and also showed a more active phenotype than healthy fibroblastic cells.

Conclusion: This latter finding might be an explanation for the uncontrolled fibrin (ogen) deposition during wound healing in patients with LP.

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Ref no: EUABS064125

The effects of nicotine on gingival fibroblast gene expression: an *in vitro* wound model

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Objective: Human gingival fibroblast (HGF) growth factor gene expression profiles were determined *in vitro* following nicotine treatment; with or without *in vitro* wounding.

Methods: HGF from 3 non-smoking males (20–30 years) were grown in culture media alone (Control) or in media supplemented with 0.1 μM nicotine (Nicotine). *In vitro* wounding was performed using a standard technique. Gene expression was examined before wounding (T_0), at 24 hours (T_{24}) and 48 hours (T_{48}) post-wounding. The expression level of 84 human growth factor genes (hGFG) (RT^2 Profiler™ PCR Array) was determined using qRT-PCR, and analysed using the $2^{-\Delta\Delta C}{}_T$ method.

Results: Comparing T_{24} to T_0, >97% genes were down-regulated (DR) in all 3 Control cultures. Nicotine cultures showed a different pattern, with >86% of genes DR in 2 subjects and 42% DR in 1 subject. Comparing the Nicotine with Control cultures at T_0, >86% of genes were DR for all 3 subjects. At T_{24}, 73% to 85% of the genes returned to an up-regulated (UR) profile in 2 of the 3 subjects. At T_{48}, 2 subjects returned to a DR profile (˜82% genes) and 1 subject remained UR (97%).

Conclusion: These results show that *in vitro* wounding and *in vitro* nicotine treatment appear to down-regulate independently the hGFG profiles in HGF of non-smokers. When combined, hGFG profiles were up-regulated 24 hours post-wounding, returning to down-regulated profiles 48 hours post-wounding. The significance of these findings *in vivo* remains to be determined.

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Ref no: EUABS064149

Protective role of anti-fdf antibody in gingival crevicular fluid of periodontitis patients

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Background: *Tannerella forsythia* is one of the important periodontopathogen. We have previously isolated the novel virulence factor of its bacterium designated as forsythia detaching factor (FDF) which induced detaching adherent cells from the bottom of culture dish and IL-8 production in human fibroblasts *in vitro*. The purpose of this study was to clarify the relationship between the anti-FDF antibody levels in gingival crevicular fluid (GCF) and the local periodontal status in periodontitis patients.

Materials and methods: Thirty-two periodontitis patients were included in this study. Following the clinical measurements (Probing Pocket Depth: PPD, Clinical Attachment Level: CAL), GCF samples were obtained from periodontally healthy sites (PPD < 4 mm) and diseased sites (PPD ≥ 4 mm) using a Periopaper®. Anti-FDF antibody levels were measured by enzyme-linked immunosorbent assay (ELISA).

Results: Anti-FDF antibody levels of periodontally healthy sites were significantly higher than those of diseased sites. In all subjects, anti-FDF antibody levels showed statistically significant negative correlations with PPD or CAL.

Discussion and conclusion: These results suggest that anti-FDF antibody possesses the protective ability against periodontitis. This antibody might be used as an agent for passive immunization against periodontitis patients.

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Ref no: EUABS064173

The antimicrobial peptide, β1-defensin gene, is associated with higher caries risk but not with risk of periodontal disease

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The two major oral diseases, caries and periodontitis, are infectious diseases and the elucidation of the mechanisms underlying these conditions is of great interest. Both environmental and genetic factors have been implicated in the etiology of both periodontal diseases and caries. Twin studies have suggested that as much as 50% of the risk for periodontal disease and 40–65 % of the risk for caries may be due to genetic factors. Caries and periodontal diseases are infectious diseases caused by gram positive and gram negative bacteria respectively. Therefore genes that play a role in host defense are good candidate genes for disease susceptibility. Defensins are key elements of innate immune system. In this study we investigated if variation in DEFB1 is associated with caries and periodontitis. We analyzed three single nucleotide polymorphisms in DEFB1 in 334 DNA samples from unrelated individuals. Carrying a copy of the variant allele of the DEFB1 marker rs11362 increased more than 5-fold the DMFT and DMFS scores. Also, carrying a copy of the variant allele of the DEFB1 marker rs179946 correlates with low DMFT scores. We found a high caries experience haplotype (GCA), which increases 2-fold DMFT scores, and a low caries experience haplotype (ACG), which decreases 2-fold DMFT scores, in the DEFB1 promoter. No association between DEFB1 genetic markers and periodontal disease was found.Our results suggest that functional polymorphisms of DEFB1are potential markers for caries.

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Estrogen affects gene expression in LPS stimulated PDL-cells

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Background: The periodontal ligament cells (PDL cells) play a key role in the formation of the periodontal ligament but these cells have other functions as well. The PDL cells express estrogen receptors but the functional importance is not known. Estrogen modulates inflammation and our hypothesis is that estrogen protects the periodontium via an anti-inflammatory effect on PDL cells.

Aim: To identify genes regulated by estrogen in LPS-treated human PDL cells by whole genome arrays.

Materials and methods: PDL cells were obtained from human premolars extracted for orthodontic reasons. The cells were divided into two groups. One group was pre-treated with 17β-estradiol (E_2, 100 nM) for 2 hour and then with *Escherichia coli* LPS (500 ng/ml) for 24 hour. The other group was treated with LPS only. Total RNA was extracted and purified by RNeasy Mini Kit (Qiagen®, USA). A whole genome microarray was performed (Affymetrix®, USA) comparing gene expression in the two groups. The cut-off limit was set to a twofold change.

Results and conclusion: Estrogen caused an up-regulation of 38 genes, while 28 genes were down-regulated. Estrogen regulated genes associated with cell-metabolism and cell-signalling but also genes associated with early the inflammatory response. The functional significance of these findings is now determined by e.g., measuring protein levels with ELISA. We conclude that estrogen regulates gene expression in human PDL cells exposed to LPS.

83
Ref no: EUABS064138

Activity of nitric oxide synthase and levels of nitric oxide end metabolites in the gingiva and gingival fluid from patients with sickle cell disease

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Background: Sickle cell disease (SCD) is a hereditary hemoglobinopathy characterized by microvascular vaso-occlusions. Nitric oxide (NO) is a free radical that influences in every tissue and derived from L-Arginine by the action of NO synthase (NOS) whose activity is induced in several cell types, including gingival fibroblasts after exposure to inflammatory stimuli. Since SCD has been recognized as an inflammatory condition, and alterations in NO metabolism may have an important role in the pathophysiology of SCD, we aimed to evaluate NO metabolism in gingival tissue and gingival crevicular fluid (GCF) from SCD patients.

Material and methods: Twenty patients and 20 controls were evaluated. Plaque index (PI), gingival index (GI), probing depth (PD) and bleeding on probing (BOP) were recorded. Immunohistochemical staining was performed for evaluating NOS expression and NO levels were spectrophotometrically determined.

Results: PI, GI and BOP were significantly higher in patients ($P < 0.0001$). NO levels in patients were not significantly lower than control individuals (21.19 ± 4.48 versus 23.12 ± 2.32 μmol/l, $P > 0.05$). No statistical differences were observed in iNOS expression intensity, inflammation intensity and rate of iNOS (+) inflammation cells ($P > 0.05$).

Conclusions: This study was the first report of evaluating NO metabolism in gingival tissues and GCF from SCD patients. Using gingival tissues and GCF, we are unable to demonstrate SCD-associated NOS expression and difference in NO levels.

84
Ref no: EUABS064288

Effect of monosaccharides on dental biofilm formation *in vitro*

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Objectives: The goal of this study was to investigate the effect of different monosaccharides on biofilm formation using a multi-species biofilm model *in vitro*.

Materials and methods: Saliva coated hydroxyapatite discs were exposed for 15 hours or 45 hours to a bacterial suspension containing *A.naeslundii* OMZ 745, *F.nucleatum* ATCC 25586, *S.oralis* OMZ 607, and *V.dispar* OMZ 493 in the presence of different concentrations of monosaccharides including D-galactose, L-rhamnose, D-mannose and D-tagatose. After incubation, adherent bacteria were harvested and the total number of colony forming units (CFUs) as well as the proportion of each bacterial species was determined by culture.

Results: At 15 hours, there was no significant difference in the total CFUs between biofilms exposed to monosaccharides and controls. At 45 hours, total CFUs decreased significantly in the presence of D-galactose (9.2×10^{11} CFUs/ml, conc. 1.0%), D-mannose (2.5×1010 CFUs/ml, conc. 1.0%) and D-tagatose (7.2×10^{11} CFUs/ml, conc. 1.0%) compared to controls (7.9×10^{12} CFUs/ml). The effect was dose-dependent. In contrast, L-rhamnose showed no effect. Changes in the distribution of bacterial species within biofilm were consistently observed in the presence of D-mannose.

Conclusions: D-galactose, D-mannose and D-tagatose have no effect on the early stage of biofilm formation but have the potential to hinder the development of more mature biofilm, probably by interfering with the coaggregation between micro-organisms.

Basic Research - Pre-clinical models

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Ref no: EUABS064115
Boron regulates mineralized tissue-associated proteins in osteoblasts (MC3T3-E1)
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The aim of this study was to determine the effects of boron on the proliferation, survival, mineralization and mineralized tissue associated proteins mRNA expressions of MC3T3-E1 pre-osteoblastic cells. In order to evaluate the proliferation of MC3T3-E1 cells, they were treated with different concentrations of boron (0, 0.1, 1, 10, 100 and 1000 ng/ml) and were counted on day 2, 5, and 14. Survival of the cells was evaluated at 24 and 96 hours with MTT assay. Von Kossa staining was used to determine the mineralized nodules. Total RNAs were isolated on day 3 and 8. BMP-4, 6 and 7 levels in conditioned media were detected using ELISA. According to the MTT assay, at 24 hours meaningful decrease on cell survival was only determined at 10 000 ng/ml B treatments. Related to the proliferation assay slight decrease in the B-treated groups were determined on days 5 and 14, but the difference was statistically insignificant. In mineralization assay, slight increase was evidenced on 1 and 10 ng/ml B treated groups on day 30. Compared to the control group, all of the treatment groups increased their BSP expressions on day 8. Increased RunX2 expressions were observed in B treatments on day 3. Increased BMP-4, 6 and 7 protein levels were detected at 0.1, 1, 10 and 100 ng/ml B concentrations. Results of the study suggest that at the molecular level B displays important roles on bone metabolism and may find novel usages at the regenerative medicine (BOREN-2006-08-Ç07-10).

86
Ref no: EUABS063875
The influence of PRP on the osteogenesis and calcium deposition of osteoblast derived of BM-mesenchymal stem cell
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Abstract and objective: Bone marrow mesenchymal stem cells can be differentiated in to osteoblast, when cultured with specific growth factors. It has been shown that, Platelet-Rich Plasma (PRP) could influence the osteoblasts and accelerate their osteogenic activity. In the present study it has been made an attempt to evaluate the activity of PRP co-cultured osteoblasts and the rate of calcium deposition in these cells.
Materials and methods: Mesenchymal stem cells were isolated from human bone marrow and proliferated in DMEM and 10% FBS medium. Following the exposure to β glycerol phosphate, Dexamethasone and ascorbic acid, they were differentiated in to osteoblasts, which were undergone atomic absorption and RT-PCR assay for BMP-4, BGLAP and Cbfa1. Then they were co-cultured with PRP in various concentrations) 50% to 200%) during 24 hours in order to investigate its influence on osteogenic activity that was measured by atomic absorption assay.
Result: The mesenchymal stem cells were successfully isolated and differentiated in to osteoblasts. They were successfully co-cultured with PRP concentrations. The most remarkable result was observed in the 65% PRP concentration in the 3rd hour ($P < 0.005$).The analysis was T sample test.
Conclusion: In the present study it has been indicated that PRP could accelerate osteogenic activity but in the specific concentration and during the limited time.

87
Ref no: EUABS064680
Effects of CO_2 laser irradiation on bone sialoprotein transcription
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Aims: Bone sialoprotein (BSP) is a mineralized tissue-specific protein that is highly expressed during the initial formation of bone. Laser irradiation at low photon intensities has a stimulating effect on cell and tissues. Although the CO_2 laser is a surgical rather than a therapeutic, we have attempted to use the CO_2 laser at low energy densities to obtain biological effects on bone metabolism.
Materials and methods: The present study investigated the regulation of BSP transcription following CO_2 laser irradiation. Using the osteoblastic UMR106 and ROS 17/2.8 cells, we conducted Northern hybridization, luciferase assays and gel mobility shift assays.
Results: BSP mRNA levels increased by CO_2 laser irradiation (3 w, 20 second; 12 hours) in UMR106 cells. CO_2 laser (2 w, 20 second, 12 hour) increased luciferase activities of the constructs, pLUC3 and pLUC4, which encompasses nucleotides -116 to +60 and -425 to +60, transfected into ROS 17/2.8 and UMR106 cells. Transcriptional stimulations following CO_2 laser irradiation were almost completely abrogated in the constructs that included 2-bp mutations in the FGF2 response element (FRE) and homeodomain protein-binding site (HOX). Gel mobility shift assays with radiolabeled FRE and HOX revealed decreased binding of nuclear proteins from CO_2 laser stimulated ROS 17/2.8 and UMR 106 cells.
Conclusions: These studies show that CO_2 laser induces BSP transcription in osteoblast-like cells through FRE and HOX sites in the proximal promoter of rat BSP gene.

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Ref no: EUABS064660
In vitro modelisation of Er: YAG laser effects on mineralized surfaces and in cell cultures
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Erbium-doped: Yttrium-Aluminum-Garnet (Er: YAG, 2940 nm) laser was developed as a new approach in Scaling and Root Planning. It is presented as an alternative of conventional treatment (manual and US). The objectives of this work were to: characterize the morphological and physico-chemical modifications induced by this laser on healthy cementum, study the effects

of an irradiated surface on cell cultures, and to model an approach of low level effect A device of translation was manufactured to irradiate samples with the Er: YAG laser (parameters: 120, 140 or 160 mJ, 15 Hz, 15 of angulation). Binocular lenses, SEM, Ft-Raman spectrometry were used to analyze samples. MC3T3-E1,were irradiated under differents conditions (10 second, 20 Hz, 60 second, 20 Hz, 60 second, 1 Hz , at 10 cm of depth) and cultured on irradiated surfaces. Cell numbers, morphology and viability were analyzed. An ablation of cementum, proportional to the energy, was obtained under Er: YAG irradiation with irrigation of water and air. The irradiated surface was homogeneous and rough. The irradiation of surface resulted in variations of the morphological aspect and distribution of MCT3-E1. The irradiation of these cells was at the origin of variable biological effects. These effects are however random and not always reproducible, probably due of complex and multiple associated biological mechanisms.

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Ref no: EUABS064570

Long-term test of intraosseous implantation of silated hydroxyethylcelullose – pre-clinical examination

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Silated hydroxyethylcellulose is one of these materials which can be used as a carrier of drugs or grafts. The polymer creates a network of hydroxyethylcellulose chains connecting by silane coupling agents. We predict the possibility of using polymer as a carrier, for such materials as hydroxyapatite, tricalcium phosphate or calcium hydroxide, in conservative dentistry, endodontics, periodontology etc. Silated hydroxyethylcellulose was implanted in jaws of 12 rabbits. The animals were put down after 12, 26 and 52 weeks. In the beginning and the end of experiment we evaluated blood cell count, the level of osteocalcin, alkaline phosphatase, hydroxyprolin and type-I procollagen in peripheral blood. Statistical analysis was performed using the Wilcoxon signed-rank test ($P < 0.05$). The excised specimens (the implant sites) were demineralised in 10% EDTA, dehydrated and embedded in paraffin. They were then sectioned and stained with haematoxylin-eosin for light-microscopic observation. The tissue response was classified as minimal according to ISO standard, which means that there was no bone resorption around silated hydroxyethylcellulose implants. The application of silated hydroxyethylcelullose didn't influence the blood cell count. The level of osteocalcin, alkaline phosphatase and hydroxyprolin in peripheral blood of experimental animals statistically significant increased during first 12 weeks of experiment.

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Ref no: EUABS064584

Evaluation of periodontal wound healing/ regeneration following application of RHGDF-5 in the supraalveolar periodontal defect model

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Objective: To evaluate a candidate recombinant human GDF-5 (rhGDF-5) formulation for periodontal onlay indications.
Methods: Contralateral, supraalveolar, critical-size, periodontal defects in 5 adult Hound Labrador mongrel dogs received rhGDF-5 in a PLGA/ß-TCP composite carrier or carrier control. rhGDF-5 and control constructs were molded around the teeth to replace the alveolar bone and were then submerged for primary intention healing. Animals were euthanized at 8 weeks when block biopsies were collected for histometric analyses.
Results: Healing was generally uneventful. A few sites exhibited minor exposures; 1 control and 1 experimental site (separate animals) exhibited more extensive exposures. Experimental and control constructs were easy to apply and provided structural integrity to support the mucoperiosteal flaps in this challenging model. Limited residual ß-TCP particles were observed at 8 weeks for both experimental and control sites. The rhGDF-5 construct supported significantly greater cementum (2.3 ± 0.4 versus 1.1 ± 0.3 mm) and bone formation (2.9 ± 0.7 versus 1.2 ± 0.3 mm), but also ankylosis (0.5 ± 0.2 versus 0.0 mm) compared with the control ($P < 0.05$)
Conclusions: The rhGDF-5 construct appears a promising candidate technology for periodontal regeneration. Additional evaluation under conditions for optimal wound healing including dosage and release variations will be conducted to optimize this rhGDF-5 formulation prior to clinical application Supported by a grant from Scil Technology.

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Ref no: EUABS064526

Fluoridation efficiency of anti-inflammatory toothpaste

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Aim: Bioavailability of fluoride compounds in toothpastes can be affected by interactions with other ingredients. This *in vitro* study was designed to compare the fluoridation efficiency of a new anti-inflammatory toothpaste (Afe : Arthrodont Protect – Pierre Fabre Oral Care) containing Nicomethanol hydrofluoride and Enoxolone with 2 experimental pastes : (A) : with no fluoride nor Enoxolone and (Af) containing Nicomethanol hydrofluoride but no Enoxolone.
Material and method: Analysis of fluoride content in toothpastes showed that (A) didn't contain fluoride while (Afe) and (Af) contained 1500 ppm of total fluoride of which 90% was free (soluble in water at 37°C, pH7). Small disks of apatitic material were used as synthetic models of enamel and placed for 7hour in toothpaste slurries containing 60% of paste in water.
Results: The treated disks were dissolved in an acidic solution for fluoride uptake assessment. Treatment with (Af) and (Afe) resulted in a small but significant fluoride uptake of 0.03%. The short time of contact, but moreover the fact that fluoridation essentially takes place only on the surface of the disks explained this low value.
Discussion: (Af) and (Afe) present a real and similar fluoridation efficiency demonstrating that Enoxolone doesn't interfere with free fluoride availability nor with fluoride uptake by apatite. This synthetic model is of great interest for quick and reliable comparative studies and screening of toothpastes formulation.

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Ref no: EUABS064528

Evaluation of periodontal healing of 2-wall intrabony defects with EMD, BFGF, or PDGF/β-TCP – a histomorphometric study in dogs

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Background: Tissue engineering technologies making use of growth factors and scaffolds have been developed for periodontal regeneration. The present study evaluated periodontal healing after application of enamel matrix derivative (EMD), basic fibroblast growth factor (bFGF), or platelet-derived growth factor

with β-tricalcium phosphate (PDGF/β-TCP) for 2-wall intrabony defects in dogs.
Materials and methods: 2-wall intrabony defects were surgically created on the mesial and distal sides of bilateral mandibular second and fourth premolars in 4 beagle dogs. The 16 defects were randomly assigned to one of the following treatments: EMD, bFGF, PDGF/β-TCP, and open flap debridement (OFD) as control. At 8 weeks postsurgery, the animals were sacrificed and histological specimens were prepared for histomorphometric evaluation.
Results: The experimental groups exhibited significantly greater regeneration of new cementum with periodontal ligament-like tissue than the OFD group. The levels of new bone were significantly greater in the bFGF group than in the EMD and OFD groups. bFGF treated sites showed the most aggressive bone formation. No significant differences were observed between the bFGF and PDGF/β-TCP groups in any of the histometric parameters.
Conclusions: Favorable periodontal healing was observed after application of EMD, bFGF and PDGF/β-TCP. However the choice of these treatment modalities may be crucial for successful periodontal regeneration in deep wide 2-wall defects.

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Ref no: EUABS064367

Effects of calcium hydroxide on bone sialoprotein gene transcription

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Aims: Calcium hydroxide (Ca $(OH)_2$) has been widely used for a variety of applications in dentistry due to its antimicrobial effects and capability of inducing hard tissue. Ca $(OH)_2$ has also been shown to enhance bone metabolism. Bone sialoprotein (BSP), an early marker of osteoblast differentiation, has been implicated in the nucleation of hydroxyapatite during *de novo* bone formation. The purpose of this study was to determine the molecular mechanisms of transcriptional regulation of BSP gene by Ca $(OH)_2$ in osteoblast-like ROS17/2.8 cells.
Material and methods: We conducted Northern blot, luciferase analyses with chimeric constructs of the rat BSP gene promoter and gel mobility shift assays.
Results: 0.4 mM Ca $(OH)_2$ increased BSP mRNA levels at 12 hours. Ca $(OH)_2$ (0.4 mM, 12 hour) also increased luciferase activity of the construct (pLUC4; -280 to +60) of the rat BSP gene promoter. Transcriptional activities induced by Ca $(OH)_2$ were inhibited by protein kinase C (PKC) and protein kinase A (PKA) inhibitors. Introduction of 2-bp mutation in the pLUC4 construct showed that the effects of Ca $(OH)_2$ were mediated through HOX and Runx2 sites. In gel shift assays, HOX-protein binding activities were increased by Ca $(OH)_2$ (0.4 mM, 12 hour).
Conclusion: These studies indicated that Ca $(OH)_2$ increased BSP gene transcription through PKC and PKA-dependent pathways and that the Ca $(OH)_2$ effects were mediated by HOX and Runx2 in the proximal rat BSP gene promoter.

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Ref no: EUABS064776

BMP-2 regulation of bone sialoprotein gene transcription

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Aims: Bone morphogenetic proteins-2 (BMP-2) has been shown to play central roles in the control of osteoblast differentiation and osteogenesis and to induce ectopic bone formation. Bone sialoprotein (BSP) is a mineralized-tissue specific protein that appears to function in the initial mineralization of bone. In this study, we examined whether BMP-2 could regulate BSP gene transcription in C2C12 myoblasts.
Materials and methods: To determine the molecular basis of the transcriptional regulation of BSP gene transcription by BMP-2, we conducted real-time PCR, RT-PCR, transient transfection analyses with chimeric constructs of the rat BSP gene promoter linked to a luciferase reporter gene and gel mobility shift assays after stimulation by BMP-2.
Results: BMP-2 (300 ng/ml, 48 hour) induced BSP mRNA expression in C2C12 cells. BMP-2 increased luciferase activities of pLUC4 and pLUC5, which encompasses nucleotides -425 to +60 and -801 to +60. Gel mobility shift assays with radiolabeled FGF2 response element (FRE), homeodomain protein-binding site (HOX) and TGF-β activation element (TAE) oligonucleotides revealed increased binding of nuclear proteins from BMP-2-treated C2C12 cells. While anti-Runx2 and Smad1 antibodies produced supershifts of FRE binding proteins, only anti-Smad1 antibody induced supershift of HOX binding protein.
Conclusions: These studies indicated that BMP-2 increased BSP transcription mediated through FRE, HOX and TAE in the rat BSP gene promoter.

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Ref no: EUABS064971

Anti-inflammatory effect of four tooth-pastes in a model of human gingival mucosa

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Introduction: The aim of this study was to evaluate and to compare the potential for anti-inflammatory effect on the buccal mucosa with the use of four tooth-pastes; one containing 1.0% enoxolone, the second containing 0.7% enoxolone, the third containing 0.7% enoxolone and fluorinol (1500 ppm), the fourth containing excipient.
Materials and methods: Using a model of human buccal mucosa kept alive ex vivo (fragments of gum from different donnors), a simulation of inflammation was performed using substance P and lipopolysaccharides added to the culture medium upon contact with chorion. Theese neuromediators are responsible for the inflammatory response: vascular effects (edema, vasodilatation) and biochemical reactions (release of cytokines such as IL8). The tooth-paste product was applied to the epithelium surface. Histological analyses were performed on sections tinted with hemalun-eosin (scores of edema and vasodilatation). Dosage of cytokine IL8 within culture supernatants using spetcrophotometry, related to the total protein quantity, was also performed.
Results: Enoxolone had an anti-inflammatory effect on the gum. For each of the parameters studied, the difference was sigificant when compared with the excipient.The most favourable results were obtained with the tooth-paste containing 1.0% enoxolone.
Discussion: The tooth-paste containing 1.0% enoxolone (Arthrodont ®) has the most important anti-inflammatory effect on the gum. Presence of fluorinol doesn't increase this potential.

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Ref no: EUABS064983

B-tricalcium phosphate alone or in combination with bone morphogenetic protein in promoting bone formation around immediate extraction socket implants

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Background: The aim of the present study was to assess the efficacy of a b-tricalcium phosphate alone or in combination with bone morphogenetic protein for bone regeneration around dental implants placed into fresh extraction sockets.
Methods: Bilateral mandibular premolars were extracted from three dogs and the implants were immediately placed. On the left side of the jaw, bone defects were filled with b-tricalcium phosphate alone to be used as controls. The right defects were filled with b-tricalcium phosphate combined with bone morphogenetic protein. After 1, 2 & 3 months of healing, specimens were prepared for histological and histomorphometric evaluations.
Results: No post-surgical complications were observed during the healing period. In all experimental conditions, histological observations revealed a lamellar bone formation in contact with the implant. Histomorphometric analysis showed that bone morphogenetic protein triggers a significant ($P < 0.05$) increase in terms of the number of threads in contact with bone, bone-to-implant contact, and peri-implant bone density.
Conclusion: It is concluded that bone morphogenetic protein significantly increases bone regeneration around immediately placed implants.

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Ref no: EUABS065089

Analysis of adult msc characteristics from different donor sites

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Objectives: Aim of the study was to investigate characteristics of adult mesenchymal stem cells from different donor sites in respect to isolation, amplification and differentiation behavior.
Material and methods: MSCs from seven donor sites were obtained during oral and orthopedic surgery interventions. Bone explants from the posterior maxilla, the oblique line and proximal tibia, periosteum from the posterior mandible, dental pulp from wisdom teeth and BM punctures from the iliac crest and proximal tibia were evaluated. 10 donors per site between 19 and 68 years old were included to the study. Donor sites and tissues were evaluated by their accessibility, donor site morbidity and average time periode until visibility of plastic adherent cells. Cell characterisation was performed by flow cytometry, live cell imaging and evaluation of differentiation potential torwards the adipogenic and osteogenic lineage.
Results: MSC's could be harvested and isolated from all sites after 6–12 days. They showed up to date characteristics of MSCs, could be expanded and proofed multipotency. Lowest donor site morbidity was observed at the posterior maxilla whereas the harvest from mandibulary sites and punctures at the iliac crest were associated with a higher morbidity.
Conclusion: All sites seem to be potential sources for mulipotent MSCs for tissue engineering aproaches. Harvest morbidity should also affect the choice of the appropriate site.

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Ref no: EUABS065056

The effect of electrical currents and chlorhexidine on *Porphyromonas gingivalis* in dual-species biofilms

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Aims: Biofilms are resistant to conventional antimicrobial agents. This study aimed to evaluate the efficacy of chlorhexidine 0.2% (CHX) on *Porphyromonas gingivalis* (P.g) biofilms when used (or not) in conjunction with weak direct electric currents (DC).
Material and methods: We inoculated a BHI broth with *Streptococcus gordonii* and *P.g* before perfusing it, in anaerobiosis, for 7 days via a closed circuit containing 2 Modified Robbins Devices (MRD) assembled in derivation. Biofilms grew on hydroxyapatite discs bonded at the bottom of the MRD plugs and were then treated for 30 min with CHX on the first MRD and with CHX plus DC (1.5 mA or 10 mA) on the other one. The antimicrobial activity against biofilms was evaluated after culture by comparing to baseline the mean proportion of *P.g* killed at $t = 10$ min.
Results: In the first series of biofilm treatments (CHX ± 1.5 mA DC), the mean proportion of *P.g* killed was 81.06% (± 8.55) for the biofilms undergoing CHX only and 79.08% (± 9,96) when they were treated as well with 1.5 mA DC ($P > 0.05$). In the second series (CHX ± 10 mA DC), we found a proportion of *P.g* killed of 84.9% (± 2.76) with CHX and 98.93% (± 0.55) when CHX was used in addition with the DC. Here, the difference was significant ($P < 0.05$).
Conclusions: We report an electrical enhancement of chlorhexidine 0.2% efficacy against *Porphyromonas gingivalis* biofilms when used in conjunction with 10 mA currents. The improvement described here is called the BIOELECTRIC effect.

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Ref no: EUABS065682

Evaluation of selective calculus removal with a new sensor based ultrasonic scaler

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The aim of the study was to analyse calculus removal employing a novel sensor based ultrasonic device. 48 freshly extracted teeth were covered with porc gingiva to create a periodental pocket. All teeth where scaled during a period of 1.5 min. 16 of them where treated with a conventional ultrasonic scaler and 16 with the PerioScan®-system in non-detection mode. The remaining calculus was measured with a surface analyzing software. Another 16 freshly extracted teeth covered with porc gingival were scaled using the PerioScan® including the detection mode. Areas with a positive calculus detection signal were documented. Further 18 freshly extracted teeth where mounted on a microscope slide covered with rubberdam to assess the treatement time. 6 of them where scaled with a conventional ultrasonic scaler, 6 with the PerioScan® in detection mode and 6 with the PerioScan® without detection mode. Calculus removal with the PerioScan®-device was superior to the conventional ultrasonic scaler (Mann-Whithney $P < 0.05$, median PerioScan® 44.5%, max 72.2%, min 10%, median ultrasonic scaler 27%, max 69.3%, min 0.7%). The calculus detection system showed a sensitivity of 92.7%. Treatment of root surfaces was extended by 27% when the detection mode was used. The PerioScan®-device is an efficient ultrasonic scaler system. The high sensitivity of the detection mode may improve the clinical performance of subgingival debridement.

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Ref no: EUABS065742

Evaluation of RHBMP-2 coated implant processing on local bone formation and osseointegration: vacuum-dried implants

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Objectives: Oral implants soak-loaded with recombinant human BMP-2 (rhBMP-2) induces relevant bone formation but also resident bone remodeling. The objective of this study was to evaluate local bone formation and bone-implant contact (BIC) at implants partially coated with rhBMP-2 and vacuum-dried to obviate resident bone remodeling.
Methods: Supraalveolar peri-implant defects in 12 male, adult, Hound Labrador mongrel dogs received 10-mm implants with a titanium porous oxide surface coated in their most coronal aspect with 30 μg rhBMP-2/implant (P) or coated (30 μg rhBMP-2/implant) following soak-load of the entire implant in a 1.5 mg/mL rhBMP-2 solution (S) and vacuum-dried. Six animals received P- and 6 animals S-implants. Animals were euthanized at 8 weeks and histometric evaluation.
Results: Healing was unremarkable. New bone formation averaged (± SE) 3.2 ± 0.5 versus 3.6 ± 0.3 mm, bone density 46.7 ± 5.8% versus 31.6 ± 4.4% and BIC 28.0 ± 5.6% versus 36.9 ± 3.4% for P- and S-implants respectively ($P > 0.05$). However resident bone remodeling was significantly influenced by the coating protocol. Bone density averaged 72.2 ± 2.1% for P- versus 60.6 ± 4.7% for S-implants; and corresponding BIC 70.7 ± 6.1% versus 47.2 ± 6.0% ($P < 0.05$).
Conclusion: Local application of rhBMP-2 appears a viable technology to produce rhBMP-2 coated implants in support of bone formation and osseointegration obviating significant resident bone remodeling. Supported by Nobel Biocare AB.

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Evaluation of RHBMP-2 coated implant processing on local bone formation and osseointegration: air-dried implants

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Objectives: Oral implants soak-loaded with recombinant human BMP-2 (rhBMP-2) induces relevant bone formation but also resident bone remodeling. The objective of this study was to evaluate local bone formation and bone-implant contact (BIC) at implants partially coated with rhBMP-2 and air-dried to obviate resident bone remodeling.
Methods: Supraalveolar peri-implant defects in 12 male, adult, Hound Labrador mongrel dogs received 10-mm implants with a titanium porous oxide surface coated in their most coronal aspect with 30 μg rhBMP-2/implant (P) or coated following soak-load of the entire implant in a 1.5 mg/mL (30 μg rhBMP-2/implant) rhBMP-2 solution (S) and air-dried. Six animals received P- and 6 animals S-implants. Animals were euthanized at 8 weeks for histometric evaluation.
Results: Healing was unremarkable. New bone formation averaged (± SE) 3.4 ± 0.2 versus 3.5 ± 0.4 mm, bone density 38.0 ± 3.8% versus 34.4 ± 5.6%, and BIC 25.0 ± 3.8% versus 31.2 ± 3.3% for P- and S-implants respectively ($P > 0.05$). However resident bone remodeling was significantly influenced by the coating protocol. Bone density averaged 74.7 ± 3.8% for P- versus 50.8 ± 4.1% for S-implants; and corresponding BIC 70.1 ± 6.7% versus 43.3 ± 3.9% ($P < 0.05$).
Conclusion: Local application of rhBMP-2 appears a viable technology to produce rhBMP-2 coated implants in support of bone formation and osseointegration obviating significant resident bone remodeling.

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Abstract withdrawn.

103
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A novel drug screening system for periodontitis using 3D culture

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To simulate the connective tissue degradation during periodontitis, three dimensional (3D) culture systems was employed. Human gingival fibroblasts were seeded into collagen gel, and then gingival epithelial cells were seeded onto the gel. After 24 hours, gels were floated and incubated for a further 5 days followed by air exposure for 5 days. Then, the gels were fixed, paraffin embedded, sectioned, and stained by HE using the usual protocol. A cancer-derived gingival epithelial cell line, Ca9-22, invaded collagen gel, whereas primary human gingival epithelial cells did not invade collagen gel, but covered the entire surface of the gel. Among the tested gingival fibroblast populations, a severe periodontitis patient-derived gingival fibroblast strikingly degraded collagen gel in 3D culture. Such collagen gel degradation was inhibited by the use of Marimastat (MMP inhibitor), aprotitin (serine protease inhibitor), and ALK5 inhibitor I (transforming growth factor-β type I receptor kinase inhibitor). These results imply that TGF-β signaling may be involved in collagen destruction in some types of fibroblast-epithelial cell interaction and that this 3D culture may serve as a useful *in vitro* model for a drug screening system for periodontitis.

104
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Bone healing patterns of porous PCL-based scaffolds in calvaria defects of rabbits: a micro-CT and histologic analysis

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Pre-treatment of polycaprolactone tricalcium phosphate (PCL-TCP) scaffolds under alkaline conditions can be used to modify surface characteristics and improve bone regeneration. 3 groups of PCL-TCP scaffolds with varying pretreatment exposures with sodium hydroxide (NaOH) were studied in a rabbit calvaria defect model and analyzed at 2, 4, 8, 12 and 24 weeks. (Group A: Untreated, Group B: 48 hours and Group C: 96 hours). Micro-computed tomography (micro-CT) analysis demonstrated first signs of early bone formation from the walls of the defects into the regenerated space and occasional islands of new bone from the inner portion. In addition, a greater overall bone volume and penetration of bone ingrowth within the rods

of the NaOH-treated scaffolds was detected as compared to the untreated ones. Histologic examination of all specimens reported good biocompatibility and absence of adverse inflammatory reactions related to the scaffolds. There was no evident distinction between the presentation of the scaffold and cellular activity across all 3 treatment groups. Considerable amount of bone formation were shown at 4 weeks. Bones were seen infiltrating along the surfaces and within the pores of the scaffolds. Surrounding the scaffold rods and newly formed bone are adipose cell-rich bone marrow tissue. Interestingly, a small increase in the bone marrow adipose tissue was detected at 24 weeks which accounted for a slight decrease in the overall bone formation measured.

105
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Guided bone regeneration using a RHGDF-5 and RHBMP-2 soak-loaded natural bone mineral in rat calvarial defects

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Objectives: The aim of the present study was to assess the influence of either an rhGDF-5 or rhBMP-2 soak-loaded natural bone mineral (NBM) on guided bone regeneration (GBR) in a rat calvarial defect model.
Materials and methods: Two partial thickness calvarial defects (diameter 6 mm, depth 1.5 mm) were prepared in a total of 90 rats each (n = 180 defects) and randomly allocated to the following groups: 1) NBM + collagen membrane (CM), 2) rhBMP-2 + NBM + CM, 3) rhGDF-5 + NBM + CM, 4) autogenous bone (AB) + CM, or 5) untreated control (C). At 1, 2, 4, 8, 16, and 24 weeks, dissected blocks were processed for histological [e.g. area (mm2) of mineralized tissue (MT)] and immunohistochemical (osteocalcin – OC, angiogenesis – TG) analysis.
Results: At 2 weeks, both soak-loaded NBM groups exhibited the formation of a thin hard tissue bridge underneath CM. All treatment groups revealed significantly higher mean MT values than the C group at 24 weeks. Significantly improved MT values were observed in the NBM + rhBMP-2 + CM group at 4 and 24 weeks (compared to NBM, AB, respectively). Immunoreactions to either OC or TG were comparable in all test groups.
Conclusion: Soak-loading of NBM using either rhBMP-2 or rhGDF-5 might only have a limited efficacy on bone formation in this specific defect model.

106
Ref no: EUABS065568

Immunofluorescence microscopy versus culture technique for the determination of antimicrobial effect of topic essentials oils

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Background: Microbiological cultures are considered the gold standard for bacterial identification. But it is a delicate, technique-sensitive, time-consuming and expensive procedure. To overcome these drawbacks, other techniques have been suggested, like the inmunofluorescence microscopy.
Purpose: Compare immunofluorescence microscopy versus culture technique for the determination of the topical essential oils antimicrobial effect over the black-pigmented flora on the tongue dorsa.
Materials and methods: 10 subjects were included. Samples were collected from the right side (control) of the tongue dorsa. Half sample was processed by immunofluorescense with propidium iodide, and the other half was cultured in rich agar medium plates for detection of oral H2S producing organism. On the left side of the tongue, a Listerine® breathfilm was placed, and completely dissolved. A second sample was taken and evaluated in the same way as the control sample.
Results: The culture, showed a reduction of up to 98.9% after the use of breathfilms on the tongue dorsa flora. Immunofluorescence showed a reduction of up to 95.1%.
Discussion: Although the statistical results show differences between the two methods, the results proved an important antimicrobial effect of Listerine® breathfilms on the tongue dorsa flora.
Conclusions: This study confirms that although culture technique is a more accurate test when compared to the immunofluorescence microscopy, both techniques can be used for this purpose.

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Ref no: EUABS065593

Low-level Er: YAG laser irradiation can enhance proliferation of osteoblasts

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Background: The high-level Er: YAG laser has been increasingly used in periodontal therapy. However, the low-level effects (photo-bio-modulation) of Er: YAG laser have not been clarified in detail. The aim of this study was to investigate the potential photo-bio-modulation effects of the low-level Er: YAG laser on proliferation of osteoblasts.
Materials and methods: Osteoblastic cell line MC3T3-E1 cells were cultured and serum starved for 24 hours prior to Er: YAG laser irradiation. Irradiation was performed at 2.6 mJ/cm2/pulse in the absence and the presence of culture medium for different time durations (30 sec–4 min). After 24 and 72 hours, cell proliferation and cytotoxicity were examined using MTT and LDH cytotoxicity assay kits. In some experiments, cells were preincubated with MAPK inhibitors (U0126, SP600125, SB203580) prior to the Er: YAG laser irradiation.
Results: MTT assay showed higher cell proliferation rate at 24 and 72 hours after irradiation compared with non-irradiated control both in the presence and absence of culture medium. The significantly highest enhancement of cell proliferation rate was observed at 3 min of irradiation with medium and 1 min of irradiation without medium. LDH activity was not changed in any conditions tested. All three MAPK inhibitors diminished laser-enhanced cell proliferation of MC3T3-E1 cells.
Conclusion: The low-level Er: YAG laser increases proliferation of cultured osteoblast cells possibly through MAPK pathways.

108
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Comparative evaluation of accuracy two radiographic techniques (bitewing & peri-apical) in assessment of anterior mandibular bone loss with grid sheet

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Introduction: The height of the alveolar bone varies as a consequence balance between osteogenesis and osteolysis. But in periodontal disease, imbalance and excess osteolysis will reduce the height of the alveolar bone.The aim of this study is to compare the accuracy of periapical radiography and vertical bitewing in evaluation of the amount of bone resorption in the mandibular

anterior region with use of Grid sheet and to apply thin Grid sheet for scaling the radiograph taken from the patients.
Materials and methods: For this research 20 patients who needed periodontal surgery in the anterior mandibular region were selected. Before surgery 3 periapical radiographs and 3 bitewing radiographs were taken from the mandibular anterior region with use of Grid sheet, after surgery also the amount of bone resorption the distance between CEJ and the crest of alveolar bove, in mesial and distal of the teeth, Indicated were measured by a probe and then recorded.
Results: With use of statistical tests and the conclusion was that although the amounts recorded from the periapical technique closer to the clinical reality, but because of the insufficient samples examined, use of rigid Grid sheet and the region examined there were not significant, differences between the accuracy of the two radiographic techniques in measurement of bone resorption in the mandibular anterior region.
Conclusion: Using Grid sheet will help the dentist for better accuracy in Radiographic evaluation.

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Ref no: EUABS065309

Laser irradiation stimulates osteoblast-like cells proliferation *in vitro*

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Aim: In the last decade, the use of low-intensity laser in the regeneration of soft and hard tissues has been proved to be effective. However, the effects of low–intensity laser irradiation on osteoblasts have not been widely investigated. The aim of our study was to determinate the effect of continuous wave diode laser irradiation on osteoblasts like-cells proliferation.
Methods: Human osteosarcoma cells (U2OS) were irradiated with a diode laser with a continuous wavelength of 915 nm and with different power levels (0.5 w and 5 w). Cells proliferation was evaluated after 24 hours and 72 hours by mitochondrial dehydrogenase activity (MTT) and optical microscopy.
Results: Single cells irradiation for 60 seconds at 5 w induces a significant increase in proliferation after 24 hours, while multiple stimulation for 40 and 60 seconds induced a proliferative effect after 72 hours. Single stimulation with 0.5 w for 60 seconds was able to induce a significant effect on cell proliferation showed within 24 hours.
Conclusion: Therefore, our results suggest that both 0.5 w and 5 w short-time laser irradiations stimulate osteoblasts proliferation *in vitro*.
Keywords: diode laser; biostimulation; osteoblasts; proliferation.

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In vitro cleaning efficacy of 4 interproximal brushes

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Background: According to the principle of ''action radius of plaque'' enunciated by Garant and Cho, plaque placed on the yuxtagingival surface has the highest impact on periodontal health. The aim of the study is to compare the cleaning efficacy of 4 interproximal brushes.
Material and methods: In a phantom that reproduces the anatomical conditions of access to the oral cavity, it was arranged a typodont with teeth and gum removal and was applied artificial plaque (AP).In the space between the first and second upper molar it was performed 3 vestibular inserts with each brush, and it was analyzed the area free of AP through a digital photo image software.We measured the area free of AP on the proximal surface and on a yuxtagingival band of 2 mm wide. This procedure was repeated a total of 30 times with each brush.
Results: On the proximal surface, the brushes with larger diameter (conical) obtained values of 44.2% (angled) and 42.4% (straight) of percentage of AP removed, significantly more effective than those of smaller diameter (cylindrical) 35.1% (angled) and 31.2% (straight). In the yuxtagingival band all brushes decreased their efficacy, 19.2% (straight) and 13.3% (angled) for conical brushes and 32.25% (angled) and 5.8% (straight) for cylindrical brushes.
Conclusions: According to the model proposed study, all brushes decreased its efficacy in the yuxtagingival band respect proximal surface.However; cylindrical angled brush is more effective in cleaning the yuxtagingival band.

111
Ref no: EUABS066892

Ultrastructural analysis of root surface alterations following flapless alveolar bone recontouring with Er: YAG laser

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Crown lengthening procedure is applied in the anterior region to improve aesthetics. Lasers can be used during this process to alter soft and hard tissues with a flapless approach. The aim of this study was to determine the optimum parameters of an Er:YAG laser and to observe affected root surfaces on different wavelengths (Hz) and power levels (mJ). Five extracted teeth with their alveolar bones intact on the root surfaces were collected. The Er: YAG laser was applied on the roots surfaces with eight different wavelengths and power levels. The tip of the laser was applied parallel to the root surface, simulating an actual bone recontouring procedure. Root surfaces were inspected by stereomicroscope. For all the different wavelengths and power levels, grooves have formed on root surfaces. The speed of the procedure increases with the power level. The highest power level (250 mJ; 10, 15, 20 Hz) was observed as the most destructive as grooves on root surfaces were increased in both number and scale. All power levels found to be effective for bone contouring. Time elapsed during the procedure was long for 160 and 180 mJ power settings, while 200 mJ for each evaluated frequency settings (10, 15, 20 Hz) was acceptable without significant grooving on the root surface. According to the results of this study, power and frequency settings (200 mJ: 10, 15, 20 Hz) of Er: YAG laser found to be the optimum choice for osseous bone recontouring with minimal depth of groove and smoother surfaces.

112
Ref no: EUABS066906

Study *in vitro* of repeated application of potassium oxalate in treatment of dentinal sensitivity

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Background: Dentinal sensitivity (DS) is a frequent problem in periodontal patients. Potassium oxalate (PO) has been used to treat DS, although it has showed little capability to resist the effect of washing by saliva and brushing. There is a new product that allows self-application by patient. This could provide cumulative effect on the capability to reduce dentinal permeability. The aim of this *in vitro* study was to analyze modification of

dentinal permeability produced by a product containing PO applied several times and to asses its resistance to the action of washing.
Materials and methods: PO was applied on 44 dentinal discs and introduced in a modified perfusion device based in Pashley system. Samples distribution: 4 samples-control acid etched, 16 discs-1 application of PO (8-washed and 8-no washed) and 24 with 2 applications (8-no washed, 8- washed 1 time and 8- twice). SEM was used to complement perfusion results.
Results and Discussion: PO reduced permeability of dentinal tubules in 40%. However, washing negatively affected dentinal permeability. Repeated application of PO didn't improve its capability. SEM supported previous results.
Conclusions: Our results agreed with previous studies, that PO is able to reduce dentinal permeability, but it does not resist washing. Several applications did not have summative effects on the capability of crystals to occlude tubules; but the possibility of repeated applications by patient could influence in clinical outcome.

113
Ref no: EUABS066847

Laser therapy in bisphosphonate associated osteonecrosis of the jaw (BP-ONJ): an *in vitro* study

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Introduction: BP-ONJ is an adverse side effect in patients receiving bisphosphonates due to osteoporosis or malignant diseases that only occurs in the jaws. Especially in patients with infected osteonecrosis therapy resistance has been described. A supportive therapy might be a stimulation of local soft tissue cells such as fibroblasts for a better wound closure by soft laser application.
Material and methods: Normal human dermal fibroblasts were cultivated in 24-well-plates. Next to a control the fibroblasts were incubated with four different bisphosphonates (clodronate, ibandronate, pamidronate and zoledronate) with a concentration of 50 μM. After 30 minutes the fibroblasts were treated with soft laser (λ = 670 nm) for 120 seconds. After 24 hours cell viability was tested with a MTT-test.
Results: All bisphosphonates had negative impact on cell viability. Compared to the bisphosphonate treated fibroblasts, the additionally with soft laser treated fibroblasts had a significant better viability. Bisphosphonate (BP) treated with BP only (%) BP and Laser (%) Clodronate 78, 26 96,85 Ibandronate 82, 78 97,47 Pamidronate 83,19 98,94 Zoledronate 61,98 76,92 Cell viability of fibroblasts in control set at 100%.
Discussion: The demonstrated positive effects of soft laser treatment on cell viability might be of importance in wound healing in patients with BP-ONJ. The next promising step would be the evaluation of this effect in an *in-vivo* study.

114
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Healing of bundle bone following immediate implant installation in tooth extractions sockets

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It was demonstrated that immediate implant installation do not prevented the buccal bone loss, moreover, it was claimed that the collapse of the ridge was due to the resorption of bundle bone following tooth extraction. In all the published studies was performed the surgical preparation of the implant site, moreover the % of bundle bone was never measured.
Objectives: To study the healing following tooth extraction and immediate implant installation with and without the preparation of the recipient site.
Methods: In the current experiment 8 beagle dogs were used. The mandibular premolars were extracted. In one side of the mandible immediate implant installation (n = 16) was performed without preparation of the recipient site (test) in the contralateral side the implants (n = 16) were inserted following the preparation of the recipient site (control). After 3 months of healing the animals were sacrificed and the mandibles were processed for ground section in buccal lingual direction.
Results: A buccal bone loss was 1.78 mm (test) and 1.95 mm (control). The bone implant contact was 68% and 65%. The percentage of bundle in direct contact with the implant surface was 35% in the test group and 5% in the control group ($P < 0.05$).
Conclusions: The present study revealed that bundle bone did not resorbed following tooth extraction and it was found in direct contact with the implant surface, therefore the biological mechanisms of bone loss is not related to the bundle bone.

115
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Increasing the width of attachement gingival using the collagen wound dressing

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Background: An adequate band of keratinized tissue was viewed as important to prevent future recession and maintain periodontal health. The purpose of this study was to evaluate the width of attached gingiva after apically repositioned flap (APF), APF combined with free gingival grafts (FGG), and APF combined with collagen wound dressing.
Methods: 6 beagle dogs, right and left maxillary canine areas were used (12 surgical sites). First group, only APF procedure was performed. Second group, APF combined with free gingival grafts (FGG) was performed. Third group, APF combined with Collatape® was performed.
Results: The measurement value was Probing depth, width of Keratinized gingiva, and width of attached gingiva. The comparison of the widths of the keratinized and attached gingiva before and after surgery showed that the differences were significant in each group ($P < 0.05$). APF combined with FGG group showed more attached gingiva than other groups (No significant difference). APF combined with Collatape® group showed similar attached gingiva gaining with APF only group. But, Collatape® controled bleeding and stabilized blood clots, and protected wound bed. And as if APF combined with FGG group, APF combined with Collatape® group also showed favorable physiologic appearance than APF only group.
Conclusion: APF, APF combined FGG, and APF combined with collagen wound dressing were useful procedure to gain the keratinized gingiva and attached gingiva.

116
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The effect of VEGF on endothelial cell differentiation from bone marrow stromal cell cultured on scaffolds

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Background: The angiogenesis is essential to most human life process including tissue development, regeneration, and repair.

Vascular endothelial growth factor shows enhance the vascularization of engineered tissue. In this study, we evaluated the potential of VEGF and bone marrow stromal cellto modulate the growth and differentiation activity of blood vessel precursors, endothelial cells on absorbable collagen membrane.

Methods: The dog bone marrow stromal cells (dBMSCs) were obtained from beagle dog. The dBMSCs were cultured in a medium containing Dulbecco's modified Eagle medium supplemented with 10% fetal bovine serum and 100ug/ml 1X Antibiotics with absorbable collagen scaffold at 37°C in humidified air with 5% CO_2. Human endothelial growth factor (hVEGF) was applied in experimental group. We evaluated the differentiation of endothelial cells on absorbable collagen scaffold by imunohistochemical study with CD31 and transmission electron microscope (TEM).

Results: In immunohistochemical study, the experimental groups show stronger immunoreactivity. And in TEM study, endothelial like cells are observed in experimental groups, but only dBMSCs are observed in control groups.

Discussion: The dBMSCs and hVEGF can enhance the growth and differentiation of endothelial cells in an in virtro model of angiogenesis. The VEGF is necessary for dBMSC to enhance EC survival and differentiation.

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Ref no: EUABS066177

Histomorphometric analysis of human periodontium-derived stem cell based bone regeneration in rat: primary results

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Introduction: In the present study we investigated the effect of human periodontium-derived stem cells (pdSCs) harvested from periodontal tissues on new bone formation in artificial periodontal defects in rat.

Materials and methods: Non-inflamed periodontal tissues were harvested and pdSCs were isolated, expanded in vitro and cultivated onto collagen sponges using an osteogenetic differentiation medium (ODM). Sponges containing predifferentiated pdSCs (test) and sponges without pdSCs (control) were transplanted into artificial periodontal defects in mandibular molars of 4 athymic nude rats. The rats were sacrificed at 8 weeks, 4–5 μm thick sections were stained (Azan) and histomorphometric analysis (ImageJ 1.410, NIH, USA) was performed in a defined region of interest (ROI). 4 slides per defect were analyzed and the percentage of new bone formation was calculated. Statistical analysis was performed using the Mann-Whitney-U-Test.

Results: The mean percentage of new bone formation in the test-group was 21.13% and in the control-group 50.15%. The differences between the test-and the control-group were statistically significant ($P < 0.0001$).

Conclusion: Within the limitations of this study, these primary results document no additional benefit of xenogenous transplantation of pdSCs on new bone formation in rat. Further large scale animal studies with autologous pdSCs transplantation in critical size defects are needed to prove the benefit of pdSCs in bone regeneration.

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PDGFB gene therapy accelerates oral implant osseointegration

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Human studies showed the importance of platelet-derived growth factor (PDGF) in tissue regeneration. Gene delivery strategies have been developed to optimize PDGF dose level and bioavailability in vivo.

Aim: To evaluate peri-implant osteogenesis, osseointegration and function dynamics after local PDGF-B gene delivery.

Methods: 180 post-extractive maxillary infrabony peri-implant defects (2.2 mm x 1 mm) were created in rats and treated with 2.5E10-11 PN/ml of recombinant adenoviral vectors encoding luciferase (AdLuc) or PDGF-B (AdPDGF-B), or 0.3 mg/ml PDGF-BB (rhPDGF-BB). Micro-computed tomography, back-scattered scanning electronic microscopy, biomechanical testing and histology were performed at 10, 14, 21 days after treatment.

Results: At 10 days in 2.5E11 PN/ml AdPDGF-B and rhPDGF-BB-treated sites analysis showed increased regenerated bone amount, mineralization and implant contact when compared to AdLuc ($P < 0.05$). At 10 and 14 days 2.5E10–11 PN/ml AdPDGF-B and rhPDGF-BB showed stronger mechanical resistance and stiffer interfacial bonding. rhPDGF-BB group showed significance compared to controls at both timepoints ($P < 0.05$). By 21 days, no significant differences were observed.

Conclusions: AdPDGF-B and rhPDGF-BB accelerate early peri-implant osteogenesis and osseointegration. PDGF-B gene delivery may offer optimized bioavailability and dose levels for regenerative therapy. This study was supported by the AO Foundation (Davos, Switzerland), ITI Foundation, and NIH/NIDCR DE13397.

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Ref no: EUABS066004

Influence of different implant primary stability on osseous healing time. Histomorphometric study in the rabbit

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Objective: Evaluate if different primary stabilities at implant installation, can influence in osseointegration healing time.

Material and methods: 32 submerged implants RBM surface (3.75 × 11.5 mm)were placed into the distal condile of each femur of 16 newzeland rabbits (2 implants per rabbit.16 test and 16 control).In control group to make the implant bony perforations the recommendations by the manufacturer were followed,using a 3.3 mm diameter drill as the last one prior to implant installation. In test group the same procedure was done but a 3.5 mm. drill was used as the final one. Therefore the difference of primary stability data was significant between both groups at day 0.The sacrifice of the animals was done at 2,4 and 8 weeks.Histomorfometric analysis (BIC) and ISQ values were registered at each sacrifice time.

Results: All the implants healed without complications.The ISQ values were statistically significant at 2 weeks of healing (control: 78 ± 3.74; test: 74 ± 3.94). However, at 4 and 8 weeks the results were very similar between groups. Histomorfometric results showed similar tendency, with a BIC % of 58.69 ± 10.68

for control group and 40.95 ± 7.78 for test group being this difference statistically significant. At 4 and 8 weeks interval the BIC % was very similar for both groups.
Conclusion: At 2 weeks interval, osseointegration healing time has been influenced by different primary stability at implant installation, being faster for the group with a higher primary stability.

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Human periodontium-derived stem cells (pdSCs) may give rise to tumorigenesis

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Background: Recent studies showed that special populations of stem cells reside in the periodontium and have the capacity to generate periodontal-like tissues. The aim of this study is to examine the *in vivo* effects of human periodontium-derived stem cells (pdSCs) when implanted in periodontal defects of rats.
Materials and methods: pdSCs were isolated during minimally-invasive periodontal surgery, expanded *in vitro* and re-suspended in an osteogenic differentiation medium. These cells were delivered onto collagen sponges and implanted into periodontal defects on the buccal cortex at the level of the distal root of the mandibular first molar in 17 immunodeficient rats. Using a split-mouth model, the right (test) sides received collagen with pdSCs and the left (control) sides received collagen without pdSCs. The rats were sacrificed at 2, 6 and 8 weeks postoperatively. One rat was killed without any surgical intervention and served as control. Descriptive histological and histomorphometric analysis of the sections were conducted.
Results: At the test sides, five rats showed reformation of periodontal ligament-like tissue, whereas six rats presented tumor initiations. Five rats died postoperatively. The histological screening of the tumors showed a type of anaplastic squamous epithelial-cell carcinoma.
Conclusion: The safety of using pdSCs should be further investigated, and more optimized controlled methods should be established when such cells are to be used.

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Ref no: EUABS065962

Space provision and bone regeneration – an experimental study in rabbit cancellous bone model

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Introduction: The aim of this study was to evaluate different bone grafts in bone regeneration: ABM/P-15 formulations and a demineralized rabbit allograft.

Materials and methods: 30 adult, male, rabbits were divided in four test groups and one positive control group (ABM/P-15 particulate). Critical size defects in the distal femur were filled with ABM/P-15 part. (Group I) and with ABM/P-15 carriers: carboxymethilcellulose and glycerol (Group II); sodium hyaluronate (Hy) hydrogel (Group III), and lyophilized plugs (Group IV). Additionally, demineralized bone allograft suspended in sodium Hy was used in Group V. Block sections were harvested at 2 and 4 weeks for histological processing.

Results: Group II presented a significant reduction in bone formation compared with other groups, in both evaluation periods. At 2 weeks, Group IV presented a significant increase in new bone formation compared with group I (control) ($P < 0.05$). Group III and V presented more new bone formation than group I, nevertheless there was no statistical difference ($P > 0.05$). At 4 weeks, there were no significant differences between groups III, IV, V and the control group ($P < 0.05$).

Conclusions: These results show the influence of different formulations of bone grafts in providing an adequate scaffold for the support of the regenerative process and emphasize the importance of three-dimensional distribution of particles and space provision in new bone formation, especially in early periods.

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Ref no: EUABS066043

Attachment and proliferation of human osteoblast-like cells on resorbable guided bone regeneration membranes (*in vitro* study)

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Background: Guided bone regeneration (GBR) utilizes membranes for alveolar ridge augmentation.

Aims: To compare the *in vitro* attachment and proliferation of human osteoblast-like cells (MG63) on GBR membranes.

Materials and methods: Five resorbable GBR membranes were used, Resolut Adapt LT (RALT), Biocollagen (BC), Bio-Gide (BG), OsseoGuard (OG), Demokritos (DEM). Sections of membranes were fixed to the bottom of wells. 4×10^3 cells were plated in each well either with membrane or without (control, CO). Duration of experiment was 24 hours (attachment assay) and 5 days (proliferation assay). All samples were triplicate. At the end of each assay the cell number/well (CN) was counted. Fold activation (FA), i.e. the quotient of CN at 5 days versus CN at 24 hours, was also calculated.

Results: At 24 hours CO showed the highest CN ($P = 0.008$ and $P = 0.001$ compared to BC and OG respectively). Among membranes, BG showed the highest CN ($P = 0.001$ compared to OG). OG showed the smallest CN ($P = 0.002$ and $P = 0.029$ compared to RALT and DEM respectively). At 5 days CO showed the highest CN ($P < 0.001$ compared to all membranes). Among membranes, BG showed the highest CN ($P = 0.003$ compared to RALT and BC; $P = 0.006$ compared to OG). All other differences were statistically non-significant. FA was highest for CO; among membranes, FA was BG > OG > DEM > RALT˜BC.

Discussion and conclusion: Membrane materials, *per se*, influence attachment and proliferation of bone cells and, therefore, could affect the outcomes of GBR.

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Effect of EMD and EMD fractions on lineage specification of human periodontal ligament cells

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Objectives: The periodontal ligament (PDL) may be a stem cell compartment which maintains the integrity of the periodontium. Enamel matrix derivative (EMD, active component of Emdogain®; Institut Straumann, Basel, Switzerland) has many diverse effects on PDL cells *in vitro* and actively promotes periodontal regeneration in vivo.EMD is composed mainly of different isoforms of amelogenin and also other protein components, and the objective of this study was to determine whether EMD and the EMD fractions A (20–25 kDa) and C (5 kDa) influence the differentiation of putative PDL stem cells.

Methods: Healthy human PDL cells were cultured with EMD, EMD fractions A and C and human recombinant (hr) amelogenin. Cells were grown in non-selective growth medium and semi-quantitative RT-PCR carried out to determine whether these proteins induce PDL cell differentiation into different lineages. PDL cells were also cultured in lineage-specific differentiation media to measure whether EMD and the fractions modulate PDL differentiation, using real-time PCR and staining markers of 'terminal differentiation'*in vitro*.

Conclusion: EMD-derived protein fraction A, and amelogenin, appeared to enhance osteogenic activity but down-regulate the adipogenic and chondrogenic pathways. In contrast, fraction C down-regulated osteogenic activity but up-regulated other lineage-specific genes and differentiation, suggesting that certain components of EMD promote the regeneration of periodontal tissue via the PDL stem cell compartment.

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Ref no: EUABS066119

Osteoblast functions on tinanium modified by bioactive antibacterial sulfonate groups

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Aim: The aim of this study was to determine the effect of immobilized, bioactive, sulfonate (S) groups on select osteoblast functions. S was chosen because they inhibit *S aureus* adhesion.

Materiel and methods: C.p. titanium 1 cm 2 squares were oxidized, coated with S groups, using radical polymerization, and characterized by FTIR and colorimetry. Fatal calvaria osteoblasts were seeded on unmodified, oxidized and S modified titanium, and cultured for up to 15 days. The number and morphology of adherent cells were evaluated after 1 and 4 hours. Cell proliferation, ALP activity, collagen type I, and mineralization, were evaluated by established methods.
Results: The number of adherent osteoblast and their morphology were similar on all three substrates tested after 1 and 4 hours. Cell proliferation for up to 15 days was also similar on the three substrates. ALP activity at 7 and 10 days of culture on S-modified titanium was significantly ($P < 0.01$) higher than that observed on oxidized and unmodified surfaces. The total area covered by calcium containing nodules areas on S modified titanium was significantly ($P < 0.01$) higher than that on oxidized and unmodified substrates.
Conclusion: These results show that titanium modified by S groups which inhibit bacteria adhesion promote osteoblast functions pertinent to new bone formation. These surfaces, therefore, can be used as coating on titanium dental implants to render them both bones compatible and able to prevent bacterial adhesion.

125
Ref no: EUABS066125

Bioactive glass and xenogenic hydroxyapatite-collagen composite graft materials in the regenerative treatment of degree 3 furcation defects

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There are no predictable data about the histological outcomes of regenerative periodontal treatment in degree 3 furcation defects (D_3Fs). This study investigated the regenerative potential of bioactive glass (BG) and xenogenic hydroxyapatite-collagen composite (XHC) graft materials in experimental D_3Fs in dogs. Chronic D_3Fs were performed at the mandibular 2nd, 3rd andd 4th premolar teeth of 3 dogs bilaterally. Commercially available BG and XHC were randomly placed on 3 right and left site defects in each dog following the surgical debridement procedures and reference notch placement. After 4 months of healing the animals were euthanized, histological sections were obtained by routine histologic processing and examined under light microscope. New attachment formation was observed in the 66.66% of BG and 33.33% of XHC defects. The amounts of defect fill, new bone and new cementum were higher in BG than those in XHC ($P < 0.05$). These results suggest that single usage of BG, compared to XHC, may have promising effects on the stimulation of periodontal regeneration in D_3Fs.

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N_2 and NaCl effect to the adhesion, proliferation and differentiation of periodontal ligament cells in sandblasted and acid etched titanium surfaces

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The objective of the study was to determine the effect of N2 gas and isotonic solution NACL modification in sandblasted and acid etched titanium surfaces (Slactive-Straumann®) to the initial adhesion, proliferation and osteoblastic differentiation of human periodontal ligament cells (hPDL). Implant surfaces were incubated in cultures of hPDL cells for 1, 3, 7, 12 and 30 days. Absolute numbers of viable hPDL cells attached to implant surface were calculated using Trypan Blue Exclusion Assay. Alkaline phosphatase and Osteocalcin were used as markers for osteoblastic cell differentiation. A colorimetric assay for the determination of alkaline phosphatase activity and a chemiluminescence immunoassay for the determination of osteocalcin were respectively applied. Initial attachment for hPDL cells (day 1) was not significantly higher in Slactive-Straumann® surfaces. hPDL cells proliferate on each different surface in a time dependent manner. For days 3, 12-hPDL cells proliferate in a significant higher rate on the Slactive-Straumann® surface when compared to control surfaces ($P < 0.001$). Alkaline phosphatase activity was found significantly higher in the Slactive-Straumann® for days 1, 7, 30. Although cells grown on all surfaces exhibited good adhesion, proliferation and differentiation potential, a clear differentiation profile was exhibited by the tested surface. Slactive-Straumann® surface revealed a unique long-term proliferation and differentiation capability.

127
Ref no: EUABS066077

Attachment of the cells derived from periodontal ligament to chemically modified Ti surfaces

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Background: Modification of Ti surfaces with various chemicals for promoting osteoblast attachment has been studied in the recent years. The aim of this study was to investigate the attachment of cells derived from periodontal ligament (PDL) to chemically modified Ti surfaces.
Methods: Mirror-like finished Ti disks were dipped in 3% H_2O_2 or 5M NaOH solution, followed by application of P-vinylbenzoic acid to introduce carboxyl groups on to the Ti surface. Human plasma fibronectin (pFN) was immobilized on the surface through peptide bond formation with dipping in the protein solution containing condensation agents. At different stages of the modification, the surface was characterized by X-ray photoelectron spectroscopy (XPS). PDL cells were cultured on the Ti disks, and number of attached cells on the disk was counted with a hemacytometer.
Results: The XPS spectra suggested that pFN was covalently immobilized on the Ti surface with the chemical modification method employed in this study. The number of attached cells was increased by approximately 100% with H_2O_2 or NaOH treatments, compared to the mirror-like surface. With the covalent immobilization of pFN, the number of attached cells was significantly increased by 100%, 67%, or 19% for the as-polished, H_2O_2-treated, or NaOH-treated Ti, respectively.
Conclusion: The chemical modifications employed in this study enhanced PDL cell attachment on the Ti disk, suggesting that this technique would be useful in bioactive Ti implants.

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Titanium-ceramic dental bionanomaterials

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One of the methods that allow the change of properties of Ti alloys is to the production of nanocomposite, which will exhibit the favorable mechanical properties of titanium and excellent biocompatibility and bioactivity of ceramics. Hybrid Ti-x vol% 45S5 Bioglass and Ti-x vol% SiO_2 bionanocomposites ($x = 0$, 3

and 10) were produced by the combination of mechanical alloying (MA) and powder metallurgical process. The average size of produced nanocomposites was about 30 nm. Reinforced by 45S5 Bioglass or SiO_2 particles, Vickers hardness of Ti-based nanocomposite is higher about two times from that of pure microcrystalline Ti. Additionally, the experimental results show that in Ringer's solution at 37°C, Ti-based nanocomposites have good corrosion resistance. For example, the Ti-10 vol% SiO_2 nanocomposite possesses higher corrosion resistance and thus higher corrosion current densities ($I_c = 3.74 \cdot 10^{-8}$ A/cm^2) than microcrystalline titanium ($I_c = 1.31 \cdot 10^{-5}$ A/cm^2). This is due to the structure refinement and the transformation into nanostructured material, achieved by successive mechanical alloying process. On the other hand, our results of *in vitro* studies show that these bionanocomposites have excellent biocompatibility and could integrate with bone. With regard to microcrystalline Ti it could help to obtain better dental implants with better mechanical properties and corrosion resistance.

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Ref no: EUABS066575

Qualitative evaluation of the histological response to an optimized hydroxyapatite – a preliminary study

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Aim: Evaluate the histological response, in a rabbit calvarial bilateral defect, to a synthetic hydroxyapatite.
Material and methods: In 6 New Zealand adult male rabbits, 12 bilateral calvarial bone defects were performed (8 mm). 3 rabbits with 5 defects filled with hydroxyapatite and 1 empty were euthanized at 2 weeks (Group 1). The other 3 were euthanized at 4 weeks (Group 2). Hydroxyapatite was obtained with a desired stoichiometric composition.Samples were processed with undecalcified technique.
Results: In group 1, the negative control had a discrete bone formation near the lateral margins of the defect. Hydroxyapatite had a new bone formation near the lateral margins and new trabeculae bridging between hydroxyapatite particles. Some were totally surrounded by new woven bone. Areas of new bone with a lamellar organization were found. In group 2, negative control had a more intensive new bone growth at the defect lateral margins. Hydroxyapatite showed thick bone trabeculae at the defect margins, with some particles incorporated in those trabeculae. These particles were in direct contact with immature bone, but new bone with lamellar architecture was also seen. Some of those particles were under a demineralization process by osteoclasts.
Conclusion: This model was appropriated to the purpose of this study. We could see new immature bone tissue surrounding the synthetic hydroxyapatite particles and a mature bone at a more distant level, more pronounced at the 4 week period.

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Ref no: EUABS067038

Effect of low concentration of tetracycline solution on collagen membrane biodegradation: a rat study

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Low concentration of tetracycline (ttc) (5 μg/ml) on cultured human osteoblasts showed a positive effect on alkaline phosphatase expression and mineralization while higher concentration seemed to inhibit these effects (Rompen 97). On the other hand, Zohar 2004 showed that soaking collagen membrane in a high concentration ttc (50 mg/ml) is useful to slow down membrane degradation. The aim of this study was to determine if lower concentration of ttc showing positive effects on cultured osteoblasts also prove to extend barrier effect of collagen membrane. Two 10 mm disks of collagen membranes (Biogide), were sutured together peripherally with a non resorbable (Isopore®) disk in between. These constructions were implanted subcutaneously on wistar rats after soaking (16 test) or not (16 control) in a 100 μg/ml doxycycline solution. The animals were sacrificed at 2 days, 2, 4, 8 and 16 weeks. Following parameters were evaluated: membrane thickness, penetrating cells, and vascularisation. No foreign body reactions and good tissue integration were found. No significant differences in terms of membrane thickness could be demonstrated between the 2 groups. Furthermore, membrane thickness stayed stable from 0 to 4 weeks and decreased drastically between 4 and 8 weeks.
Conclusion: In this model, the barrier function related to membrane thickness, seems to be effective up to 4 weeks. However, low concentration of ttc solution was not effective to slow down collagen membrane biodegradation.

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Ref no: EUABS065268

Cleaning effectiveness of 10 instruments on acid etched implant surface

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This *in vitro* study aimed to evaluate the effectivenesses and effects of 10 implant cleaning instruments on an acid etched implant surface. A layer of *streptococcus mutans* was cultivated on titanium discs with acid etched implant surfaces ($n = 50$, $R_A = 0.57$ μm). Groups of 5 discs each were cleaned with the following 7 instruments: carbon (MC) and plastic curettes (MP), sonic (ST) and ultrasonic driven tip (UT), prophylaxis brush (PB), airpolishing powder (AP) and VectorSystem (VS) and 3 antibacterial devices: ozone (OZ), Er-YAG laser (LS) and photodynamic desinfection (PD). Specimens were stained and analysed lightmicroscopically (200x). 4 representative regions were photographed. The relative surface areas with remaining bacteria were determined computer-assisted. Statistical analysis was carried out (ANOVA, Scheffé-correction, $a < 0.05$). Effects on the surface structure were assessed on REM pictures. LS (54.3% ± 25.9%) presented highly significantly more remaining bacteria than all other instruments ($P < 0.001$). No significant differences were found between the other 9 instruments and devices ($P > 0.05$). Cleaning effectiveness of MP, UT, VS and PD ranged on a level of about 94% and those of MC, PB and OZ were slightly higher at a level of about 96%. ST (97.5% ± 2.6%) and AP (97.8% ± 2.0%) offered best cleaning results. Surface alterations were observed with ST, UT, VS and LS. The effectiveness of 9 of the 10 tested implant cleaning instruments and devices were satisfying on acid etched implant surfaces.

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Ref no: EUABS065323

The effect of FCS and EMD on the proliferation and vitality of human periodontal ligament stem cells

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Objectives: Recent studies have revealed the presence of stem cells in tissues of dental origin. Our objective was to establish an

in vitro model system to investigate the effect of enamel matrix derivatives (EMD) used in periodontal regenerative surgery on the stem cells of human PDL.
Methods: Primary cell cultures were prepared from human periodontal ligament cells and the clonogenic progenitor cells were to be identified. After the PDL has been removed from the roots of extracted wisdom teeth the extracellular matrix was enzymatically degraded to obtain isolated cells for culturing. The effects of EMD (Emdogain) and also foetal calf serum FCS on cell vitality of the cultures was assessed by MTT-assay. Cell populations expressing STRO-1 mesenchymal, c-kit embryonic and CD34 haematopoetic stem cell markers were identified by FACS-analysis.
Results: Primary cell cultures have been successfully established from human periodontal ligament. The primary cultures were maintained through multiple passages. The PDL cultures contained cells capable of colony-formation and cells expressing STRO-1, c-kit and CD-34. The proliferation rate of cultured cells was enhanced by both FCS and EMD. The EMD showed a marked chemotactic effect on PDL cells.
Conclusion: These findings present a novel *in vitro* model to investigate the effect of EMD on the differentiation and proliferation of PDL derived cells potentially capable of periodontal regeneration.

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Ref no: EUABS065128

Novel scaffold loaded with BMP-6 for periodontal and bone tissue engineering

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Introduction: Tissue engineering approaches, using cell seeded scaffolds containing stimulatory growth factors, can be useful to overcome the difficulties encountered at periodontal and bone regeneration procedures.
Aim: The aim of this study is to investigate a novel chitosan based scaffold loaded with BMP-6 using preosteoblastic cells.
Materials and methods: Chitosan scaffolds were fabricated using freeze-drying method. MC3T3-E1 cells were seeded into unloaded chitosan scaffolds, 100 ng BMP-6 loaded chitosan scaffolds and 100 ng BMP-6 free in culture medium. Cell proliferation was assessed using MTT assays between days 2–16. Levels of ALP and OCN from cell cultures were evaluated at days 7–28. Cell and tissue morphology inside the cell scaffolds were determined using SEM images obtained at days 7, 21 and 28. Biomineralization inside the scaffolds were determined using von Kossa staining.
Results: There were no major differences between the cell counts of the groups. Both levels of ALP and OCN were higher in BMP-6 loaded chitosan scaffold group compared to chitosan group and BMP-6 free in medium group. Observation of SEM images revealed that formation of extracellular matrix synthesis in BMP-6 loaded chitosan scaffolds was both accelerated and enhanced compared to other groups.
Conclusions: The results of this study show BMP-6 loaded chitosan scaffold may be useful vehicle for periodontal and bone regeneration applications. TUBITAK SBAG (Grant no: 105S375)

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Bone morphogenic protein 7 and platelet derived growth factor-bb their role in proliferation and differentiation of human osteoblast cells

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Introduction: This preliminary study examined the role of bone morphogenetic protein 7 and Platelet derived growth factor-BB for their potential to enhance bone cell turnover and as a promoter of bone regeneration.
Method: Variable doses of BMP-7 and PDGF-BB were investigated for optimal dose. Primary human alveolar osteoblast cells were seeded at a density of 1 x 10^5 cells/ml in Dulbecco's modified medium (DMEM, 10% foetal calf serum) for the dose response studies. On day 2, serum-free media was added and cells incubated for a further 24 hours to induce quiescence. Subsequently, a dose range of 0–25 ng/ml BMP-7 and PDGF-BB was investigated. To determine the effect of these growth factors on cell proliferation, DNA synthesis was estimated by using the Hoechst dye H33258. Increase in cell numbers was monitored, cell differentiation was examined by measuring alkaline phosphatase activity, a phenotypic marker for osteoblasts.
Results: When BMP-7 at 20 ng/ml and PDFG-BB at 15 ng/ml were added they significantly ($P < 0.1$) enhanced cell proliferation as confirmed by both cell counts and DNA synthesis. Alkaline phosphatase however, was significantly ($P < 0.1$) increased in the presence of BMP-7 compared to PDGF-BB at the same concentration. This preliminary study has indicated that these two factors provide biochemical cues with the potential to induce cell differentiation, thus providing local mechanisms for controlling cell. Proliferation and enhance bone repair and regeneration.

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Osteocalcin and osteonectin expression during *de novo* bone formation using double-application of platelet-rich plasma in rabbits

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Platelet-rich plasma (PRP) is considered to enhance bone formation especially at early stages of wound healing, depending on the limited and short life-span of platelets and growth factors.Osteonectin (ON) and osteocalcin (OC) are markers of bone formation.The aim of this study was to evaluate efficacy of double-application of PRP (DA-PRP) on bone healing in a rabbit cranial defect model by examining OC and ON expressions at defect sites.Twenty-eight adult rabbits,each had two surgically prepared cranial defects,were randomly divided into six treatment groups. Defects ($n = 56$) were treated with single-application of PRP (SA-PRP) ($n = 10$), SA-PRP + beta-tricalcium phosphate (b-TCP) ($n = 10$), DA-PRP ($n = 8$), DA-PRP + b-TCP ($n = 8$), b-TCP ($n = 10$) and empty control (C) ($n = 10$). Animals were sacrificed at 30 days postoperatively and samples were immunohistochemically examined for OC and ON.The ratio of immunostained bone matrix area to defect area was calculated by image-analyzer software.The ON% and OC% were 20.53% and 8.48% for group C,30.64% and 45.08% for SA-PRP,25.76% and 9.68% for DA-PRP,51.52% and 38.94% for b-TCP,49.00% and 44.44% for SA-PRP + b-TCP and 60.15% and 52.91% for DA-PRP + b-TCP respectively. In this study, highest ON

and OC expressions were observed at sites treated with DA-PRP + b-TCP.The present results suggest that DA-PRP + b-TCP might have potential to enhance bone formation. This study was supported by Gazi Uni. Research Foundation (03/2006-32).

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Culture of human gingival fibroblasts on different biodegradable membranes

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The aim of this study was to investigate adhesion, cell survival and proliferation of gingival fibroblasts on different membranes for potential clinical periodontal applications. For this purpose 3 different biodegradable membranes (Collagen AT, Surederm, Biomesh) were used. Membranes were inserted to 48-well plates and then cells were plated on the membranes at the density of $50.000/cm^2$. Adhesion of cells was examined with scanning electron and confocal microscopy. Cell survival was evaluated with MTT assay on day 10 and cells were counted on days 3, 5, 10 and 14 for proliferation experiments. The lowest value of cell survival was observed in Biomesh group on day 10. While there was no difference between the groups on day 3 regarding proliferation of gingival fibroblasts, apparent reduction was observed in Biomesh group on days 5, 10 and 14. Cell proliferation was almost similar in Collagen AT and Surederm groups. Confocal and scanning electron microscopy confirms the results of proliferation and MTT assays. These data reveal that seeding favors the adherence and proliferation of primary gingival fibroblasts on collagen-based membrane (Collagen AT). These results may provide valuable information to select these biodegradable materials in the treatment of gingival recession (This study was supported by TÜBITAK SBAG-3836/107S379).

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The prophilaxy of dental supporting tissues by a F.E.M. analysis of the stresses induced by post and core systems

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The aim of this analysis was to determine the influence of post-and-core systems on stress distribution into dental supporting tissues.

Material and Method: The study software (Algor) performed stress analysis of the dental structures by Finite Element Method. There were created two 3D models representing 1 intact upper incisor and 1 reconstructed upper incisor with different kind of post (titanium, carbon fiber, glass fiber and ceramic posts). The simulated compressive load was 30daN and applied under an angle of 45 degrees on the palatal surface of the crown. The software computed the stresses for each model, comparing maximum intensity observed, localization and concentration into the root and the post.

Results: The von Misses stresses recorded in the root reconstructed with carbon and glass fiber posts are closer to that recorded in a root without a post, compared with the other posts studied. The titanium post produces the greatest stress concentration at the post-dentin interface and the ceramic post behavior was similar with the metallic post.

Conclusion: The metallic post produces the greatest stress concentration at the post-dentin interface, this behavior explaining the high frequency of the vertical root fractures recorded in vivo. The fiber reinforced posts showed the lowest peak stresses inside the root and are more favorable for the longevity of the tooth. This means that fiber reinforced posts are the best choice for reconstruct an endodontically treated tooth.

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Ref no: EUABS065805

In vitro evaluation of a novel modified silk-membrane for GTR applications

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Objectives: Different types of resorbable/nonresorbable membranes have been used for guided tissue regeneration (GTR). An alternative could be the use of silk-membranes. During manufacturing individual modifications are possible, there are no infection risks and mechanical characteristics are excellent. In this study we examined the binding of hydroxyapatite (HA) to silk-membranes and evaluated the effects on cell proliferation/differentiation *in vitro*.

Methods: Uncoated silk-membranes (Spintec Engineering GmbH) were evaluated regarding their effects on proliferation rate of L929 fibroblasts and dysplastic human oral keratinocytes (DOK). Determining the release of lactate dehydrogenase (LDH), possible cytotoxic effects were examined. Thereafter, silk-membranes were coated with HA documented by scanning electron microscopy and energy dispersive X-ray and effects on differentiation of rat mesenchymal stem cells (MSCs) were evaluated. During 7 days vitality and osteogenic differentiation of MSCs were investigated.

Results: No negative effects of the silk-membranes on vitality/proliferation of L929 cells and DOK cells were observed for 22 days. In combination with HA the silk-membranes showed osteoinductive effects on rat mesenchymal stem cells.

Conclusions: This *in vitro* study demonstrates the biocompatibility of silk-membranes. Individualization with HA seems to have an osteoinductive effect on MSCs. Results suggest that silk-membranes may be useful for GTR applications.

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Comparative study on activation of osteoblast-like cells and new bone formation of the anorganic bone mineral coated with the T-CAM and pepgen P-15

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Recently, we reported that the cell adhesion molecule (Tetra-Cell Adhesion Molecule, T-CAM), which is recombinant peptides markedly enhanced the differentiation of osteoblast-like cells grown on anorganic bone mineral (ABM). The aim of this study was to evaluate the cellular activities of osteoblast-like cell and new bone formation to ABM coated with T-CAM compare to those of PepGen P-15™. The experimental groups were divided as follows; ABM, ABM/T-CAM and ABM/P-15. MTT assay for cell viability, gene expression for bone matrix protein and stain with Alizarin Red for mineralization were performed. In vivo, the rabbit calvarial defects were filled with those graft materials and histologic evaluation was performed at 4 weeks after surgery. The MTT assay indicated that cellular viability was significantly increased on ABM/T-CAM and ABM/P-15 groups compared to ABM group at

4 and 7 day ($P < 0.01$). Expression of ALP mRNA was also similar in all groups. The highest expression of osteopontin mRNA was observed in the group cultured with ABM/P-15, followed by those with ABM/T-CAM and ABM. A halo of red stain is wider and denser around ABM/T-CAM and ABM/P-15 particle than around ABM particle. In vivo study, ABM/T-CAM seemed to have similar bone forming bioactivity comparing with ABM/P-15. In conclusion, ABM/T-CAM, which seemed to have similar bone forming activity compared with ABM/P-15, was considered to serve as effective tissue-engineered bone graft material.

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Anatase surface modification of titanium implants offers clinical potential

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Introduction: The anatase-modification of titaniumdioxide allows photoswitching of coated titanium implants from hydrophobic to very hydrophilic. Furthermore, the photocatalytic activity of anatase offers the potential for biofilm degradation. We investigated reaction kinetics for photoswitching and photodegradation of a model protein to develop irradiation regimes for potential clinical applications.
Methods: Photoswitching was analyzed by contact angle measurements, photocatalysis by quartz crystal microbalance QCM-D. UV light (382 nm, 25 mW/cm^2) was generated by UVACube 100. HSA was adsorbed to the anatase surface by incubation with 1 mg HSA/ml PBS (pH 7) for 90 minutes.
Results: Contact angle analysis confirmed anatase photoswitching from $\theta = 56°$ to superhydrophilicity $< 5°$ by 2.2 J/cm^2 UV. After 3 h storage in darkness, contact angles increased from superhydrophilicity to $\theta = 10°$ and after 12 hour to $\theta = 30°$, indicating clinically relevant long-lasting hydrophilization. Rehydrophobization was caused by carbon contaminations, as shown by ESCA. QCM-D demonstrated photocatalytic degradation of protein layers. HSA adsorbed to anatase (adsorbed mass 960 ng/cm^2) was completely decomposed by 3 UV-pulses of 4.5 J/cm^2, resp.
Conclusion: The results encourage the clinical application of anatase coatings for i) chairside activation of implant surfaces by UV-hydrophilization immediately before implantation and ii) photocatalytic degradation of contaminations and biofilms *in situ*.

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Ref no: EUABS064992

Ridge augmentation of atrophic posterior mandible with inlay bone grafts: autologous iliac versus bovine anorganic bone: a histological analysis

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Objectives: To compare histological results after inlay grafting procedures performed bilaterally in posterior atrophic mandibles for implant-borne prosthetic rehabilitation, using autologous iliac bone block and inorganic bovine bone block (Bio-Oss®).
Materials and methods: Ten partially edentulous patients with mandibular vertical deficit posteriorly to the mental foramen (range of residual bone height: 5–7 mm) underwent bilateral inlay bone grafting procedures with the use of autologous bone block (iliac crest) on one side and inorganic bovine bone block (Bio-Oss) contralaterally. The block-grafts were fitted between the coronal transport fragment and the basal bone and covered with a resorbable membrane. Four months later, at time of implant insertion; a bone specimen was taken for histological evaluation on both sides.
Results: Histological analysis revealed for both sides that grafted bone was lined by newly-formed bone with no gaps at the interface. Wide osteocyte lacunae were observed proximal and distal to the interface. No chronic inflammatory cell infiltrate or multinucleated giant cells and foreign body reaction cells were present around the graft or at the bone interface. Many osteoblasts were observed in the process of depositing osteoid matrix.
Conclusions: The use of inorganic bovine bone block in inlay technique is comparable to autogenous grafts and allows overcoming the risks and morbidity related to iliac bone harvesting.

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Ref no: EUABS065009

Neoangiogenesis quantification, bone formation, and clinics parameters influence in composite grafts biopsies from maxillar sinus augmentation

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Our aim was to evaluate vessels microdensity, bone formation and their relation with clinical characteristics and patient habits. 45 sinus elevations with delayed implant placement were performed in 25 consecutive patients. A composite bone graft consisting in 1:1 autologous cortical bone and anorganic bovine bone was used in all cases. Cores biopsies were obtained to histologic, histomorphometric and immunohistochemistry analysis 6 months later. 10 control biopsies were taken from posterior maxillary pristine bone. Biopsies from sinus augmentation presented significant remodeling activities in comparison with pristine bone with significant increase of osteoid lines. Histomorphometry revealed 43.81 ± 17.1% vital bone, 40.22 ± 16.5% connective tissue and 41.55 ± 27.7 remaining ABB particles. Vascular formation was analyzed in the three different tisular compartments. Immunohistochemistry showed 99.53 ± 61.92 positive CD34 vessels per mm2 in graft tissue and 31.52 ± 13.69 per mm^2 in native tissue with statistical significance ($P = 0.001$ Student t test). Greater connective tissue was found in relation with vessels microdensity in graft ($r = 0.482$, $P = 0.0001$, Pearson test). Angiogenesis and revascularization processes in relation with this composite bone graft indicate that this material can be considered an ideal composite graft that can be modulated by clinical parameters and habits such as periodontal diseases, edentulism, tobacco or alcohol consuming.

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Osteoblast proliferation and characterization on silicon surfaces with different roughness and hydrophobicity

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Cell adhesion to artificial materials and its proliferation and differentiation are governed by surface properties such as wettability, roughness, surface charge, chemical functionalities, and cells. Moreover, biomaterial surfaces usually possess a high degree of interfacial heterogeneity. Our aim was to analyze osteoblasts morphology and their proliferation on silica surfaces regarding on roughness and hydrophobic degrees. To avoid ambiguous influences that may cause the presence of multiple properties, different roughnesses were created by chemical etching in caustic solutions, while hydrophilic surface was turned into hydrophobic

by methylation of oxidized silicon surfaces. Two simple functional groups (–OH and –CH3) are responsible of initial cell adhesion in our study. ADSA and AFM measurements confirmed different roughness and wettability on each samples group. Lineal correlation between hydrophobicity and osteoblasts proliferation was observed. SEM characterization of cell cultures showed higher spreading, proliferation and dendritic extensions on hydrophobic surfaces. Our results also support that cell morphology on roughest silicon surfaces demonstrates a cuboidal shape with dendritic extensions, according to a more differentiated osteoblast. It can be concluded that nanometer roughness may play an important role on cell response but less important than hydrophobicity by means of CH3 terminal groups addition to silicon surfaces.

144
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Bacterial response to different Cp-Ti surfaces

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Good osteointegration and the preservation of supportive tissues play an important role for the success of these treatments. A localized inflammation and persistent infections might conduct the failure of these devices due to lack of soft/hard tissue–implant surface interaction. The inflammation is usually associated with bacteria colonization on the prosthetic surface or immunology reaction due to release of cp-Ti particles into gingival tissue. In this preliminary work we evaluate the cp-Ti surface-bacteria interaction. The quantification of bacteria attachment was done with two normal inhabitants of the mouth: *S. sanguinis* (CECT 480) and *L. salivarius* (CECT 4063). Cp-Ti discs were incubated with bacteria broth. New bacteria suspension was seeded on solid medium (MRS for *L. salivarius* and Todd-Hewitt for *S. sanguinis*), incubated for 48 hours at 37ordm;C and finally the number of colonies was counted. At the same time the pH variations during bacteria growth phase was measured. This study has demonstrated the influence of roughness and particles chemistry on initial bacteria attachment. The results support our hypothesis that the best implant surface must have roughness of 2–4 μm (Ra). Rough Ti-surfaces obtained with Al-particles show the best bacteria response, favoring the adhesion of soft tissue onto implant surface. In addition, bacteria metabolism causes Ti-particle release, which might be associated with initial inflammation of the peri-implantitis.

145
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Influence of the surface treatment for titanium dental implant in bone attachment using mechanical and histological tests

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The aim of this work was to study the effect of surface treatment on bone attachment of cylinder-shape titanium implants. The implants studied were acid-etching, blasted with Al_2O_3 particles of 450–600 mm, and blasted with thermo-chemical treatment in order to achieve apatite coating on the roughness of the dental implants. One group had no further surface treatment (as-received –machined-). The surface topography of the implant specimens was examined by Environmental Scanning Electron Microscope (ESEM) and by confocal laser scanner for a numeric evaluation of S_a, S_t and S_{dr}. The implants were placed into the mandibular bone of 6 minipigs. After 4 and 6 weeks healing, the attachments of bone to implants were examined using a tensile test analysis. The results support observations from histological studies realised in dental implants with the different surface treatments. The optimal surface at 4 weeks was the bioactive cylinders (Blasted + thermo-chemical treatment) and for 6 weeks the blasted surface reached at the bioactive implants. The bone attachment values lowest were the acid-etched and the control implants. Retention values of the different types of implants.

146
Ref no: EUABS064958

Proliferation and expression of angiogenesis gene of HUVECs in response to different titanium surfaces

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Aims: To investigate the influence of titanium (Ti) surfaces with different smoothness and wettability on the proliferation and angiogenesis-related gene expression of human umbilical vein endothelial cells (HUVECs).
Materials and methods: Four kinds of commercial pure titanium surface were used in this study: polished (P) surfaces, pickled (PT) surfaces, hydrophilic modified polished (modP) surfaces and hydrophilic modified pickled (modPT) surfaces. The proliferation of HUVECs grown on different surfaces was measured with the cell counting kit-8 (CCK-8) assay. Gene expression of von Willebrand factor (vWF), thrombomodulin (TM), endothelial-cell-protein-C-receptor (EPCR), intercellular adhesion molecule-1 (ICAM-1) and endothelial leucocyte adhesion molecule-1 (E-selectin) were detected by real-time PCR.
Results: The proliferation of HUVECs was highest on PT surfaces, followed by P surfaces, and lowest on modP and modPT surfaces. The gene of angiogenesis related cytokines were highly expressed on PT surfaces in comparing to modPT surfaces.
Conclusion: The present study demonstrates that the hydrophilic property of Ti surfaces with either high or low smooth degree might inhibit the proliferation of HUVECs and down-regulate its gene expression of functional cytokines *in vitro*.

147
Ref no: EUABS064781

Evaluation of the long-term results of rat cranial bone repair using a particular xenograft

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The aim of present study was to detect the effects of a xenograft (Unilab Surgibone) on bone-building in experimentally-created parietal bone defects in rats. Standardized parietal bone defects were created in 16 rats and in each of them had a circular morphology, 6 mm in diameter. The right defect sites were filled with porous particle material and the left site was used as control. After 3rd, 6th and 12th months, rats were sacrificed and tissue samples obtained from related site of the cranium. Subsequently, histological sections were taken and stained with different stains for evaluation under light microscope. The rate of bone formation was assessed using a semi-quantitative method. The results have shown that dense collagenous tissue was observed in the control area during the third month, whereas xenograft particles

were surrounded by fibrous tissue layer at the implantation site. Osteoclast-like cells were also observed. There was also no significant bone repair in another observation periods. It can be concluded that the material utilized proved no evidence of resorption, and does not enhance bone formation. However, it seems biocompatible, osteoconductive, and could be proposed as a beneficial material for filling osseous defects in clinical practice.

148
Ref no: EUABS064762

Straumann bone ceramic versus bio-oss: a histomorphometrical and histological animal study

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Background and aim: Although autogenous bone grafts are considered as gold standard in bone regeneration, some limitations do exist. In this regard, synthetic bone substitutes are available to overcome these limitations.
Purpose: The present study aimed to compare osteogenic properties of Straumann Bone Ceramic (a kind of biphasic calcium phosphate ceramic) and bovine bone mineral (Bio-Oss).
Materials and methods: Included were twelve rabbits and four 6.5 mm symmetrical defects were prepared on the calvarium of each. Three sites were filled with Bio-Oss, small (S-SBC) and large (L-SBC) particle Straumann Bone Ceramic, and the fourth was left empty as a control site. After 4 and 8 weeks, histological and histomorphometrical examinations were performed and the obtained data were analyzed by Friedman, Wilcoxon, and Multiple Comparison Mann–Whitney U tests.
Results: There were no statistically significant differences in the amount of bone fill between the four groups. L-SBC showed more inflammation and foreign body reaction than the other groups.
Conclusion: Although there were no statistically significant differences between the groups, further studies on the issue seem necessary.
Keywords: bone graft, bovine bone mineral, biphasic calcium phosphate ceramic and histomorphometry.

149
Ref no: EUABS064733

Implant possibilities for patients with metal intolerance

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Implantology has wide range of use nowadays. One of them is handicapped patients with higher reaction or intolerance to metals. This reality concerned to pure titanium or titanium alloy unfortunatelly. First domain which leads to removal of metal, titanium is cladding of implant surface in microscopic layer. There is possibility of coating by Physical vzpour deposition (PVD). Due to this method is possiblity to non-influence the surface of the implant. It means that the surface made by sanding or etching is not changed. Its thickness is 1.6–1.7 ? m and in multilayer 4 ?m. By this point of view it is comparing with the ceramic and avoiding loosing the ionts from material where it is dashed onto. The example is nitrid zirconium. Second domain is making the alloy, which has different attribute like pure metal material. We have these biocompatible elements nowadays: Ti, Zr, Nb, Ta. And from this group arise?-alloy, which is compilated by Ti, Nb and Ta. It has both good mechanic-physic feature and is full biocompatibile.

150
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Effect of fluoride in the electric potential of titanium implants coupled to a noble metal alloy

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Background: The titanium implants can be coupled to many restorative alloys. The noble metal alloys generally reacts as cathode, whereas titanium remains as anode. When Ti works as anode, can be affected by galvanic corrosion. As fluoride ions can degrade the protective oxide layer of Ti, this ions may start Ti corrosion. The aim of this study is to know the electric potential of Ti-implant in artificial saliva alone and coupled to a gold alloy and the changes in potentials with and without presence of fluoride ions.
Materials and methods: The sample (n = 20) of Ti dental implants (Microdent System) (12 mm length/ 3.75 mm diameter) were measured alone and coupled with gold alloy; first in saliva and later in saliva with 0,1% fluoride. Both solutions were artificial saliva (pH = 6.6; 37 + 0.5ordm; C). The measurement device is composed by one electronic redox-potential meter, one periodontal probe and one referential electrode.
Results: The mean potentials of Ti-implants were 367 mV; and 360 mV with fluoride. The Ti-implant/gold alloy couple has electric potential of 174 mV; and 203 mV in fluoride solution. There isńt significant difference in the Ti-implant potentials in solutions containing or not fluoride. We found significant differences in the potentials of gold alloy/Ti-implant couples in solutions with and without fluoride ions.
Conclusion: The addition of fluoride ions in the solution has more effect in the potential of titanium when is coupled to a gold alloy.

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Ref no: EUABS064567

New microstructured titanium and bioactive coatings improve soft tissue interaction with dental implants

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Background: Dental implants must interface with 3 types of cells: epithelial cells, fibroblasts and osteoblasts. We investigated the possibility of improving titanium implants with a focus on adhesion to the soft tissues.
Material and methods: Porous titanium was used as a new material to create a 3 dimensional surface able to seal the implant/soft tissues interface. Chemical modifications were introduced by functionalized polyelectrolyte multilayers films in order to get a bioactive material with enhanced cell-adhesion properties. Functionalization was provided by a laminin-5 derived peptide. Biological properties of this bioactive material were investigated by epithelial cells adhesion/proliferation assays and the formation of adhesion structures.
Results: Porous titanium showed good cell adhesion properties but the colonization of the material was improved by the coating with laminin-5 functionalized films. We observed focal contact formation on cross-linked films, reflecting a strong cell anchorage on the substrate. Very interestingly, epithelial cells adhered to

films with laminin-5 peptide via hemidesmosomes, which are adhesion structures involved in the adhesion of gingival soft tissues on the tooth surface.
Conclusion: The increased epithelial cell adhesion and hemidesmosome formation on laminin-5 peptide-coated porous titanium indicate an enhanced integration of the tissue and thus predict significant utility of this molecule for long-term implant stabilization.

152
Ref no: EUABS064694

In vitro analysis of the behaviour of human osteoblasts cultured on different hydroxyapatite-based biomaterials

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Background: Among bone substitutes, hydroxyapatite (HA) has been used as graft material and scaffold. HA is major bone and dental mineral component. It can promote bone regeneration. Cells culture models are used as "*in vitro*" approach to investigate tissue–biomaterial interactions, but current experiences and literature suggest caution in drawing predictable and uniform conclusion from these models.
Aim: In order to better characterize HA biomaterials and analyze the variability of cell sources influencing responses to different biomaterials, human primary osteoblasts (hOBs) recruited from bone particulate during oral surgery and 2 human osteosarcoma cell lines were tested. Cells were exposed to HA biomaterials (SINTlife™FIN-CERAMICA, IT; Bio-Oss™ Geistlich, CH; Biostite™GABA Vebas, IT).
Materials and methods: Runx2, Estrogen Receptor alpha (ERα) expression and alkaline phosphatase activity (ALP) were measured as osteoblastic differentiation markers. Cells viability was evaluated with MTT assay. SEM analysis was performed on biomaterial-treated cells.
Discussion and Conclusion: All HA biomaterials didn't affect cells morphology and viability, whereas only presence of Biostite™ improved cells adhesion, growth and differentiation. Adhesion and spreading of hOBs on Biostite™ were the same showed by cell lines. These results have important implications for both tissue-engineered bone grafts and enhancement of HA implants performance, to develop new therapies and tissues substitutes.

153
Ref no: EUABS063823

Corrosion pattern of titanium in fluorides and chlorexidine antiseptics

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Objectives: Antiseptics at acid pH could make titanium (Ti) susceptible to corrosion. Corrosion pattern of Ti disks in 5 electrolytic solutions: Fusayama artificial saliva (Fas), ammine/stannous fluoride (Am-SnF2), 0.2% Chlorexidine (CHX), Fas with 20% Am-SnF2, and Fas with 20% CHX was evaluated.
Methods: Open circuit potential was determined by dipping 15 disks for 24 hours in an electrochemical cell with the solutions, potential changes were determined (Ecorr). Examination by SEM was performed. Citotoxicity of the disks was determined through 72 hours direct contact with fibroblasts. Activity of succinate-deidrogenasy (SD) was evaluated. Mean and standard deviation of all values were calculated. ANOVA test was used to assess significant differences ($P = 0.05$).
Results: ANOVA test showed a significant difference of Ecorr values for the 5 solutions ($P < 0.001$) with highest values for CHX (-87.6 mV), intermediate for Am-SnF2 (-81 mV) and lowest for Fass (-37.6 mV). SEM analysis showed a localized corrosion only for CHX. Fibroblasts grew in monolayer on Ti, no evidence of cell damage was detected. No significant difference of SD fibroblast activity on Ti ($P = 0.90$) was observed.
Conclusions: Ti surface do not form cytotoxic products of corrosion. All the specimens maintained biocompatibility When considering potential corrosive range in oral cavity, Ti showed an excellent behaviour on both antiseptics evaluated, however polarization curve in CHX showed a localized corrosion.

154
Ref no: EUABS063867

Implantation of PDL stemcells.in the rabbit calvarium (regeneration and compair)

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Bone marrow mesenchymal stem cells were isolated and cultured from 10 neuzeland white rabbit and PDLSCs were isolated and cultured from PDL of each rabbit and expanded *in vitro*. Rabbit BMSCs and PDLSCs were stained with (CD44, CD90, CD34). PDLSCs were cultured using standard conditions conductive for osteogenic differentiation then five equal cranial bone defects were created and immediately grafted with2×10 of PDLSCs with collagen gel (type I) and collagen membrane, 2×10 of BMSCs with collagen gel and collagen membrane, 2×10 preosteoblast with collagen gel and collagen membrane, collagen gel and collagen membrane with no treatment as control. The defect was evaluated with histomorphometric analysis performed at 4 weeks.
Results: The results showed a significant increase in histomorphometric bone area in cell implanted defects as compared with the control. Four weeks after transplantation, the bony defects were almost regenerated with woven bone. Sever inflammation were seen in membrane groups.
Keywords: bone marrow stem cell, periodontal stem cell, regeneration, tissue engineering.

155
Ref no: EUABS064186

Histological evaluation of curcuma longa-ghee formulation and hyaluronic acid on gingival healing in dog

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Aim: Currently, hyaluronic acid is applied to reduce side effects of periodontal surgery. The purpose of this study was to compare the effect of Curcuma longa – ghee compound with hyaluronic acid on the gingival wound healing following surgery.
Methods: Six male beagle dogs were selected. Ghee was taken from the refined sheep butterfat. It was heated to 70°C and then mixed with the powdered rhizomes of curcuma longa. Gingivectomy was performed at the buccal gingiva of the teeth in six different regions of jaw. Untreated wounds in the two control areas were covered with periodontal pack and two these materials were applied topically in each two areas of four remaining test regions and then these areas were covered with periodontal pack. Histological changes were evaluated in days 4 and 7 after operation.

Results: We found significant differences of all inflammatory and repair parameters at both days 4 and 7 between the control group and test regions. When comparing this new material with hyaluronic acid alone, we observed meaningful differences between inflammatory cells count ($P = 0.009$), edema ($P = 0.004$), acute and chronic hemorrhage ($P = 0.001$), fibroblast proliferation ($P = 0.023$) and collagen density ($P = 0.014$) at day 4 & 7.

Conclusion: This new formulation in comparison with hyaluronic acid indicated a positive potential therapeutic effect on acceleration of surgical wound healing particularly improvement of periodontal treatment consequences after surgery.

Clinical Research – Diagnosis and risk factors

156
Ref no: EUABS064281
Effects of non-carious cervical lesions and class V restorations on periodontal conditions
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The non-carious cervical lesion (NCCL) is a loss of tooth structure at the neck of teeth that is unrelated to tooth caries. Prevalence and severity of lesions have been found to increase with age. The purposes of this study were first, to examine the periodontal conditions associated with NCCL, and second, to investigate the clinical effects of class V restorations of NCCL on periodontium. The sample size was 982 teeth of 50 subjects (25 male, mean age 52 ± 7) who were seen at the Dept. of Periodontology, Pusan National University Hospital. At the baseline examination, clinical periodontal parameters were measured. After the initial examination, 24 patients were randomly selected. The teeth with NCCL were randomly divided into the test and control groups. The teeth in the test group were restored with flowable resin; the control teeth were not restored. Six months later, the clinical examinations were repeated. The data were analyzed using the SPSS program. The results were as follows: 1) NCCL occurred on 45.8% of examined teeth. The percentage of affected teeth was higher in maxillary and premolar teeth. 2) Teeth with NCCL had more gingival recession, lower attachment level, and higher incidences of bleeding on probing (BOP) and plaque than NCCL-free teeth. 3) Six months later, the percentages of BOP and plaque in the test group were significantly lower than in the control group ($P < 0.05$). These results suggest that restoration of NCCL helps to improve periodontal health.

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Ref no: EUABS064010
Comparison between two methods for periodontal risk assessment
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Introduction: Risk assessment is increasingly important in Periodontology. We proposed a new objective method (*UniFe*) in order to simplify the risk assessment procedures.
Aims: To compare *UniFe* with a computer-based risk assessment tool (*PAT*®).
Materials and methods: Risk scores for both *UniFe* and *PAT*® were calculated for 107 patients, randomly selected among patients seeking care at a specialist periodontal clinic. For *UniFe* risk calculation, the ''parameter scores'' assigned to smoking status, diabetic status, number of sites with probing depth ≥ 5 mm, Bleeding on probing Score (BoP) and bone loss/age, were added and the sum was referred to a ''risk score'', ranging from 1 (low risk) to 5 (high risk). *PAT*® generated a risk score on a scale from 1 (lowest risk) to 5 (highest risk).
Results: The mean *UniFe* and *PAT*® risk scores were 4.5 ± 0.9 and 4.6 ± 0.7, respectively. Cohen *k*-statistics amounted to 0.70, suggesting a good agreement between methods. Difference in risk score between methods was significantly explained by the parameter scores of BoP and bone loss/age (adjusted $R^2 = 0.378$).
Conclusions: The comparison between *UniFe* and *PAT*® demonstrated a good level of agreement between methods in randomly selected population referred to a periodontal clinic.

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Ref no: EUABS064064
Protective role of antibodies against FDF in gingival crevicular fluid of periodontitis patients
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Background and Objective: *Tannerella forsythia* is one of the important periodontopathogen. We have previously isolated the novel virulence factor of its bacterium designated as forsythia detaching factor (FDF) which has been shown to detach an adherent cells from the bottom of culture dish and induce IL-8 production in human fibroblasts *in vitro*. The purpose of this study was to clarify the relationship between the anti-FDF antibody levels in gingival crevicular fluid (GCF) and the local periodontal status in periodontitis patients.
Materials and methods: Thirty-two patients with periodontitis were included in this study. Following the clinical measurements (Probing Pocket Depth: PPD, Clinical Attachment Level: CAL), GCF samples were obtained from periodontally healthy sites (PPD < 4 mm) and diseased sites (PPD≥ 4 mm) using a Periopaper®. Anti-FDF antibody levels were measured by enzyme-linked immunosorbent assay (ELISA).
Results: Anti-FDF antibody levels of the periodontally healthy sites were significantly higher than those in the diseased sites. In all subjects, anti-FDF antibody levels showed statistically significant negative correlations with PPD or CAL.
Discussion and conclusion: These results suggest that anti-FDF antibody possesses the protective ability against periodontitis. This antibody might be used as an agent for passive immunization against periodontitis patients.

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Ref no: EUABS064076
The clinical detection of *Helicobacter pylori* in dental plaque using polymerase chain reaction
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Background: *Helicobacter pylori* (HP) are considered to be a pathogen responsible for gastritis and peptic ulcers. Recently, HP has been detected in dental plaques; hence oral cavity has drawn attention to be the second place to home HP. However, it is unknown yet whether the oral cavity acts as a reservoir for this bacterium.
Objectives: The aim of this study was to clarify whether the oral cavity is the reservoir for HP, and if there is any relationship between gastritis and the infection of dental plaques?

Materials and methods: Samples of the supra and subgingival dental plaques were collected from 67 patients suffering periodontitis, where 23 patients suffered gastritis as well as periodontitis. Using sequences of different HP genes, four pairs of oligonucleotide primers were designed in this study to optimize a sensitive and specific protocol for diagnosis and detection of HP. The data were analyzed with χ^2 and Fisher statistical test.
Results: According to the results of this study, prevalence of HP in dental plaque samples was low (5/9%). Significant relationship was seen between HP infection in dental plaque and gastritis ($P = 0.012$).
Conclusion: Although the prevalence of the HP in dental plaques were shown to be very low, it may be necessary to pay close attention to dental plaques as the possible source of re-infection after treatment of gastritis.
Keywords: *Helicobacter pylori*, Dental plaque, polymerase chain reaction (PCR), gastritis, and periodontitis.

160
Ref no: EUABS063834

Smoking and interlukin-1 genotype as risk indicators of early bone loss around dental implants

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Aim: To assess the association between smoking and interlukin-1 polymorphisms with early bone loss in Syrian population.
Materials and methods: A total of 45 dental implants were placed in 36 *well maintained* individuals (13 males and 23 females) 25 to 50 years of age (mean 34.4 year). Panoramic radiographs were taken at prosthetic loading and 1 year thereafter. Radiographic bone loss was measured at the mesial and distal surfaces of the implants. Genomic DNA was extracted from buccal mucosal samples and was amplified by the polymerase chain reaction (PCR), followed by restriction fragment length polymorphism (RFLP) and submitted to polyacrylamide gel electrophoresis to distinguish the alleles of the interleukin-1A (-889), the interleukin-1B (+3954) and (-511) gene polymorphisms.
Results: 19 implants (or 42.2%) showed early bone loss 1 year after loading. Of these, 11 (24.5%) were in smokers, and 8 (17.7%) in nonsmokers. Patients with IL-1B-511 2/2 genotype exhibited a significantly higher number of bone loss around implants than those with IL-1B-511 1/1 or IL-1B-511 1/2 genotypes ($P < 0.05$). Implants placed in the maxillary arch of smokers showed the highest mean bone loss (0.84 mm).
Conclusion: Early bone loss after loading of implants may be associated with cigarette smoking and a genotype of IL-1B-511 2/2 polymorphism. The use of adequate preventive measures in smokers and genotype positive individuals may prevent early bone loss around dental implants.

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Ref no: EUABS063925

Early dental plaque in periodontitis susceptible individuals

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Objectives: Plaque formation has been shown to be faster in periodontitis-susceptible than in healthy subjects. The mechanisms behind this observation are not fully understood.
Material and methods: Eleven patients presenting with remaining periodontal pockets were recruited. Samples were taken before and after surgical pocket elimination, and after subsequent experimental gingivitis. Four-hour plaque was harvested with scalers from the gingival & incisal tooth surfaces and analysed by culturing.
Results: The total viable counts (TVC) per sample varied from < 10 to 4.9×10^7 (overall mean $2.87 \times 10^6 \pm 8.46 \times 10^6$). By far the highest bacterial counts were observed at remaining pockets and TVC were mostly higher on the gingival than on the incisal parts of the teeth. However, the reverse was seen for streptococci and *Actinomyces* spp. that were identified in > 90% and 32% of the samples respectively. Other bacteria were less common (< 10%). The TVC was reduced on the gingival tooth surfaces ($P < 0.05$) after pocket elimination and increased slightly during experimental gingivitis. *Capnocytophaga* spp. and *F. nucleatum* was more often found before than after surgical pocket elimination. In no case were *A. actinomycetemcomitans*, *P. gingivalis* or black-pigmented *Prevotella* spp. found.
Conclusion: Remaining pockets may affect de novo plaque formation and foster the acquisition of periodontopathogenic bacteria. This study was supported by Skåne County, Patentmedelsfonden & the Swedish Dental Association.

162
Ref no: EUABS063953

Transcriptomes in sites with drug-induced gingival overgrowth – microarray and RT-PCR analyses

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Drug induced gingival overgrowth (GO) is a side effect of drugs such as calcium antagonists commonly prescribed for hypertension. The progression of the disease usually occurs locally based on some bacterial and host factors. Examining what kinds of genes are up-regulated and/or down-regulated in the GO tissues seems to be useful to understand the local host-parasite interactions, which may play a crucial role in their pathogenesis. Gingival tissues were harvested from two sites per patient; one from clinically healthy tissue, and the other from tissue affected by GO. Four GO patients were analysed by microarray analysis with Gene Chip® Human Genome U133 plus 2.0 (Affymetrix). A quantitive real-time RT-PCR (qRT-PCR) was then used to confirm the results in 10 clinical GO and 10 clinical healthy samples. A total of 163–1631 up and 100–695 down-regulated genes in 4 GO patients were identified, which were differentially expressed at least two-fold within 47,000 analyzed genes. Selected genes quantified by qRT-PCR. DEFB4, CRNN, SPARCL1, MMP12, Cathepsin L were up-regulated, while KRT10, TGF-beta1 were down-regulated in GO tissue. Microarray technology with computer aided differential analysis of gene expression arrays provided a set of candidate genes for GO. However it did not detect GO specific gene expressions; GO was clinically caused by complex genes. Additional experiments classified by disease types are continued, which might elucidate the pathogenesis of the diseases.

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Ref no: EUABS064355

NFAT-activity as prognostic indicator for ciclosporin-induced gingival overgrowth

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Ciclosporin A (CsA) is a potent immunosuppressant that has many side effects, including gingival overgrowth (GO). There is still controversy concerning the relationship between pharmacoki-

netic (PK) drug variables and expression of GO. Pharmacodynamic (PD) monitoring is a new strategy to provide more information about the biological effect of CsA. Therefore, association between CsA-PD, measured as transcriptional activity of NFAT-regulated genes, and degree of GO was evaluated in 36 renal transplant patients (9 female, mean age of 45 years). The expression of GO was significantly correlated with decreasing NFAT-activity. In contrast GO was not associated with any CsA-PK studied parameters. PD assessment might be a promising prognostic indicator for the development of GO.

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Ref no: EUABS064382
IL-1 genotype and subgingival microflora in patients with aggressive and chronic periodontal disease
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Theory of bacterial biofilm consisting of several ''complexes'' (acc. to Socransky et al) is well established. Following data regarding association between genotype of IL-1, bacterial complexes, and clinical parameters of periodontal disease, our aims were: 1) to evaluate the association between aggressive and chronic periodontal disease and the composition of bacterial biofilm; 2) to examine the association between genotype of IL-1 and titers of selected bacterial pathogens in patients with aggressive (AP) and chronic (CP) periodontitis; 3) to check the correlation between clinical, microbiological and genetical data obtained.

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Ref no: EUABS064385
Aggregatibacter actinomycetemcomitans and periodontal status in an untreated isolated population from Brazil
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Objectives: The aim of this study was to assess the prevalence and serotype distribution of *Aggregatibacter actinomycetemcomitans* (*A.a*); and investigate possible associations between *A.a* and increased probing depth (PD) in an untreated isolated population in Brazil.
Methods: The target population consisted of all individuals aged ≥ 12 years identified by a census. A full-mouth clinical examination of 6 sites per tooth was conducted. Subgingival plaque samples from 4 sites per subject were obtained, and subjects were interviewed with a structured written questionnaire. PCR analyses were performed to detect and assess serotype distribution of *A.a*.
Results: Among 214 subjects (81% response rate) who were interviewed and clinically examined, a total of 169 pooled subgingival plaque samples from 195 dentate subjects were obtained. The overall prevalence of *A.a* was 24.3% (n = 41). From these isolates, 17 (41.5%) were serotype a, 2 (4.9%) b, 19 (46.3%) c, 1 (2.4%) e, 0 d and f, and 4 (9.8%) non-serotypeable. No significant association between presence of *A.a* and prevalence of PD≥ 4 mm (OR = 1.98, 95% CI = 0.8–4.9, P = 0.142) was found in a series of multivariate regression analyses adjusted for demographic, biological and environmental factors.
Conclusions: This study revealed a low prevalence of *A.a*, when compared to similar populations. Its distribution consisted predominantly of a and c serotypes. Nevertheless, *A.a* presence was not associated with increased PD in this isolated population.

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MMP-1 gene polymorphisms in Korean generalized aggressive periodontitis patients
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Periodontitis, especially generalized aggressive periodontitis (GAP), has genetic susceptibility to periodontal microbial infection and tissue destruction. Recently, MMP-1 gene polymorphism was reported to be associated with various diseases. This study was to evaluate the contribution of SNP in the MMP-1 promoter in Korean GAP patients. We included 56 GAP patients in test group and 57 children as reference group. DNA from buccal swab was genotyped for MMP-1 promoter-1607 and-519 using PCR-RFLP. The distribution of polymorphism in 2 groups was compared using $\chi 2$ test. MMP-1-1607, genotype of 1G/1G, 1G/2G and 2G/2G was shown in 5.4%, 55.4%, and 39.3% of GAP, and genotype and allele distribution was significantly different between 2 groups. The genotype of A/A, A/G, G/G of MMP-1-519 was shown in 67.9%, 30.4% and 1.8% of GAP and the frequency was also significantly different between 2 groups. MMP-1-519, A allele in GAP was observed in 82.1%, significantly greater than reference group (62.3%). Most subjects were allele A carriers at the position-519 of MMP-1. The most common haplotype was 1G/A in both group at the frequency of 60% and 46% and the second most common haplotypes were 2G/A in GAP group and 1G/1G in reference group. The 2G/A haplotype in GAP were about 2 times more frequent, compared to reference group. In summary, the MMP-1-1607 and-519 polymorphism seems to be associated with GAP in Korean.

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Ref no: EUABS064894
Caries risk profile assessment in untreated periodontally diseased patients using the cariogram model
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The aim was to evaluate the caries risk profile in patients referred for treatment of periodontal disease using the Cariogram pedagogic model. Totally 112 patients in Saudi Arabia, 15–80 years old, were included. They all answered a questionnaire regarding medical history, oral hygiene, use of fluoride products, dietary and smoking habits. Bitewing (and selective periapical) radiographs were taken. Clinical assessments of dental plaque, gingival health, probing pocket depth and recession were performed. Caries registration was carried out according to the WHO criteria. Paraffin-stimulated whole saliva was collected for determination of secretion rate, buffer capacity, mutans streptococci (MS) and lactobacilli (LB). The patients were divided into three groups according to the periodontal disease severity, based on clinical and radiographic findings: 1) Gingivitis (n = 41), 2) Mild-Moderate Periodontitis (n = 41) and 3) Severe Periodontitis (n = 30). All data were entered into the Cariogram program in order to evaluate the caries risk profile. There was a wide variation among the 112 patients regarding DFS (0–68); 70% had < 20 DFS. Only 15–17% had high MS and LB scores. Most patients had normal salivary secretion rate and buffer capacity. Caries risk, expressed as ''actual chance to avoid caries'' varied between 6 and 91%. The main conclusion from this study - based on Cariogram data - is that 75–80% of untreated periodontally diseased patients in general have a low caries risk profile.

168
Ref no: EUABS064916

The active/passive smoking and gingival neutrophil elastase activity in young adults

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Objective: The relationship between periodontal degradation and smoking has been demonstrated by epidemiological evidence. While the mechanism of this effect remains unknown, it may be related to a host-response reaction. The aim of this study was investigate the effect of active/passive smoking on gingival neutrophil elastase activity (NEA).
Methods: 92 subjects with no clinical signs of periodontitis were examined. GCF volume was measured with a Periotoron. NEA was measured in GCF samples using a chromogenic low molecular substrate, while elastase alpha-1-antitrypsin complex (E-A1AT), A1AT and saliva cotinine levels were measured using ELISA.
Results: 1, Based on the amount of saliva cotinine, 40 of the self-reported non-smokers were actually passive-smokers, and 14 subjects were actually non-smokers. 2, There were no significant values on A1AT and E-A1AT between non-smokers, passive-smokers and smokers. 3, With NEA, non-smokers and passive-smokers were showed significantly lower values ($P < 0.05$) compared to smokers. 4, There was a weak correlation between the amount of saliva cotinine and NEA ($P < 0.05$) in passive smokers.
Conclusion: These results indicated that active/passive smoking altered NEA. Furthermore the alternation of NEA in GCF was demonstrated one of biochemical marker on active/passive smoking. This study was supported by a grant from Ministry of Education, Science and Culture of Japan (No. 20592437).

169
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Lingual recessions: possible implication of tongue piercing?

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This case control study evaluates whether a tongue piercing (TP) favours the occurrence of lingual recessions. Members of the Federal Armed Forces wearing a TP volunteered. A survey determined the time in situ, shape, localization, and material of the TP (control group (K): soldiers w/o TP). A dental examination of both groups indexed the DMF-T, oral hygiene, lingual and vestibular recession findings. The TP group consisted of 46 male subjects (age Ø 22.1 years), mean time in situ: 3.8 ± 3.1 years. 48 dumbbell-shaped TPs (2 subjects wearing 2 TPs each) were closed with bullets (94 %), cones (4 %), and cylinders (2 %). 45 TPs were placed in the anterior, 3 in the middle third of the tongue. The TPs consisted of titanium (65 %), steel (25 %), and niobium (5 %). The K group consisted of 46 male subjects (age Ø 22.1 years). Subjects in the TP group had a total of 1,260 teeth. 27 subjects (59 %) showed 97 teeth with recessions (7.7 %; vestibular: 26 %, lingual: 74 %). Lingual surfaces of the mandibular anterior teeth were affected most frequently ($P < 0.001$): 32 = 12%, 31 = 19%, 41 = 18%, 42 = 14%). In the K group (1,243 teeth), 8 subjects showed 19 teeth with recessions: 1.5 %; vestibular: 65 %, lingual 35 % (32 = 5%, 31 = 11%, 41 = 5%, 42 = 0%). Differences between both groups were statistically significant ($P < 0.001$). Wearing a TP leads to significantly increased lingual recessions. Effects were mainly found in mandibular incisors. Subjects with a TP should be informed about negative consequences.

170
Ref no: EUABS064809

Conventional periodontal probe versus Florida probe: is the probing depth reproducible?

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This clinical study evaluates whether the probing depth (PD) of a conventional periodontal probe (PP) and the Florida probe (FP) are reproducible. 42 subjects (34 male, 8 female, 34.0 ± 10.3 years old) participated, each with an average of 26 teeth. The examiner was calibrated prior to probing (kappa value > 0.8). PD was determined with a mm-scaled PP (CP-15UNC) and the FP (acc. manufacturer) at 6 defined points of measurement per tooth. Every subject was examined twice with each probe (rotation 7–14 days). 6,639 values were collected per probe and appointment (total: 26,556 measurements, PD: 1–10 mm). PD evaluated with PP was significantly different from FP ($P < 0.01$), while PP showed higher probing values. Average PD with PP: 2.30 ± 1.0, average PD with FP: 1.85 ± 0.83. Differences were mainly found in the posterior sextant, they were only minor in the anterior sextant. The results of both probes correlated with each other (Pearson's $\rho = 0.41$), however, this diminished with increasing probing values. In repeated measurements, FP showed significantly different values in the initial probing (1.89 ± 0.84 / 1.81 ± 0.82; $P < 0.01$). PP showed no significant differences between first and second probing (2.31 ± 1.02 / 2.30 ± 0.98; $P = 0.98$). Although the differences in the probing values of both probes are statistically significant, the differences were of no clinical relevance. They were mainly found in the posterior region and in higher probing depths. PP reached higher probing depths than FP.

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Ref no: EUABS064946

Semi-quantitative DNA-strip technology in evaluation of treatment of periodontitis

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The purpose of the study was to evaluate the impact of a commercially available test (microIdent®, Hain Lifescience) on diagnosis and treatment of severe chronic periodontitis.
Methods: 27 patients underwent periodontal therapy. Subgingival plaque samples were collected with paper points in three sites with an attachment loss > 5 mm before SRP as well as 3, 6 and 12 months later. After extracting DNA, Aggregatibacter actinomycetemcomitans (A.a.), Porphyromonas gingivalis (P.g.), Tannerella forsythia (T.f.) and Treponema denticola (T.d.) and additional seven bacterial species were determined by microIdent based on DNA-strip technology. A pocket depth of ≤ 3 mm was used as an end-point after one year. Statistical analysis was made by Mann-Whitney test.
Results: At baseline 35.5% of the samples were positive for A.a., 98% for P.g., 82.8% for T.f. and 75.3% for T.d., no clear difference in the microflora was found between the success and the non success groups. However, the microbiological results obtained 3 and 6 months after treatment might be a good indicator. A high load with P.g., T.f., T.d, Campylobacter rectus was negatively associated with success of treatment in these chronic periodontitis patients.

Conclusions: Semi-quantitative DNA-strip technology can be recommended for diagnosis, treatment schedule and control in dental practice and also in clinical trials. For prognosis of treatment, a microbiological analysis might be helpful 3 months after treatment.

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Ref no: EUABS064948

Comparison of real-time PCR and DNA-strip technology in detection of periodontopathogens

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Objectives: The purpose of the study was to compare a semiquantitative commercially available test (microIdent®, Hain Lifescience, Nehren, Germany) with a quantitative in-house real-time PCR.
Methods: 308 subgingival plaque samples obtained from 27 patients with a severe chronic periodontitis were included in the analysis. After extracting DNA, Aggregatibacter actinomycetemcomitans, Porphyromonas gingivalis, Prevotella intermedia, Tannerella forsythia, Treponema denticola and six additional species were determined in parallel by real-time PCR (in duplicate) and microIdent based on DNA-strip technology. The results obtained by microIdent were analyzed semi-quantitatively (the normally used principle) and additionally quantitatively by densitometry.
Results: The quantitative results for all 11 bacterial species correlated significantly between the two methods (each $P < 0.001$, R ranged between 0.331 and 0.705). Higher R-values were obtained for the major periodontopathogens; the correlation was lower for Parvimonas micra and Capnocytophaga sp. The numbers of negative samples by one method and a high load by the other method was always below 2%. In-house real-time PCR was more accident-sensitive than the microIdent test resulting in rerun of tests.
Conclusions: In-house real-time PCR is a cheap useful method for large studies. Semi-quantitative DNA-strip technology can be recommended for diagnosis in dental practice and also in clinical trials.

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Ref no: EUABS064984

Determination of serum osteoprotegerin levels in patients with aggressive periodontitis

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Introduction: New insight into regulation of bone turnover was provided by recent discovery of three molecules: RANKL/OPG/RANK. All these proteins are essential in osteoclastogenesis; however the key factor that inhibits osteoclasts formation is osteoprotegerin (OPG).
Aim: This study aimed to compare the serum levels of osteoprotegerin (OPG) of healthy and periodontal disease subjects.
Material and Methods: The investigated group consisted of 24 patients with generalized aggressive periodontitis-GAP criteria established by AAP in 1999). The control group counted 18 persons with healthy periodontium. All participants were dully informed of the research protocol approved by the Bioethical Committee of Wroclaw Medical University. The serum osteoprotegerin levels (OPG) were determined with ELISA technique (R & D Systems) and then put together with clinical data.
Results: Serum osteoprotegerin levels were detectable in all patients. There were signignificant differences between OPG levels between patients with aggressive periodontitis and the control group. The OPG concentration was lower in GAP patients compared with the control group. Serum OPG levels were significant correlated with clinical parameters of tissue destruction.
Conclusion: Our results suggest that high serum OPG levels may serve as antiresorptive, osteoprotective factor in the healthy population, whereas to low serum levels may predispose to excessive bone destruction seen in aggressive periodontitis.

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Inflammatory biochemical markers during orthodontic movement

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Both in periodontitis and in orthodontic tooth movement some specific biochemical mediators associated with chronic inflammation and osteoclast stimulation, such as IL-1β and TNF-α, are present.
Aims: Assess the differences in the concentrations of IL-1β and TNF-α between patients with a history of periodontal disease and healthy patients, both undergoing orthodontic movements and in the dynamics of these inflammatory markers.
Material and methods: 22 patients participated in this study, with a total of 76 teeth. The test teeth received a mesial force, through the application of an orthodontic separator; the control teeth were not subjected to force. The GCF was collected from the mesio-buccal aspect of the teeth before the placement of the separators (T1), immediately afterwards (T2), 1 hour later (T3) and a week later (T4). Its quantification was accomplished with the unit Periotron® 8000 and the IL-1β and TNF-α levels were determined through ELISA testing.
Results: The concentration of IL-1β presents significant statistical differences from T1 to T4 in test groups with or without history of periodontal disease ($P \leq 0.05$). For the TNF-α no significant statistical differences were founded between the four evaluations ($P > 0.05$) in all groups, but the concentration levels of this cytokine was higher in healthy patients.
Conclusion: The use of separators creates alterations in IL-1β levels in both test groups, but not in TNF-α levels.

175
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Periodontal prognosis and tooth lost in a periodontal practice

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In the present context when a multidisciplinary approach is proportionate to a patient, frequently the periodontist is the first expert to make his clinical evaluation. That way, in a periodontal practice it becomes decisive to realize an individual tooth prognosis regarding both clinical exam and the known risk factors.
Aim: In this retrospective study periodontal cause tooth lost were quantified, according to their initial periodontal prognosis, and the association of teeth loss with some risk factors were made.
Methods: Clinical files from 130 patients (80 females and 50 males), diagnosed with chronic periodontitis, and observed over a mean period of 20 months, after initial periodontal treatment and supportive periodontal therapy accomplished as proposed, were included and evaluated in the study. Individual

periodontal prognosis and medical history of each patient has been recorded.
Results: At baseline 3304 teeth were included, and 47 (1.4%) teeth were extracted. The risk factor findings at baseline and tooth lost witch had a positive correlation were: smoking ($P = 0.054$) and ageing ($P = 0.039$). None of the good prognosis teeth were lost; 6 (2.3%) of questionable prognosed ones were lost, and all the rest 41 (15.8%) extracted teeth had been considered impossible to maintain.
Conclusion: Age and smoking, as related factors described in literature, could be associated with teeth lost in this sample. The values of this study agree with some identical clinical trials.

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Ref no: EUABS065655
Single nucleotide polymorphisms of complement component 5 and periodontitis
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Polymorphisms of host defense genes might increase ones risks for periodontitis. This study investigated single nucleotide polymorphisms (SNPs) in the coding and regulatory regions of the innate host defense element complement component 5 (C5) in association with periodontitis. 229 periodontitis patients and 207 periodontitis-free subjects were recruited for genotyping 11 tagging SNPs. AG of rs17611 was more prevalent in periodontitis patient group ($P = 0.023$). The haplotype CGCA of block consisting of rs1035029, rs17611, rs25681 and rs992670 was significantly associated with periodontitis ($P = 0.038$). Rs17611 showed high linkage disequilibrium with rs1035029, rs25681 and rs992670. Smoking was significantly associated with periodontitis ($P = 0.004$). In conclusion, the tagging SNP rs17611 of C5, together with smoking appeared to be associated with periodontitis.

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Ref no: EUABS065663
Periodontal risk assessment score during supportive periodontal therapy: a new approach through a seven years retrospective study
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Background: The multifactorial approach of risk factors in the management of periodontal diseases characterises the present knowledge on host susceptibility to periodontitis. Risk level assessment is complex and remains variable from one clinician to another. The aim of this study was to enhance the Periodontal Risk Assessment Score (Lang & Tonetti) by mathematically calculating a risk score.
Methods: 30 patients were retrospectively selected at least 7 years after initial diagnosis of periodontitis.15 patients received regular supportive periodontal therapy while 15 patients were not compliant. Risk score was calculated for each patient and used to compare its incidence on tooth loss and pocket probing depth (PPD).
Results: The data analysis reported an increasing tooth loss rate with initial risk factors. Moreover, if the two groups were considered separately, the tooth loss rate was quickly higher in the non compliant group. There was less evidence regarding differences in PPD, but patients with a higher initial risk score seemed to have less PPD reduction then patients with a lower initial risk score.
Conclusion: This approach gives us a way to easily investigate patient's risk susceptibility to periodontal diseases through a unique score, which could be useful for clinicians to evaluate ideal recall period during supportive periodontal therapy. Besides, it confirms the importance of supportive periodontal care in reducing tooth loss and stabilizing disease on the long term.

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Ref no: EUABS065734
Effect of smoking on salivary biomarkers of periodontal disease
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Objective: Saliva is considered as an easily collected, non-invasive diagnostic specimen for screening of oral diseases. The objective of the present study was to evaluate the effect of smoking on the salivary concentrations of previously studied periodontal disease biomarkers.
Methods: Salivary specimens originated from 165 systemically healthy subjects aged 40 to 60 years (a sub-sample of the Finnish population survey "Health 2000") with at least 20 teeth; 84 of the subjects had advanced periodontitis (at least 14 teeth with probing pocket depth 4 mm or more) and 81 subjects were periodontally healthy (no pockets > 3 mm). Elastase and lactate dehydrogenase (LDH) activities, and interleukin-1β (IL-1β), IL-6, and tumor necrosis factor-α (TNF-α) concentrations were measured using colorimetric enzyme assays or ELISA. Smoking history was gathered by the interviews.
Results: In general, the smokers had lower LDH and elastase activities and IL-6 and TNF-α concentration, and higher IL-1β concentration compared to the non-smokers. The differences were statistically significant ($P < 0.05$) for LDH in both study groups but for TNF-α only in subjects with periodontitis. In the periodontitis group, there was a negative association between the amount of daily smoking and LDH activity.
Conclusions: We conclude that the effect of smoking on salivary LDH activity and TNF-α concentration limits their use as markers of periodontitis.

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Ref no: EUABS065671
Transcriptomes in sites with chronic periodontal tissue -microarray and RT-PCR analyses
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Gene factors are related to pathogenesis of periodontitis, have a crucial role in the susceptibility. Interindividual difference for immune systems seems also important. The purpose of this study was to explore the multiple up- and/or down-regulated genes in periodontitis affected gingival tissues. Gingival tissues were harvested at two sites, from both clinically healty as well as periodontitis sites, of 4 patients with localized chronic periodontitis. The isolated total RNA was subjected to gene expression profiling using the microarray, and datamining analysis. In the comparison of healthy and periodontal areas in all subjects, total of 41-955 up- and 32-402down-regulated genes were identified. There was no significant gene different commonly expressed in 4 patients; however, in 3 patients, 46 and 205 genes were expressed commonly more than 3 times (group1) and 2 times (group2), respectively. Also, 53 and 103 genes were less than 1/3 (group3) and 1/2 (group4), respectively. In group2, 8 upregulated

and 4 downregulated genes were randomly selected for further analysis by quantitative real-time reverse transcription-polymerase chain reaction. We found a number of features of gene expression patterns by microarray technology combined with conventional examinations that could be involved in the inflammatory and in tissue breakdown. These results revealed novel genes which could be related to locally or site-specifically progressive periodontal diseases.

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Single nucleotide polymorphisms of Fc-gamma receptor genes and periodontitis

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Genetic polymorphisms of multiple host defense genes might increase one's risk for periodontitis. This case-control study investigated whether 103 single nucleotide polymorphisms (SNPs) Fc gamma receptor (*FCGR*) genes are associated with periodontitis. Cases were 229 Hong Kong Chinese patients with periodontitis and controls were 207 periodontitis-free subjects. Genotypes AA of rs6677299 (P = 0.007) and GG of rs6690760 ($P = 0.007$) of *FCGR2A*, and genotypes TT of rs2290834 ($P = 0.004$) and CT of rs445509 ($P < 0.0001$) of *FCGR3A* were significantly more prevalent among cases than controls after adjustment for age, sex, and smoking. High linkage disequilibrium was found among these four *FCGR* SNPs. Three haplotypes were found to be significantly associated periodontitis. Smoking was significantly associated with periodontitis ($P = 0.004$). Within the limitations of this study, four SNP genotypes of *FCGRs*, and smoking, seem to be associated with periodontitis among Hong Kong Chinese.

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Ref no: EUABS065901

Comparison of two different commercially available test kits to detect periodontal pathogens

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Objectives: This study compares two different test kits for detection and quantification of 4 periodontal pathogens in samples of subgingival plaque.
Methods: 69 Patients with aggressive or severe chronic periodontitis participated in the study. Microbiological analysis of pooled samples from subgingival plaque was performed with two different gene probe-tests (IAI PadoTest 4.5®, Institut für Angewandte Immunologie, Zuchwill, Switzerland (PADO), and the Meridol® Periodiagnostics, GABA, Lörrach, Germany (MERI). Agreement between the two protocols was calculated with kappa statistics for a categorial dichotomous diagnosis (positive/negative test result) and with a passing bablok regression (x = PADO, y = MERI) for the continuous data of bacterial counts in mio units.
Results: Aggregratibacter actinomycetemcomitans (A.a.), Tannerella forsythia (T.f. , Porphyromonas gingivalis (P.g.) and Treponema denticola (T.d.) were identified with both PADO and MERI. For all 4 periodontal pathogens under examination, MERI tended to identify more patients with a positive diagnosis than PADO. Thus, the passing bablok regression equation revealed positive slopes for all 4 pathogens between 2.974 and 8.250. Kappa-statistics exhibited fair agreement for A.a. (0.295), moderate agreement for T.f. and T.d. (0.509 and 0.576) and a good agreement for P.g. (0.689).
Conclusions: Identification of periodontal pathogens may be inconsistent if different commercially available test kits are used.

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Ref no: EUABS065923

Alpha-1-antitrypsin deficiency and periodontitis, a pilot study

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Proteases are capable of tissue breakdown. Plasma and gingival crevicular fluid (GCF) contain antiproteases, such as alfa-1-antitirypsin (AAT). Lack of AAT may lead to periodontal destruction. The aim was to study if periodontal parameters and elastase in GCF and plasma are different in AAT deficient subjects compared to subjects without AAT deficiency.
Material and methods: 30 subjects were included, 20 of whom with severe AAT deficiency. Ten of them suffered from chronic obstructive pulmonary disease (group 1) and 10 were asymptomatic (group 2). Ten control subjects (group 3) were recruited from a public dental clinic. The examination comprised GCF, Gingival index (GI), Plaque Index (PlI), probing pocket depth (PPD) and radiography. GCF was collected with paper strips (Periopaper®). Plasma AAT concentration was measured by nephelometry and AAT in GCF with ELISA. Elastase activity and protein in plasma and GCF were determined by spectrophotometry.
Results: The mean values for GI, PlI, PPD and the radiological measurements did not show any statistically significant differences between the groups. AAT in GCF and plasma did not show any significant difference between group 1 and 2 but a statistical difference in comparison with group 3. Elastase in GCF and plasma did not show any difference between the three groups. In conclusion no differences were found between AAT deficient subjects and healthy controls in this limited material.

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Ref no: EUABS065908

Ginigival overgrowth – a unique clinical feature of generalized aggressive periodontitis

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The diagnosis of Generalized Aggressive Periodontitis (GAP) relays mostly on clinical features. The differential diagnosis of GAP from chronic periodontitis (CP) is often confusing. The aim of the present report is to describe a distinct gingival manifestation that might assist in the diagnosis of GAP.
Methods: Intraoral clinical pictures of untreated 11 GAP and 11 CP patients were evaluated. Patients' anamnesis and diagnosis were performed by a trained periodontist according to the AAP clasification (1999). Interproximal buccal papillae were scored from 0 to 4 using the Jemt's papilla index score (PIS).
Results: GAP patients were younger than CP patients (21.5 ± 9.2 versus 49.1 ± 10.2 years, $P < 0.0001$). Mean PIS was significantly higher for GAP (3.4 ± 0.6) compared to CP patients (2.5 ± 0.9; $P < 0.0001$). The prevalence of gingival overgrowth (PIS = 4) was significantly higher for GAP (86.5%) compared with CP patients (13.5%; $P = 0.0001$) while, PIS 1, 2 were significantly more prevalent in CP (91.4%) patients compared to GAP patients (8.6%; $P = 0.0001$).

Conclusions: A unique clinical characteristic of gingival overgrought was presented for the first time in GAP patients. This distinct feature might prove as a useful diagnostic tool to differentiate between GAP and CP patients.

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Ref no: EUABS065903

Peripheral blood leukocyte gene expression in gingivitis and periodontitis

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Aim: At present, there is no reliable method to identify individuals who are susceptible to periodontal disease progression. The aim of this study was to determine the pattern of peripheral blood leukocyte (PBL) gene expression in subjects with gingivitis (G) or chronic periodontitis (CP).
Method: Peripheral blood was collected from adults with either gingivitis (probing depth ≤ 3 mm with bleeding on probing and no radiographic bone loss [RBL]) (n = 4) and also from subjects with chronic periodontitis (probing depth ≥ 5 mm in ≥ 6 sites with RBL) (n = 6). RNA from PBLs was extracted using the leukoLOCK^{TM} total RNA isolation kit. Reverse-transcriptase real-time polymerase chain reaction (RT^2 Profiler^{TM} PCR Array) was carried out to detect the expression profile of 84 cytokine genes. Data analysis was performed using the $\Delta\Delta C_t$ based software which reports fold changes (SA BioScience^{TM}).
Results: Preliminary results showed that three genes: IL-10, VEGF and TNF-superfamily member 4 were up-regulated by 2 fold in the CP group compared with the G group. The IL-1α gene was down-regulated by 3 fold and 9 other genes, including multiple genes from the BMP and inhibin families were down-regulated by 2 fold in the CP group.
Conclusion: These preliminary results suggest that gene expression profiles differ between gingivitis and chronic periodontitis. Further investigation with a larger sample size may provide more insight into the significance of these findings.

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Ref no: EUABS065899

Subtypes of *Aggregatibacter actinomycetemcomitans* in patients with different ethnic background

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Objectives: The role of *Aggregatibacter actinomycetemcomitans (A.a.)* in the pathogenesis of severe chronic and aggressive periodontitis is not completely known. Identification of *A.a.* subtypes may add some important information to the understanding of the pathogenesis of severe periodontal infections. This study compares subtypes of *A.a.* in two groups of periodontal patients with a different ethnic background.
Methods: 193 Patients (94 Germans, 99 Koreans) with aggressive or severe chronic periodontitis participated in the study. Microbiological analysis of pooled samples from subgingival plaque was performed with a laboratory real-time PCR-test for *A.a.* (University Hospital of Jena, Germany). In patients that had been tested positively for *A.a.,* microbiological differentiation of *A.a.* subtypes (A–F) was performed in the same lab.
Results: Prevalence of patients that could be tested positively for A.a. with the real-time PCR were comparable in both groups (Germans: 27.0 %, Koreans: 22.2 %). In the German patients, the subtypes that could be detected most frequently were C (32.0 %), B (24.0 %) and A (20.0 %), in the Korean patients, the subtype distribution was different with subtypes C (63.6 %) and D (18.2 %) counting for more than 80 % of the complete subtype spectrum.
Conclusions: Even if the percentage of patients tested positively for *A.a.* is identical in patients with different ethnic background, the distribution of *A.a.* subtypes may exhibit marked differences.

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Ref no: EUABS065890

Radiographic measurement of bony defects in periodontal patients with different ethnic background

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Objectives: This study compares the amount of bone loss in periodontal patients with a different ethnic background.
Methods: A total of 178 patients (89 Koreans, 89 Germans) participated in the study, after being diagnosed with either severe chronic or aggressive periodontitis. Standardized clinical examination consisted of measuring pocket probing depths, attachment level, bleeding on probing (BOP) and gingival bleeding index (GBI). Linear distances on panoramical radiographs were measured in 0.1 mm increments with the help of a Schei-ruler. For every tooth, 2 different reference points were defined mesially and distally: alveolar crest (AC) and bony defect (BD). Bone loss at these reference points was calculated as a percentage of total rooth length.
Results: There were no statistically significant differences between Koreans and Germans with regard to age and gender distribution. All clinical data including inflammation- and hygiene indices, pocket probing depths and attachment levels were not different in both groups. In the lower jaw, the relative amount of bone loss was higher in Koreans. These differences were more pronounced when BD was used as a reference point (7.13–15.31% difference). In the upper jaw, differences between Koreans and Germans varied between -4.65 % and -2.75 %.
Conclusions: The two groups with an ethnic diverse background exhibited marked differences in the amount of relative bone loss with a clear tendency towards larger bony defects in Korean patients.

187
Ref no: EUABS065828

Evaluating the knowledge of internal specialists about the relation of diabetis and periodontal diseases in Tabriz, Iran

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Introduction: Diabetes mellitus is a chronic, prevalent and increasing disease which has side effects and potential for causing different diseases. Periodontal disease, Dental Caries, tooth loss and xerostomia are among the common related diseases. The purpose of this study was to evaluate the awareness level of the internal specialists about the relationship of the diabetes disease and periodontal diseases.
Methods: In the present research the awareness level of all the 30 internal specialists of Tabriz, Iran was studied and the reliability of the questionnaire was measured by korrenbakh test.

Results: The amount of the internal specialist's awareness was average about the relationship of the diabetes disease and periodontal diseases. There is high correlation between the practice history length and the awareness level. The amount of the female specialist's awareness is also more than males and the specialists who are a member of the faculty of university have high levels of awareness in relation to the other group. The reliability of questionnaire was about 70%.
Conclusion: Due to the importance of the oral health and hygine it is strongly recommended to place a special section on the internal residency educational curriculum.

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Ref no: EUABS065833
Effects of menstrual cycle on periodontal health and gingival crevicular fluid markers
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Aim: Variations in the circulating levels of female sex hormones affect the response of the gingival tissues to dental plaque. The aim of this study was to evaluate the effect of hormonal changes occurring in menstrual cycle on plaque accumulation, gingival inflammation and gingival crevicular fluid (GCF), interleukin 6 (IL-6), Prostaglandin E_2 (PGE_2), tissue plasminogen activator (tPA) and plasminogen activator inhibitor-2 (PAI-2) levels.
Materials: Twenty five gingivitis patients and 25 periodontally healthy subjects having regular menstrual cycles were seen at menstrual (ME) (1–2 days of menstruation), ovulation (OV) (12–14 days) and premenstrual periods (PM) (22–24 days). GCF samples were collected and clinical parameters including plaque index (PI), papilla bleeding index were recorded at each menstrual period. GCF IL-6, PGE_2, tPA, and PAI-2 levels were determined by ELISA.
Results: Gingivitis patients had higher PI scores than healthy subjects, but PI were similar at ME, OV and PM for each group. In both groups, GCF volume insignificantly increased in PM and OV. GCF IL-6 levels were significantly elevated in gingivitis patients compared to healthy subjects, but both GCF IL-6 and PGE_2 levels unchanged in different menstrual periods. GCF tPA and PAI-2 levels were highest in PM and lowest in OV.
Conclusion: The present study suggests that changes in the sex steroid hormones during menstrual cycles might have a limited transient effect on the inflammatory status of gingiva.

189
Ref no: EUABS065855
The use of cone beam computed tomography in the management of external cervical resorption and periodontal lesions
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Aim: To report the use of cone beam computed tomography in the assessment of external cervical resorption and periodontal lesions.
Material and methods: Asymptomatic external cervical resorption lesions were diagnosed radiographically in 16 patients. Clinical examination in all the cases was unremarkable. Cone beam computed tomography scans revealed the true nature of the lesions in three dimensions.
Results: The resorption lesion in five cases was confined predominantly to the buccal aspect of the root; the lesions have not perforated into the root canal. In eight caes the cone beam computed tomography scan revealed that the resorptive lesion was more extensive than it appeared radiographically.
Conclusions: Considerable information was gained from each volumetric scan, as the acquired data images could be easily generated in any plane (for example, coronal and axial planes) using the available software. All the patients found the CBCT images extremely helpful in understanding their endodontic and periodontics problems.

190
Ref no: EUABS065399
Squamous cell carcinoma caused by a kind of smokeless tobacco "Maras powder": a case report
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It is known that the major risk factors in the etiology of oral squamous cell carcinomas are alchocol and tobacco. Other than cigarette smoking smokeless tobacco (ST) like betel quid, areca nut in Southeast Asia are considered carcinogen and strongly associated with various oral pre-cancerous lesions and oral cancers. In the South eastern region of Turkey a kind of smokeless tobacco called 'Maraş Powder' is used instead of cigarette. It is applied between the lower labial mucosa and gingiva. Mara's powder is obtained from a tobacco plant species known as Nicotiana rustica L. and the ash of wood. There is strong evidence that Maraş Powder use may play important role in the etiology of oral and pharyngeal carcinomas, gingivitis, leukoplakia, epithelial dysplasia in oral mucous membrane related to the period of use. This article presents a case of a 60-year-old male patient in whom the visible painless white lesion in the attached gingiva was first noticed during the periodontal examination and finally diagnosed to be a squamous cell carcinoma in the mucogingival region of the left mandibular jaw. The patient was disease free after 22 months of follow-up. The case report indicates that lesions which might be tumours require special attention because of their early invasion of bone and even earlier diagnosis is necessary for an improved survival rate. It also emphasizes the important role of dental professionals especially periodontists who deal with periodontal diseases.

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Ref no: EUABS065403
Gene expression of peripheral blood leukocytes in gingivitis and periodontitis
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Aim: At present, there is no reliable method to detect individuals who are susceptible to periodontal disease progression. This study aims to determine the pattern of peripheral blood lymphocyte (PBL) gene expression in subjects with chronic periodontitis or gingivitis.
Method: Blood samples were collected from participants with gingivitis [$n = 10$, PPD < 3 mm, BOP & no radiographic bone loss (RBL)] and moderate to advance periodontitis [$n = 10$, six sites with BOP& PPD > 5 mm, RBL]. Polymerase chain reaction (Real-time reverse-transcriptase PCR) was performed on 84 cyto-

kine genes with RNA from PBLs. Data analysed was performed using the $\Delta\Delta C_t$ based fold-change software (SA BioScience^{TM}).
Results:

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Ref no: EUABS065411

Correlation between IL-1 β and metalloproteinase-8, 9 and TIMP-1 in the peripheral blood and saliva of patients with chronic periodontitis

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Background: Proinflammatory cytokines, including interleukin 1-β, and enzymes destroying the collagen matrix, matrix metalloproteinases (MMPs) play a key role in the etiopathogenesis of periodontal disease. The aim of this study was an evaluation of selected proinflammatory (IL-1β, MMP-8, MMP-9) and anti-inflammatory (TIMP-1) agents' levels in peripheral blood and saliva in healthy individuals and periodontal patients, as well as evaluation of the correlation between these agents.
Methods: The study group consisted of 36 individuals with chronic periodontitis. The control group consisted of 15 individuals, without inflammatory lesions in the periodontium. The clinical examination involved measurements of PD (mm), CAL (mm), PI (%), BI (%). In order to determine concentrations of selected compounds, 8 to 10 ml of blood from the elbow vein were taken and 5-ml samples of mixed stimulated saliva were collected from all patients. The measurements of IL-1β, MMP-8, MMP-9 and TIMP-1 concentrations were carried out by ELISA with the use of monoclonal marker antibodies from R&D Systems (Quantikine).
Results: The study indicated a significantly higher IL-1β concentration and a significantly lower MMP-8 concentration in peripheral blood of individuals with periodontal disease compared with healthy ones. The observed correlation between IL-1β and MMP-9 concentrations in peripheral blood was strong, whereas that between IL-1β and TIMP-1 and between MMP-9 and TIMP-1 was weak.

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Ref no: EUABS065462

Single nucleotide polymorphism studies in periodontitis in Hungarian population: methodological basis

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Objectives: Genetic factors have crucial role in the development of periodontitis. Our strategic purpose is to map the single nucleotide gene polymorphisms (SNP) involved in its development in the Hungarian population.
Methods: DNA was isolated from oral mucosal scrapings collected from patients and healthy individuals. A combined polymerase chain reaction (PCR) and restriction fragment length polymorphism analysis (RFLP) were set and optimized to identify individual SNPs. Subsequently the SNPs were genotyped by TaqMan SNP Genotyping Assay Kit.
Results: DNA isolation was carried out and eight SNP procedures that are putatively involved in periodontitis (IL1A-889 C/T, IL1B-511 C/T, IL1B+3954 C/T, IL6-174 C/G, IL10-1082 G/A, TLR4-299 G/A, TLR4-399 T/C, TNFA-308 A/G) were optimized. With the investigated eight polymorphisms of six genes homozygotes even for the rare alleles in six cases, were found, while in two others the rare allele appeared only in heterozygous form. All of these SNPs are potential risk factors in the development of the different forms of periodontitis.
Conclusion: The results of this primarily methodological study show the feasibility of such approaches. On this basis population studies with large sample numbers will be carried out in the future to compare polymorphisms of a large number of genes in healthy and diseased groups. That may promote the early identification of risk factors in periodontitis. Supported by the Hungarian Scientific Research Fund (OTKA 72385).

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Ref no: EUABS065475

TLR4 and IL-18 gene variants in chronic periodontitis

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The aim of the study was to assess if the genotypes in the *Toll-like receptor 4* (*TLR4*) and in the promoter of *IL-18* are associated with increased susceptibility to chronic periodontitis (CP). 109 CP patients and 73 healthy controls were genotyped for c.896A > G and c.1196C > T (*TLR4* gene) and for c.-368G > C and c.-838C > A (*IL-18* promoter). The allele frequencies as well as the frequency of combined genotypes were compared between the study groups. There were no statistical differences in allele frequencies within the four variants between the groups. All study subjects were further classified into carriers and non-carriers of at least one variant of both genes. A logistic regression analysis adjusted for gender, smoking, and age showed no association between gene variant carrier status and periodontal status (OR = 2.1, 95% CI 0.6–7.1). However, the comparison of periodontitis severity in *IL-18*/*TLR4* positive and negative CP subjects showed significant results. The percentage of teeth with clinical attachment loss ≥ 5 mm was 77.5% and 58.3%, respectively ($P \leq 0.014$, *t*-test). Our results did not show that functionally relevant *IL-18* and *TLR4* variants have a major effect in CP susceptibility. Considering the low numbers of CP patients carrying the composite genotype (10 out of 109 patients), a comparison of the periodontitis severity in *IL-18*/*TLR4* positive and negative CP subjects has to be interpreted cautiously. This approach should be verified in studies with larger samples.

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Ref no: EUABS065477

Correlation between oral malodour parameters

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Objective: To explore, in patients complaining of halitosis, the correlation between organoleptic assessments, intra-oral parameters, and VSC levels registered by a portable sulphide monitor (Halimeter®) or a portable gas chromatograph (Oral Chroma®).
Material and methods: Only patients with an intra-oral cause of malodour or halitophobia were enrolled ($n = 280$). Organoleptic scores were given by a trained and calibrated judge, before measurement of VSC levels (Halimeter®, Oral Chroma®), to avoid any bias.
Results: Significant correlations were found between the organoleptic scores, the Halimeter® values and the Oral Chroma® data *($R = 0.74$ for organoleptic* versus *Halimeter®; 0.66 for organoleptic* versus *Oral Chroma®; 0.63 for Halimeter®* versus *Oral Chroma®)*. Moreover, the organoleptic scores, the Halimeter® levels and the Oral Chroma® values were significantly correlated

with: the amount of tongue coating, the probing pocket depth, and the oral hygiene level. The sensitivity and specificity of the Halimeter® (with regard to the organoleptic score) for detecting patients with and without oral malodour were 63% and 98%, respectively. For the Oral Chroma® the sensitivity was 69% and the specificity 100%, respectively.
Conclusions: Measurement of VSC levels (Halimeter®, Oral Chroma®) can only be used as an adjunct to the organoleptic scoring. Thanks to the high specificity of these devices, the absence of malodour in case of halitophobia can be proven.

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Ref no: EUABS065483
Characteristics of 2000 patients visiting a multidisciplinary halitosis clinic
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Objective: Examination of 2000 patients at the multidisciplinary halitosis consultation has led to a unique database. Analysis of these data offers new insights regarding aetiology and characteristics of bad breath.
Material and methods: All patients (n = 2000) visiting the breath odour clinic (University Hospital Leuven, Belgium) were examined by the same clinician in a standardized way by means of a questionnaire, clinical examination, organoleptic assessment and measurement of sulphur compounds (Halimeter®).
Results: Most patients had complaints for many years (mean: 7 yrs, SD: 8 yrs; for 40% of the females and 33% of the males > 5 years). For 76% an intra-oral cause was found (with tongue coating (43%), gingivitis/periodontitis (11%), or a combination (18%) being most often encountered). Pseudo-halitosis/halitophobia was diagnosed in 16% of the subjects. ENT/extra-oral causes were detected in 4% of the patients.
Conclusions: This large scale study shows that in most patients complaining of halitosis there is an intra-oral origin. However there is a small part of patients with an extra-oral cause and a growing percentage of patients with halitophobia, which should not be underestimated. A multidisciplinary approach remains therefore the method of choice to come to the right diagnosis and treatment for each individual patient.

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Ref no: EUABS065594
Psychological features and hygiene habits in supportive periodontal therapy results
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The goal of this study was to verify the hypothesis that psychological features are related to periodontal status and to inquire into the possible pathway through which it occurs. Twenty-six patients in good systemic health and only suffering from gingivitis were recruited and treated with an 18-month follow-up. Clinical recordings, including full-mouth plaque score (FMPS), full-mouth bleeding score (FMBS), were assessed at baseline and at three-monthly periods to the end of the follow-up period. Details on oral health, attitudes and oral hygiene habits were stated. Psychological profiling was stated. Unfavorable FMPS statistical outcome was found in correlation to anxiety (A) and depression (D). Using the oral hygiene self-reported test, we observed a favorable FMPS statistical significant outcome in relation to the number of daily brushings (DB), use of toothpaste (UT), awareness of role of dental plaque (ADP) and professional dental care (PDC) and need of dental examination (NDE). Moreover, we had a favorable FMBS outcome in relation to DB and ADP. Combining psychological and hygiene tests a favorable FMPS outcome was maintained in relation to UT, ADP, PDC and NDE. Favorable FMBS was maintained in relation to DB and ADP. The study supports the hypothesis that A and D can play an unfavorable role on the periodontal status. Most probably, but not exclusively, psychological features can influence hygienic behavior through discontinuity and irregularity.

198
Ref no: EUABS065225
Oral hygiene practices and periodontal condition in a group of adult population from Constanta city
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Aim is to determine plaque-control practices self-reported, correlated with oral hygiene and periodontal condition in a group of adult population from Constanta city.
Method: Medical and dental history was collected in 2007 from 273 subjects aged 18–69 years, using structured questionnaire. Oral hygiene and periodontal status were assessed using the Community Periodontal Index probe.
Results: It shows higher distribution (55.88%) of young patients (18–34 y). Oral Hygiene Index was found to be correlated with the subjective opinion of the patients (r = 0.5101, P < 0.0001). Dental floss is used only by a low number of subjects (20.21%). The distribution of current smokers is high-53.11%. The proportion of patients who do not complain about gingival bleeding is higher in smokers (50.78%), compared with 38.62% in non smokers. Age is correlated with periodontal disease in nonsmokers (rho = 0.641, P < 0.0001, CI = 0.501– 0.748), and in smokers (rho = 0.593, P < 0.0001, CI = 0.414–0.729).
Conclusion: The conclusions of the study show positive connection between objective and the subjective evaluation of oral hygiene status, which depends on the correctitude of self-reported plaque control methods. Smokers are more subjected to develop periodontitis at an early age, although clinical parameters may be different.
Clinical relevance: It provides baseline information on oral health status and periodontal condition, which requires improved education, early diagnosis of periodontitis.

199
Ref no: EUABS065229
Influence of individual brightness and contrast enhancement on validity of radiographic measurements of infrabony defects
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Aim: Comparison of the validity of radiographic measurements of infrabony defects with and without digital enhancement of brightness and contrast based on individual decision of the examiner.
Methods: In 41 periodontitis patients (19 female) from 23 to 73 years of age (51.7 ± 11.6 years) 50 standardized radiographs of 50 infrabony defects were obtained. All radiographs were digitalized. Using a PC program (Sidexis, Sirona) the linear distances cemento-enamel junction (CEJ) to alveolar crest (AC), CEJ to bony defect (BD), and depth of the infrabony component (INFRA) were measured twice: 1) without digital enhancement (W), 2) after use of contrast and brightness enhancement (E)

according to the free judgement of the radiographic examiner. Intrasurgical bone measurements served as gold standard. Validity of measurement without or with digital enhancement was compared.

Results: Both radiographic measurements underestimated the intrasurgical gold standard for CEJ-BD (W: 1.1 ± 1.8 mm, $P < 0.001$; E: 1.0 ± 1.9 mm, $P = 0.001$). For CEJ-AC (W: 0.2 ± 2.5 mm; E: 0.5 ± 2.6 mm) and INFRA (W: 0.4 ± 2.4 mm; E: 0.6 ± 2.5 mm) both measurements came close to the gold standard. Statistically significant differences between W and E regarding validity could not be observed.

Conclusions: The measurement tool used in this study provided measurements of periodontal bone loss of high validity in infrabony defects. Individual enhancement of brightness and contrast failed to improve the validity of the measurements.

200
Ref no: EUABS065206

Internal bacterial colonization of implants: comparison of culture and real-time PCR

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Objective: Colonization of the implant internal cavity results in a bacterial reservoir which might be associated with periimplant bone loss. Bacterial samples from newly inserted implants and up to 12 months were analyzed by two identification methods.

Methods: A total of 330 paper point samples from the internal cavity of 90 implants in 26 patients were harvested immediately after insertion (baseline) and after 3, 4 and 12 months. Samples were evaluated by Real-Time PCR (meridol®Perio Diagnostics, GABA) and anaerobic culture on selective media for detection of *Aggregatibacter actinomycetemcomitans (Aa), Fusobacterium nucleatum (Fn), Porphyromonas gingivalis (Pg), Prevotella intermedia (Pi)* and *Tannerella forsythia (Tf)*.

Results: At baseline 2 samples were positive. With cultivation after 3, 4 and 12 months 1.4%, 15.9% and 81.1% of the samples were found positive for at least one of the 5 bacteria. The respective results for Real-Time PCR were 9.5%, 34.1% and 72.2%. Kappa resp. Spearman's correlation coefficients for quantitative results of both methods were 0.50 resp. 0.51 for *Aa*, 0.31 resp. 0.37 for *Fn*, 0.41 resp. 0.53 for *Pg*, 0.29 resp. 0.33 for *Pi* and 0.46 resp. 0.52 for *Tf* (Spearman all: $P = 0.01$).

Conclusions: Although there was only a moderate agreement between both microbiological identification methods at individual sites, both revealed a progressive colonization of the implant internal cavities by periopathogenic bacteria. The study was supported by GABA International.

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Ref no: EUABS065187

Clinical, microbiological and genetic features of periodontium in patients with aggressive and chronic periodontitis

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The aim of the work was to evaluate differences in quality and quantity of microbial biofilm in patients with positive and negative IL-1 genotype, both in aggressive and chronic periodontitis (AP and CP respectively), and to examine correlations between clinical and microbiological parameters in both patients' groups. 35 individuals (12 with AP and 23 with CP) were enrolled into study. Full mouth examination was performed, using standard clinical parameters of periodontal state (pocket depth, clinical attachment loss, plaque and bleeding indices). Cells of buccal mucosa were sampled using sterile cotton swab to examine IL-1 gene complex. 9 periodontal pathogens from orange, green and red complex (acc. to Socransky et al.) were sampled using paper points and evaluated with the use of real-time PCR technique. Results showed increased titers of *F.nucleatum* in IL-1 genotype positive patients with AP, and increased number of *P.gingivalis* in IL-1 genotype positive patients with CP. Several bacterial pathogens correlated with clinical parameters in patients with AP (mainly *T. forsythia, C. rectus and P. intermedia*), same bacteria correlated with clinical state in CP patients (though more clinical parameters were involved). Results show significant correlation between IL-1 genotype and the composition of subgingival plaque, as well as between bacteria colonizing periodontal pocket and the clinical state.

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Ref no: EUABS065193

Gingival crevicular fluid levels of RANKL and osteoprotegerin in chronic periodontitis patients

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Background and aims: Recent findings have suggested that osteoclastogenesis is directly regulated by receptor activator of nuclear factor-kappa B ligand (RANKL) and its decoy receptor, osteoprotegerin (OPG). This study aimed to identify and quantify the levels of OPG, RANKL in the gingival crevicular fluid (GCF) of patients with chronic periodontitis and to clarify possible correlations with disease severity.

Material and Methods: Plaque index (PI), gingival index (GI), probing depth and clinical attachment level (CAL) were recorded. GCF samples were collected using a paper strip from inflamed deep pockets (pooled sample of four sites with PD≥ 5 mm from each quadrant) (IDP) and also from inflamed shallow pockets (pooled sample of four sites with PD≤ 3 mm from each quadrant) (ISP) in 34 patients ($n = 68$). ELISA was performed to determine GCF levels of RANKL and OPG.

Results: All of the clinical parameters were significantly higher in IDP ($P < 0.05$). In ISP, GCF levels of RANKL were significantly lower than IDP ($P < 0.05$). The increased GCF levels of OPG were found in ISP, when compared to IDP, but the difference was not significant ($P > 0.05$).

Conclusion: The results of this study suggested that the GCF levels of RANKL and OPG may vary with disease severity and these key regulators of osteoclast differentiation may play major role in the bone loss mechanisms seen in chronic periodontitis patients.

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Ref no: EUABS067037

Is the C-reactive protein (CRP) a risk marker for acute myocardial infarction in patients with periodontal disease?

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A relation between cardiovascular disease and periodontal disease has been evidenced in different studies. This research pretended to determine whether ultra sensitive CRP associated with Periodontal Disease is a risk marker for AMI and if US-CRP associated with AMI is higher than this with Periodontal Disease.

In a case-control study 158 patients were analyzed, 77 had AMI and 81 were healthy individuals. Inclusion criteria: patients with and without AMI with at least 10 teeth. Exclusion criteria: patients with any active infection, antibiotic therapy or corticosteroids at the examination. US-CRP, glycaemia, lipid profile, cholesterol tests and periodontal diagnosis were done. The mean age for test group (77) was 56.2 (IC95% ± 2.56) and for control group (81) was 38.6 (IC 95% ± 2.98) ($P < 0.05$). 59 in test group and 72 in control group were no smokers. 40 in test group and 29 in control group showed severe chronic periodontitis. A Kolmogorov-Smirnov test showed that US-CRP didńt have a normal behavior, therefore a Box – Cox transformation was done. After that, there were significant differences ($P < 0.05$) **in the US-CRP levels** in both groups. When the analysis of the severity of the disease was done, there were no significant differences. Despite these no significant differences in the US-CRP values between the groups and regard to the severity of the disease, AMI patients with Periodontitis showed higher levels of US-CRP than the control group.

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Ref no: EUABS067017

The detection of dental calculus with flourescence spectroscopy compared to a periodontal probe – a clinical trial

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Aims of the report: The aim of this controlled clinical study was to compare the ability of flourescence spectroscopy to detect calculus in deep pockets with that of a periodontal probe.
Materials and methods: Three investigators examined 15 patients. Of each patient 2 single-rooted teeth and 2 molars with probing depth of > 5 mm and signs of bleeding on probing were evaluated. Values of each patient were collected within 2 weeks using a split-mouth-design. During the first examination (day 1) one side of a split-mouth investigation was assigned for detection of calculus on 6 areas per tooth (mb, b, db, dl, l, and ml) with flourescence spectroscopy (test group) the other side was examined with a periodontal probe (control group). The second examination (day 14) contra-lateral sides were assigned to test and control groups.
Results: A total of 310 probing-sites were examined with both devices. The periodontal probe tested positive for calculus on 97 sites whereas 199 sites tested positiv with flourescence spectroscopy. Though no correlation could be drawn between both methods, inter-examiner reliability was 85% (min/max 82%–90%).
Discussion and conclusion: The attempt of a binary classification of both methods in a clinical trial is critical in its results. Without optical control calculus on root surfaces cannot be reliably assessed. Therefore the design of this clinical trial cannot qualify one testing method to be superior from one another.

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Ref no: EUABS066565

Association of glutathione-s-transferase gene polymorphisms with chronic periodontitis in Portuguese caucasians – a pilot study

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Background: Glutathione-S-transferase T1 (GSTT1) and glutathione-S-transferase M1 (GSTM1) are enzymes involved in cellular processes of inflammation, aging and degenerative diseases. Its associations with several inflammatory diseases have been reported. Gene deletion (null polymorphism) is characterized by the absence of specific enzymatic activity and subsequent reduced ability to detoxify. Lack of functional activity of detoxifying enzymes may lead to increased tissue damage by oxidative molecules. The aim of this study was to analyze a possible association between *GSTT1* and *GSTM1* polymorphisms and chronic periodontitis (CP) in a Portuguese Caucasian ethnic group.
Methods: This study included 32 patients with CP, identified according to established clinical criteria, and 81 controls. DNA was isolated from saliva using ORAgene™ kit and *GSTM1* and *GSTT1* polymorphisms were studied by PCR.
Results: A significant association was found between CP and *GSTM1*-null genotype ($P = 0.025$), with OR = 2.5 (IC 95%: 1.1–5.9). There was no statistically significant difference found for *GSTT1*.
Conclusions: Within the limits of this study, the *GSTM1*-null variant is statistically associated with the chronic form of periodontitis, suggesting it could be used as a genetic marker of susceptibility for CP. Nevertheless, a larger population study should be performed to confirm these preliminary results and a possible association with aggressive periodontitis should also be investigated.

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Ref no: EUABS066567

Analysis of *IL1A-889* and *IL1B+3954* polymorphisms as genetic susceptibility test for chronic periodontitis in Portuguese caucasians

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Background: Polymorphisms of the interleukin-1 (*IL1*) gene may accentuate the host inflammatory response to plaque in periodontitis. The severity of chronic periodontitis (CP) has been reported to be associated with the presence of at least one R allele for both *IL1A*-889 and *IL1B*+3954 gene polymorphisms (composite positive genotype), which are used in genetic susceptibility testing. The purpose of this study was to analyze the association of *IL1A* and *IL1B* gene polymorphisms and CP in a Portuguese Caucasian group and evaluate its utility as a genetic susceptibility test for CP.
Methods: 32 patients with CP, identified according to established clinical criteria, and 81 controls were included in this study. DNA was isolated from saliva (ORAgene™). *IL1A* (rs1800587/-889) and *IL1B* (rs1143634/+3954) polymorphisms were genotyped by PCR and RFLP.
Results: There were no statistically significant differences between patients and controls for any of the genotype or allele frequencies analysed. Furthermore, expression of the composite genotype was also investigated in these subjects and no significant difference was found.
Conclusions: The lack of any association between the IL1 polymorphisms and CP, in the presented population, brings into doubt the usefulness of these candidate genes as markers of susceptibility to this form of periodontitis in the Portuguese population. Nevertheless, a larger population study should be performed to validate these preliminary results.

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Ref no: EUABS066860
Chronic periodontitis effects on pulpal sensibility in humans
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The aim of this study was to evaluate the effect of chronic periodontitis on pulpal sensibility in humans.
Methods: Ninety-eight single-root teeth free of caries, attrition, erosion and fillings with no history of periodontal treatment within six month were evaluated. Registration of clinical attachment loss (CAL), probing depth (PD) and gingival recession (REC) were manually recorded by one calibrated examiner from 6 sites. Periodontal bone loss (PBL) was classified as mild (3–4 mm), moderate (4–6 mm) and severe (> 6 mm) by one blind examiner using a manual precise pachymeter (Mitutoyo, Japan) on standardized radiographs. Pulpal sensibility (PS) was verified using a cooling air spray following manufacturers protocol.
Results: CAL, PD and REC presented significantly lower values for positive PS compared to negative PS ($P < 0.01$, Student's t). Significant negative correlations were observed between PS and CAL, PD and REC ($P < 0.01$, Pearson's). Significant odds ratios were found for CAL≥ 8 mm, PD≥ 5 mm and REC≥ 5 mm, increasing the risk of negative PS ($P < 0.02$). PS was positive in 100% of the teeth with mild or moderate PBL and negative in 48% of the teeth with severe PBL, which showed significant differences to mild and moderate PBL ($P < 0.05$, Kruskal–Wallis).
Conclusion: It might be suggested that severe chronic periodontitis may significantly influence pulpal sensibility to thermal stimuli. Further histological studies in humans would be needed to confirm these findings.

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Ref no: EUABS066861
Influence of anticoagulants in gingival bleeding
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Background: Bleeding on probing is considered a clinical sign of gingival inflammation and it has been related to the existence of microulcerations in juntional epithelium, to the fragility of the underlying vascularization and to injuries produced by certain bacterial products. Clinically, it has been used in periodontal exploration as a parameter of destructive periodontal activity. Various modifying factors have been studied but there are not references about the effect of anticoagulants drugs. The main objective of the study is to assess the effect of acenocoumarol on bleeding on probing in a sample of anticoagulated patients of the Stomatology Service in the ''Hospital Provincial de Valencia''.
Materials and methods: One hundred patients taking different dosis of acenocoumarol were studied. Periodontal exploration was made including bleeding on probing (BP), plaque index (PI), gingival index (GI) and average depth on probing (ADP.
Results: BP was 42.7%; patients showed a PI of 2.4, GI of 1, 6 and the ADP was 4 mm. There was a statistically significant relationship between PI, GI, APD and BP. There were not statistically significant differences in BP depending of anticoagulant therapy dose.
Conclusions: Despite having no statistically significant relationship between acenocoumarol doses and bleeding on probing, it would be a required study which assesses the degree of coagulation instead of the dose.

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Ref no: EUABS066868
Dimensions of periodontal phenotype
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Background: Despite the clinical importance, it has still not clarified the dimensions of phenotypes until now. The aim of this study is to dimensionally define: what are a thin biotype and a thick biotype? And to determine which are morphological parameters that influence on its classification?
Material and method: We performed evaluations: clinical examination at upper central teeth and its gingiva; x-ray scanning using parallelized profile technique (Alpiste 2004) measuring: the bone table, the width of connectivity insertion, biological width, gingival overlap; photographic examination of the second sextant calculating the ratio of high/width of clinical crown and papillas of third sextant. The photographs were assessed by two expert observers who determined the periodontal biotype.
Results: The sample was 78 individuals. Table bone, width keratinized gingival and overlapping were higher values in thick periodontium. The scalloped, the size of the crown and the distance from the ridge to the cementoenamel junction were the higher values for periodontium fine.
Conclusion: There is a great variability inter investigated characteristics indicating that there is no single factor that influences at the determination of the biotype. The age of the study population, together with the low percentage of agreement between the two observers indicate the difficulty of finding extreme cases of periodontal biotype and the influence of environmental factors in their modification.

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Ref no: EUABS066874
Periodontitis risk assessment at the federal university of Bahia – Brazil
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Background: Based on available scientific evidence a six parameters diagram has been developed to determine the risk of periodontitis occurrence and progression (Lang & Tonetti, 1996). The aim of this study was to assess in the first visit the individual multilevel risk of subjects seen at the Periodontology Department of the Federal University of Bahia.
Material and Methods: The polygon of risk diagrams of 480 consecutive subjects ranging in age from 14 to 97 years (mean 48.51 years, ± 14.90), 66.93% being females and 33.06% males, were manually taken by undergraduate dental students between 2006 and 2008.
Results: Because of incomplete information mainly regarding lack of radiographs, 28 diagrams were excluded. Out of 452 patients, 59 (12.6%) were considered of low risk; 160 (35.4%) presented moderate risk and 233 (52%) showed high risk. The most prevalent high risk factors were bleeding on probing (30.27%) followed by tooth loss (29.74%) and bone loss/age (22%). Only 1.2% and 3.7%, respectively, were smokers and had diabetes.
Conclusions: The high risk profile of the study population converges to global findings at Periodontology Clinics. Improvements on the modifiable factor of oral hygiene are highly suggested to be implemented at the public health system. The printout of an individual periodontal risk hexagon showed to be

very informative to periodontal patients and to the undergraduate dental students.

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Ref no: EUABS066896

Influence of a fluoride-releasing light cure resin on IL-6 and TNF- α in orthodontic patients with fixed appliance

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The aim of this study was to evaluate the effect of a new fluoride-releasing light cure resin (Ortho-Coat, Pulpdent Co, MA, USA) on cytokine levels at orthodontic patients. Twenty adolescent patients with fixed orthodontic appliances for 1 year were selected. Three teeth per subject (teeth with bracket, band and empty control tooth) were sampled separately. Following periodontal prophylaxis and oral hygiene motivation, baseline clinical indices (PI, GI, Probing depth (PD) and BOP) were recorded and gingival crevicular fluid (GCF) samples were collected and repeated at 1st week and 1st month. After records, test group (*n*: 10) received Ortho-Coat application. GCF IL-6 and TNF-α levels measured with ELISA. Mann-Whitney U, Paired t test and Pearson correlation analysis were used. In baseline, clinical variables were positively correlated with IL-6 and TNF-α in test group than control. Test group had higher PD scores after Ortho-coat application. There were no differences in IL-6 and TNF-α level of all teeth during study period. In both groups, IL-6 and TNF levels were correlated to each other at baseline and after application. At 1st month, all clinical variables correlated positively to IL-6 and TNF in tooth with bracket in both of group. These results suggest that application of new fluoride-releasing light cure resin (Ortho-Coat) around teeth with fixed orthodontic braces does not appear to have a statistically significant effect on clinical indices or GCF IL-6 and TNF-α level.

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Ref no: EUABS066936

Evaluation of periodontal stress for molars treated with uprighting orthodontic technique

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Aim: Evaluation and improving of periodontal status through alignment of the molars in mesial tipping.
Material and Method: We studied 26 patients with age between 26–35 years old, with extracted 3.6 and 4.6 from different reasons and second molar rotated and mesialized. Periodontal clinical exam revealed thin gingival tissue of 3–4 mm (21 cases, 80, 7%) on the mesial surface of the second molar. Radiographic exam revealed the enlargement of the periodontal space and the resorbtion of the interproximal mesial bone. The treatment for the second molar consisted in fixed orthodontic devices and different uprighting techniques depending on the periodontal status of the patient: 50% with uprighting spring, 30% with orthodontic implant and 20% with tip back technique.
Results and conclusions: After treatment it was noticed an improving of the gingival tissue status, the reduction of the periodontal pockets with 2 mm and the reshaping of the bone.

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Ref no: EUABS066927

Socioeconomic position at birth and in adulthood and generalised aggressive periodontitis

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Background: Socioeconomic position (SEP) is a well established factor associated periodontal health. The dynamics of how SEP affects health over time remains unclear.
Aim: It is hypothesised that the highest risk for generalised aggressive periodontitis (GAP) is to be born in low SEP and remain in low SEP in adulthood (LL), followed by individuals born in low SEP and currently in high SEP (LH), born in high SEP and currently in low SEP (HL), and individuals born in high SEP and currently in high SEP (HH).
Methods: An unmatched case-control study conducted at The Royal London Hospital Institute of Dentistry included consecutive patients referred by their general dental practitioners. Cases had a minimum of 4 pocket depths greater than 5.5 mm involving at least 4 mouth-sextants ($n = 153$). Controls had pocket depths not greater than 3.5 mm ($n = 80$). Age was limited to 20–40 years old. Participants had a minimum of 24 teeth and no systemic diseases. Self-completed validated questionnaires were used to collect data on SEP in adulthood and at birth. Ethical approval and consent were obtained. Odds ratio and 95% confidence intervals were computed using simple and multiple logistic regression analysis.
Results: A hierarchy of risk to GAP was confirmed following the respective odds ratio between the hypothesised LL, LH, HL and HH groups: 4.2 (1.2, 14.4), 1.2 (0.3, 4.7), 1.1 (0.3, 4.3).
Conclusion: SEP in early life was associated to GAP in adulthood, suggesting long-lasting effect.

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Ref no: EUABS066970

The investigation of *Entamoeba gingivalis* and *Trichomonas tenax* in the subgingival bacterial plaque of periodontitis patients: a preliminary study

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Objective: The aim of this study is to determine the prevalence of *Entamoeba gingivalis* and *T. tenax* and the correlation, if any, between these ptotozoa and periodontal status in periodontitis patients.
Materials and Methods: The study consisted of 80 periodontitis patients (35 male; 45 female) ages ranged between 19 and 69. Bacterial plaque samples were collected with a curet and analysed for *E. gingivalis* and *T. tenax* by direct microscopy and culture. Plaque index, gingival index, probing pocket depth and bleeding on probing measurements were taken in relation to the sampling area. A questionaire about the smoking and socioeconomic status and the use of antibiotics in the preceding month were also filled.
Results and conclusion: Out of a 255 bacterial plaque samples, the prevalence of *E. gingivalis* and *T. tenax* were 52 (%20.39) and 5 (%1.96), respectively. The rate of *E. gingivalis* were %18.85 and %21.8 for the probing pocket depth levels of 4–6 mm and ≥ 7 mm, respectively. *T. tenax* was only found at one site with the probing pocket depth of 5 mm and at 4 sites with the probing pockets ranged between 7 and 11 mm in depth. There were no statistically significant correlation between the presence of *E. gingivalis* and *T. tenax* and periodontal, smoking and socioeconomical satus of the periodontitis patients.

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Ref no: EUABS066085

Oral condition and microbiological profile of young cleft lip and palate patients

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Objectives: To evaluate the oral and microbiological status of cleft lip-palate (CLP) children.
Methods: Forty-one CLP subjects (18 girls), 4–18 years, and 41 matched controls (HLP) participated. Oral hygiene, caries, white spot lesions and periodontal condition were examined. MS and lactobacilli levels (CRT, Ivoclar-Vivadent) were determined in all patients while subgingival plaque of 21 patients per group was cultured.
Results: PlI was significantly higher in CLP (1.03) than HLP (0.77) ($P < 0.01$). Caries prevalence was similar between groups (dmfs: 7.24 versus 8.38; DMFS:3.00 versus 3.40 respectively) while most white spot lesions were in the CLP group (85%, $P < 0.001$). GI was not significant between groups. CPITN: 31% of CLP had score 3, compared to 5% of HLP. Differences between teeth neighbouring the cleft, teeth in the cleft and corresponding teeth in HLP were not significant for GI and bleeding, but were significant for PPD ($P < 0.01$). 78.1% of the CLP group had MS $> 10^5$ CFU while for the HLP group 68.3%. No significant differences in the subgingival flora between the two groups with or without orthodontic therapy, but teeth in cleft presented higher isolation frequencies and mean % of periodontopathic bacteria.
Conclusions: CLP children had poor oral hygiene and a tendency for caries and periodontal disease compared to controls. They would benefit from an intensive preventive program to avert the establishment of a pathogenic microbiota as well as the progression of white spot lesions to caries.

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Ref no: EUABS066110

Description of the method for a study of detection of biomarkers in saliva periodontitis through a technical immunohistochemistry

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Recent studies in immuno-pathogenesis of periodontal disease have focused on the conduct of the role of cytokines as molecules capable of mediating the biological activity of destruction on inflamed tissues. Thus, studies have shown that saliva and fluid contain inflammatory biomarkers specific to the different physiological aspects of periodontitis and thus the qualitative changes in the composition of these biomarkers have significance in the diagnosis and treatment of this disease. Pro-inflammatory mediators such as interleukin-1β (IL-1β), interleukin-1α (IL-1 α) interleukin-6 (IL-6), the tumor necrosis factor-α (TNF-α) among others were identified as biomarkers inflammatory response in periodontal disease when tissue and bone destruction accurs. The target population for the study of research should be aged between 30 and 60 years, of both genders and with a clinical diagnosis of periodontitis. For the calibration technique, saliva and crevicular fluid samples have been taken to make a smear slides in a random sample of 10 subjects with and without periodontitis. These samples were processed using an immunohistochemistry technique whose effectiveness hasn't yet been proved by any scientific studies. After the calibration study, the immunohistochemistry technique suggests efficiency in detection of pro-inflammatory mediators. The immunohistochemistry technique is an effective method for the detection of salivary pro-inflammatory mediators in periodontal disease.

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Ref no: EUABS066102

Velscope® direct fluorescence visualization system on oral precancerous lesions

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Aim: The purpose of this study was to determine whether a system of direct fluorescence visualization can evaluate the oral dysplastic alterations.
Method: Seventy precancerous lesions of 52 patients attending the regular check-up were examined by VELscope® (British Columbia, Canada). Cytobrush cell collector (Med-Scand Medical, Malmö, Sweden) was used to obtain cells from all lesions ($n = 70$). Next, oral incisional biopsies were taken from the areas showing loss of autofluorescence ($n = 20$) as gold standard for histopathological examination.
Result: Among 70 lesions, EC was negative for dysplasia or neoplasia in 50 samples and dysplastic cells were diagnosed in 20. Specificity of cytological and histopathological diagnoses of benignity was 100 %. VELscope system was effective in distinguishing between normal and abnormal tissue but was unable to distinguish between different types of abnormal tissue.
Conclusion: Within the limits of this study it was seen that direct fluorescence visualization may be of help for examining suspected lesions, however more number of cases are still needed to support our results.

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Ref no: EUABS066098

Detection of oxidized low-density lipoproteins in gingival crevicular fluid from the dental patients

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Recent studies have shown a correlation between periodontitis and hyperlipidemia epidemiologically. Increased plasma oxidized low-density lipoprotein (OxLDL) level is a well-known risk marker for cardiovascular diseases. However, the possible involvement of OxLDL in GCF has not been studied. In this study, we established a procedure to measure OxLDL in GCF and examined if OxLDL is involved in gingival inflammatition. Human GCF samples were collected from healthy sulci (pocket depth < 4 mm, $n = 44$) and periodontal disease sites (pocket depth≥ 4 mm, $n = 16$). The amounts of OxLDL and inflammatory cytokines in GCF were measured by ELISA and cytometric bead array, respectively. Human gingival epithelium cell line, Ca9–22 cells were cultured in media containing OxLDL, and then the amounts of interleukin (IL)-8 and PGE_2 produced were measured using ELISA. ApoB was detected in GCF by western blot and OxLDL was found to be present in GCF by ELISA. The OxLDL/LDL ratio in GCF was 13.6-times higher than that in plasma. Amount of OxLDL in GCF correlated with the IL-8 and IL-1β levels. Production of IL-8 in Ca9–22 cells was significantly increased, in the presence of OxLDL, but not with native LDL or acetylated LDL. Among oxidized lipids and chemically modified LDL, 7-ketocholesterol enhanced IL-8 production. This

is the first report showing increased OxLDL levels in GCF correlate with periodontal inflammation at least in part by increasing IL-8 production in gingival epithelial cells.

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Ref no: EUABS066122

Risk factors for periodontitis for pregnant women in France and impact of the definition used

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Little is known about risk factors for periodontitis in pregnant women and there is a lack of uniformity concerning the definition of periodontitis in epidemiology.
Aims: To study the risk factors for periodontitis in a large population of pregnant women in France using 4 definitions of periodontitis.
Methods: EPIPAP is a case-control study carried out to determine whether maternal periodontitis was associated with preterm birth according to causes. Our study population included 946 control women. 3 definitions of periodontitis were studied with > 2 affected teeth: pocket depth > 4 mm, clinical attachment level > 3 mm and the combination of these 2 criteria. A 4th definition has considered the involvement of 4 teeth. Associations between periodontitis and risk factors were studied for each of these 4 definitions.
Results: The frequency of periodontitis varied between 12 and 38% according to definition. A significant association was observed between all definitions of periodontitis and high quantity of calculus and smoking before pregnancy (aORs 1.30–2.27). Low educational level (aORs 1.38–1.55), last dental visit > 3 years (aORs 1.46– 1.52) were significantly associated with 2 definitions. Age (> 35 years) was only associated with attachment loss.
Conclusion: This study showed that frequency and risk factors for periodontitis differed according to the definition used. Risk factors associated with periodontitis in pregnant women are similar to those observed in general population.

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Ref no: EUABS066130

Investigation of relation between periodontal disease and coronary heart disease

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Objective: The numerous studies have been reported whether there are relations between periodontal disease (PD) and coronary heart disease (CHD), identifying PD as a risk factor for CHD. The aim of the study was to investigate an association between PD and CHD.
Methodology: The study was conducted in 200 patients admitted in Prishtina Periodontology and Oral Medicine Department of Dental School and Internal Clinic, Cardiology Ward of Medical Faculty. Periodontal parameters included: probing depth, clinical attachment loss, bleeding on probing according to the criteria previously established by Machtei. The coronary parameters included: electrocardiogram, stress test and echocardiography, and from the total number of the patients 26 were with CHD and 174 without CHD.
Results: From the total number of the patients 11.5% have healthy periodontium, 33% have gingivitis and 55.5% have periodontitis. The prevalence of periodontitis in patient with confirmed CHD is 92.31%, while it is significantly lower in patients without CHD. The correlation between PD and CHD tested with chi-square test showed statistical significance ($P < 0.01$). Odds ratio (OR) for patients with periodontitis to have CHD is 12, compared with patients without periodontitis.
Conclusion: Results of this study showed that periodontal disease might be considered as a risk factor for coronary heart disease.

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Ref no: EUABS066159

Periodontal conditions of patients with iron-deficiency anemia and the relationship between the serum and gingival crevicular fluid ferritin levels

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Background: The aim of this study is to evaluate the periodontal status of patients with iron deficiency anemia (IDA) and the relationship between the serum and gingival crevicular fluid (GCF) ferritin levels.
Materials and methods: Nineteen female patients with IDA (30.05 ± 7.26 years) took part in the study (Group A), Healthy 20 females (29.50 ± 6.17 years) served as the control (Groups B). At baseline, clinical periodontal indices (probing-depth, clinical attachment level, plaque index and gingival index), hematological findings were recorded and GCF samples were taken. Serum iron (SI), serum ferritin (SF), hemoglobin (Hb) and total iron binding capacity (TIBC) was used for hematological parameters. At the third month control, clinical periodontal indices were recorded and analyses were repeated.
Results: All clinical periodontal parameters were similar in both groups at baseline records. During follow-up period, all clinical indices decreased in both groups ($P < 0.05$) but gingival index in group A did not change. The TIBC reduced after 3 months of treatment in both groups ($P < 0.05$). The GCF ferritin concentration also decreased ($P < 0.05$) but total amounts of ferritin in GCF not changed. No association was found between the serum and GCF ferritin levels.
Conclusions: Present findings showed that serum ferritin levels do not correlate with the GCF ferritin levels and IDA is not a direct risk factor for periodontal diseases

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Ref no: EUABS066040

A FcγRIIb gene polymorphism associated with expression level on b lymphocytes affects the antibody response against Porphyromonas gingivalis

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Background and Aims: FcγRIIb is one of IgG receptors and can suppress the activation of B lymphocytes, when it is cross-linked to BCR via immune complexes. Our previous study suggested genetic polymorphisms of FcγRIIB to be risk factors for periodontitis. In this study, we investigated whether FcγRIIb polymorphism nt645 + 25A/G was associated with the expression level of the receptor on leukocytes and/or affected the specific antibody response against bacteria in patients with periodontitis.
Methods: FcγRIIb nt645 + 25A/G genotypes of 20 healthy Japanese subjects were determined with direct sequencing. FcγRIIb

expression levels on peripheral blood leukocytes were analyzed with flowcytometry. Anti-*Porphyromonas gingivalis* IgG in sera from 37 patients with periodontitis were quantified with ELISA.
Results: Expression levels of FcγRIIb on B lymphocytes were significantly higher in subjects with FcγRIIb nt645 + 25A/A genotype than in those with nt645 + 25G/G (Mann–Whitney *U*-test, $P = 0.02$). Patients with FcγRIIb nt645 + 25A/A showed higher mean loss of attachment ($P = 0.002$) and lower anti-*Porphyromonas gingivalis* IgG concentration in sera compared to patients with nt645 + 25G/G ($P = 0.01$).
Conclusion: Higher expression level of FcγRIIB in subjects with nt645 + 25A/A genotype may induce the lower activity of antibody production against *Porphyromonas gingivalis* and cause severe periodontitis.

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Ref no: EUABS066027

Association of body mass index with recession in patients with periodontal disease in Trinidad and Tobago

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Aims: To determine the relationship of Recession with Body Mass Index (BMI) among a screened population of periodontal patients at the School of Dentistry, UWI (Univ. of the West Indies), Trinidad.
Method: In 2008, periodontitis patients presenting ($n = 130$) were clinically assessed and BMI obtained with a hand held monitor. Three patient recession groups were identified: mild (R1) of 1, 2 or 3 mm, moderate (R2) of 4, 5 or 6 mm and severe recession (R3) of > 7 mm. Diet and oral hygiene measures were also recorded.
Results: The sample consisted of 41% males and 59% females. Ethnicities included 39% African, 33% East Indian and 27% of mixed decent. The age range was from 16 to 79 years with 61% in the range from 40 to 59 years of age. The mean BMIs for the three groups were 25.3(R1), 27.5(R2) and 27(R3). A statistically significant higher percentage, of obese (BMI≥ 30) patients, was in the moderate and severe group compared to the mild group (Pearson Chi-Square; *P*-value 0.045). In this population 92% used solely a manual toothbrush. Presently 70% used a hard or medium toothbrush. The habit of bone chewing was reported by 66% of this population with 14% doing so at least three times a week. Sixty percent of patients reportedly chewed sugarcane in the past.
Conclusions: The data reveals a high percentage of abrasive diet and oral hygiene habits which are possible aetiological factors in recession. Persons with increased recession may tend to be more obese in this Caribbean population.

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Ref no: EUABS066014

Evaluation of interdental brushes for the Eastman interdental bleeding index

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Aim: To assess an interdental brush for performing the Eastman Interdental Bleeding (EIB) Index and compare it to the Bleeding on Marginal Probing (BOMP) Index in natural gingivitis.
Materials and Methods: Thirty volunteers who presented with gingival inflammation were recruited at their semi-annual recall appointments for this study. All had intact papillae and no pocketing which exceeded 4 mm. Contra-lateral quadrants (1&3 or 2&4) were randomly tested for bleeding with one pass-through with a light interdental brush or with a perio probe inserted approximately 2 mm into the gingival sulcus. The presence or absence of both bleeding and plaque was then recorded. Correlation coefficients were calculated for the EIB and BOMP.
Results: The BOMP Index showed a mean average score of 51.77%. The EIB Index score was 49.87%. The correlation coefficient of the 2 indices was .69($P < 0001$).
Conclusions: The good correlation between the 2 indices shows that EIB Index performed with an interdental brush can be considered a viable alternative to the BOMP Index. The advantages of using an interdental brush to test for bleeding include: atraumatic manipulation of the papillae, ease of application, less patient discomfort during the evaluation, and the possibility of having patients monitor their own progress at home.

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Ref no: EUABS065971

Idiopathic gingival fibromatosis: a case report

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Idiopathic gingival fibromatosis is a fibrous benign lesion, neither hemorrhagic nor exudative of gingival tissue. It's incidence it's the same in men and women and in both alveolar archs of mandible and maxilla. Clinically it appears as a gingival overgrowth with a firm and hyperplasic gum. It exist two types, a nodular form with the presence of multiple tumorations in gingival tissue and a symmetric form with a uniform overgrowth of the gingival tissue being the most common form. Its treatment consists in oral hygiene instructions as well as periodontal treatment in addition of periodontal surgery treatment (Gingivectomy with internal/external bevel incision) or by using CO_2 laser or diodes laser. It's presented a case report diagnosed clinically and histologically of idiopathic gingival fibromatosis.

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Ref no: EUABS065991

Initial periodontal treatment and crevicular fluid interleukin-17, RANKL, osteoprotegerin levels

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Objectives: To evaluate effects of initial periodontal treatment on gingival crevicular fluid (GCF) levels of interleukin-17 (IL-17) soluble receptor activator of nuclear factor-kappa B ligand (sRANKL), osteoprotegerin (OPG) in smoker versus non-smoker chronic periodontitis patients.
Methods: GCF samples were obtained and clinical periodontal measurements were recorded from 10 smoker, 10 non-smoker systemically healthy chronic periodontitis patients before initiation of periodontal intervention and 4 weeks after scaling and root planing (SRP) from four sites in single rooted teeth with probing depths > 5 mm. Williams periodontal probe was used for clinical periodontal measurements. GCF samples were analysed by ELISA. Data were tested statistically by paired *t*-test, Wilcoxon test and Pearson's correlation analysis.
Results: All clinical periodontal measurements showed significant reductions 4 weeks after SRP (all $P < 0.001$). GCF volume, OPG total amount and concentration decreased in both smokers and non-smokers after SRP (all $P < 0.05$). IL-17 concentration increased with SRP ($P < 0.05$). sRANKL concentrations and total amounts did not differ between groups and did not change significantly ($P > 0.05$). IL-17 concentration correlated with sRANKL concentration both at baseline and after SRP ($P < 0.001$).
Conclusion: Initial periodontal treatment in smoker, non-smoker chronic periodontitis patients seems to similarly affect GCF concentrations of IL-17 and OPG.

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Ref no: EUABS065997

Gingival crevicular fluid PGE_2 and IL-1beta levels following initial periodontal treatment and adjunctive use of meloxicam

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Background: To assess effects of initial periodontal treatment and adjunctive meloxicam usage on gingival crevicular fluid (GCF) levels of prostaglandin E_2 (PGE_2) and interleukin 1-beta (IL-1ß) in chronic periodontitis patients.
Methods: Non-smoker 20 chronic periodontitis patients received 7.5 mg meloxicam and 20 patients received placebo tablets in a 1x1 regimen for 10 days together with scaling and root planing (SRP). SRP was performed on day 3 of drug intake. Clinical periodontal parameters were recorded and GCF levels of PGE_2 and IL-1ß were determined by ELISA at baseline and on days 3, 10, and 30 of drug intake. Data were analyzed statistically using non-parametric tests.
Results: Both groups showed statistically significant reductions in clinical periodontal measurements and GCF volume ($P < 0.05$). In both groups, GCF total amount of IL-1ß reduced significantly on days 10 and 30 of drug intake compared to baseline values ($P < 0.01$). Neither group showed significant changes in PGE_2 levels between any of the evaluation time points ($P > 0.05$). No significant differences were found between the study groups in GCF IL-1ß or PGE_2 levels ($P > 0.05$).
Conclusions: Initial periodontal treatment with or without adjunctive meloxicam resulted in significant improvements in clinical periodontal parameters in a similar manner. Similar short-term GCF levels of IL-1ß and PGE_2 do not provide support for adjunctive meloxicam usage in initial periodontal treatment of chronic periodontitis.

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Ref no: EUABS065978

Local application of chx in the treatment of severe generalised chronic periodontitis – clinical effects

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Aims: this randomized, prospective, double-blinded, placebo-controlled study aimed to evaluate clinical effects of the local periodontal therapy with the adjunctive use of subgingival release of chlorhexidine (Periochip®) before, and after active treatment.
Materials and methods: Twenty-four adults with severe chronic periodontitis (≥ 12 teeth with pocket depth (PPD) ≥ 5 mm) were randomized in two groups ($n = 12$). After a prophylaxis phase, in the test group (PC) Periochips® were inserted in pockets with PPD≥ 5 mm, whereas in the control group (PL) placebo chips were inserted in equivalent sites. After 10 days, subgingival scaling (SRP) was performed and new chips were inserted in the same sites. Parameters as PPD, clinical attachment level (CAL), plaque - (PLI) and papillary bleeding (PBI) indexes were assessed at baseline (T0), before SRP (T1), 1 month (T2), 3 months (T3) and 6 months (T4) after SRP. Differences between groups and times were tested by U test ($P < 0.05$).
Results: There was a gain of all clinical parameters in the two groups; however, the gain in CAL was higher in the PC group at all times. Thus, the mean difference of CAL between T0 and T4 was 1.17 mm in the PC group versus 0.79 mm in the PL group. The gain in CAL (T2, T3, T4 compared to T0) was significant only in the PC group ($P < 0.05$).
Conclusions: The data clearly showed that this form of local application of CHX enhanced the clinical results of the periodontal treatment. (Supported by Dexcel Pharma GmbH, Alzenau, Germany)

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Long-term influence of preoperative clinical indicators on results of periodontitis treatment

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Aims: The scope of this study was to investigate, longitudinally, the influence of clinical indicators on the progression of periodontitis and tooth loss after active periodontal therapy (Widman flap).
Material and methods: Thirteen male and 26 female patients (mean age at baseline examination 45.1 ± 9.5 years) with chronic

periodontitis were examined: medical and dental history; clinical measurements (Probing Pocket Depth, Clinical Attachment Level, Bleeding and Suppuration On Probing, Furcation Involvement and dental status) were performed at baseline, and at a follow up examination $\langle x \rangle = 13.8 \pm 5.0$ years (minimum 5 and maximum 23 years). On each tooth 6 measurements were performed twice. The data of a particular patient were indicated by mean, maximal and minimal values, whereas the properties of entire population were represented by the regression lines of these values.

Results: The coefficients of regression lines for pocket depth amount to: Kmax = 0.053, Kmean = 0.018 and Kmin = 0.008 mm/year. The corresponding values of CAL were 0.033, -0.0003 and -0.0055 mm/year respectively. Similar statistics were calculated also for BOP and furcation involvement. Tooth loss rate of entire population at follow up examination reached 0.31% of teeth/year. Smokers exhibited greater disease progression with regard to non-smokers.

Discussion and conclusion: Baseline deeper mean PPD exhibited greater increase in PPD, while greater CAL at baseline displayed greater loss at second visit.

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The assessment of antibiotic resistance for specific microorganisms to periodontitis

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Aims: Is to study the phenotypic resistance to antibiotics of some experimental monospecific biofilms (*Pseudomonas aeruginosa* and *Staphylococcus aureus*), from oral cavities with infections associated with periodontitis.

Material and method: The clinical and microbiological study was realized for 4 strains of *Pseudomonas aeruginosa and* 4 strains of *Staphylococcus aureus,* isolated in oral cavity with periodontitis, from 50 patients (2007–2008). The strains identifications was realised with automatic VITEK 2 system. Then, was determined the spectrum of sensibility to antibiotics (quinolones, aminoglicozides, carbapenems, cefalosporines) for planktonic cells, with diffusing method. Afterwards, were detected the diameters of inhibition areas to antibiotics, for the bacteria all-in agar and set beside with classical diffusing method.

Results: Experimental data for microbial biofilm all-in agar proved in fact that including the bacteria in the biofilm conducted to increase the antibiotic resistance (established by allowance of the diameters for inhibition areas, for both *Pseudomonas aeruginosa* and *Staphylococcus aureus*).

Conclusions: For *Pseudomonas aeruginosa* the quinolones and aminoglicozides proved more efficient, compared with the other two above mentioned antibiotics. Instead, for *Staphylococcus aureus*, the carbapenem is the most efficient to fight against bacteria included in biofilms, from all the tested antibiotics.

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Ref no: EUABS065961

Clinical and radiographic evaluation of bone regeneration following periodontal surgery in intrabony defects

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Limited clinical and radiographical analysis has been obtained following usage of anorganic bovine-derived hydroxyapatite matrix/cell-binding peptide (ABM/P-15) in intrabony defects. The aim of this study was to analyze clinical and radiographic effectiveness of ABM/P-15 in the treatment of deep intrabony defects. A total of 38 defects in 16 patients were assigned randomly and equally to a test (ABM/P-15) and a control (open flap debridement; OFD) group. Clinical measurements including plaque index (PI), gingival index (GI), bleeding on probing (BOP), probing depth (PD), gingival recession (GR), clinical attachment level (CAL) and standardized radiographs were taken at baseline and 12 months after surgery. Both treatment modalities produced a significant CAL decrease and PD reduction. At 1 year after therapy, the test sites showed a reduction in mean PD from 7.21 ± 1.36 mm to 3.00 ± 1.60 mm ($P < 0.001$) and a change in mean CAL from 7.26 ± 1.49 mm to 3.68 ± 1.77 mm ($P < 0.01$). In the control group the mean PD was reduced from 7.00 ± 1.86 mm to 2.26 ± 1.28 mm ($P < 0.01$) and the mean CAL changed from 7.53 ± 2.80 mm to 3.42 ± 1.90 mm ($P < 0.01$). No significant differences in any of the clinical parameters were observed between groups.($P > 0.05$) ABM/P-15 yielded significantly more defect fill than conventional surgery 12 months postsurgically.($P < 0.01$) The present study has shown that compared to OFD,ABM/P-15 appears to support greater improvements in hard tissue (bone fill) than soft tissue parameters (CAL and PD).

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Ref no: EUABS065937

Full-mouth disinfection as a therapeutic approach for generalized aggressive periodontitis: a clinical and microbiological study

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Background: In the literature only four studies evaluated the one stage full-mouth disinfection (OSFMD) as a therapeutic approach for generalized aggressive periodontitis (G-AgP). Their limitations were the small sample size and the data analysis. Therefore, the aim of the present study was to analyze 6-month clinical and microbiological outcomes of the OSFMD in G-AgP patients.

Materials and methods: Twenty-seven patients were recruited into this study. Clinical and microbiological parameters were collected at baseline, 3 and 6 months following the OSFMD. A patient-, tooth- and site-level analysis was carried out. Subgingival samples from moderate (4–5 mm) and deep (≥ 6 mm) pocket sites were analyzed using PCR for *Aggregatibacter actinomycetemcomitans*, *Prevotella intermedia*, *Porphyromonas gingivalis*, *Tannerella forsythia*, and *Treponema denticola*.

Results: The OSFMD resulted in significant improvement of whole-mouth clinical parameters for up to 6 months ($P < 0.001$). At 6 month-evaluation site-specific analysis showed a decrease by 61% in the number of sites with probing depth (PD) ≥5 mm together with a mean PD reduction of 1.52 ± 0.29 mm and 2.47 ± 0.25 mm in moderate and deep pockets, respectively ($P < 0.001$). The prevalence of periodontopathogens showed a marked reduction immediately post-treatment and, despite an increase over time, did not revert to the original values ($P < 0.05$).

Conclusions: The OSFMD protocol may be a viable approach to deal with severe G-AgP.

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Ref no: EUABS065939

Clinical and microbiological effects of the application of an elastase inhibitor in pockets: a pilot study

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Objective: Evaluation of clinical and bacterial parameters after local application of a leech-derived elastase inhibitor in periodontal pockets. The effects of this treatment were compared with those of a placebo.
Material and methods: Using a slow-release system, a leech-derived elastase inhibitor was applied for 27 days into deep pockets of periodontally diseased teeth in a clinical experiment with two volunteers. The periodontal attachment loss of these teeth was between 8 and 12 mm. The release of the elastase inhibitor and the inhibition of free Human Neutrophil Elastase (HNE) were controlled during the treatment period with substrate impregnated strips and adjusted when necessary. After 27 days, application of the inhibitor was ceased and the periodontal parameters were evaluated for 180 days in continuation. The effects of this treatment were compared with those of a placebo, administered similarly to other pockets of the same volunteers.
Results: It is concluded that both during the treatment period as well as during the follow-up period attachment level is greatly improved, sulcus fluid flow reduced, clinical healthness visibly restored and an impressive shift towards Gram-positive subgingival plaque bacteria composition took place. Similar changes were not observed in the placebo pockets.
Conclusions: These results suggest a beneficial effect of inhibiting elastase in periodontitis.

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Ref no: EUABS066015

The use of platelet-derived-growth factor enhanced with beta-TCP in periodontal regenerative therapy

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The objective of this study was to evaluate the effectiveness of rhPDGF growth-factor enhanced with beta-TCP in treatment of periodontal infrabony defects. Eleven patients with bilateral infrabony defects were participated in this study, using a split mouth design. Experimental group was treated with rhPDGF enhanced beta-TCP matrix (GEM 21S®), while the control group received a standardized open flap debridement (OFD). Several parameters, such as defect fill, bone resolution, change in clinical attachment level (CAL) and change in pocket depth (PD) were recorded at baseline, 6 and 12 month postoperatively, using an acrylic stent with referent points.Postsurgical measurements taken at 12 months showed a significant reduction in probing depth in rhPDGF enhanced beta-TCP matrix group (3.47 ± 1.31 mm), comparing to the OFD group (1.92 ± 1.27 mm). CAL was also significantly greater in experimental group (3.07 ± 0.98 mm), compared to the control group (1.75 ± 1.08 mm). Surgical reentry after 12 months resulted in a significantly greater defect fill in favor of the experimental group (3.62 ± 1.17) as compared to the control group (1.30 ± 1.14). The results of our study indicate that the use of rhPDGF growth-factor enhanced with beta-TCP (GEM 21S®), has a positive effect in periodontal regenerative therapy.

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Ref no: EUABS066017

The use of acellular dermal matrix in gingival recession treatment

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The aim of this study was to evaluate the effectiveness of acellular dermal matrix graft (ADM) versus connective tissue graft technique (CTG) in gingival recession treatment. Twelve patients with bilateral single or multiple gingival recessions of Miller's Class I or II, participated in this randomized clinical study. Experimental site was treated with ADM in combination with CAF, while the control site, received the conventional CTG treatment. Several parameters, such as gingival recession coverage (GRC), attached tissue width (ATW), clinical attachment level (CAL) and probing depth (PD) were measured at baseline and 6 months postoperatively. Six months following the surgery, experimental (ADM) and control (CTG) group showed no statistical difference in GRC, representing a 90.3% and 92.1% success rate respectively. No statistical significance was observed in PD and CAL among groups either ($P > 0.05$). The CTG group showed a significantly greater ATW gain (3.28 ± 0.47), compared to an experimental (ADM) group (2.17 ± 0.41). Both procedures proved to be effective in gingival recession treatment. However, the mean gain of attached tissue with was significantly more obtained using the conventional CTG technique.

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Ref no: EUABS066008

The contributions of periodontal treatment on the success of eradication therapy against gastric *Helicobacter pylori*

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The aim of this study is to examine the effect of concomitant periodontal treatment with triple antibiotic therapy compared to triple antibiotic therapy alone on the gastric eradication success rate of *Helicobacter pylori*.
Materials and methods: Seventy-two patients with gastric helicobacter infection enrolled in this study. Gastric helicobacter infection was confirmed by both rapid urease tests, tissue histology by performing endoscopy. The therapeutic regimen consisted of 30 mg/day lansoprazole, 750 mg/day metronidazole, and 400 mg/day clarithromycin administered for 2 weeks. 28 of these patients who were voluntered to have periodontal treatment made up of periodontal treatment group. Clinical indices, including plaque index (PI), oral hygeine index (OHI), probing pocket depth (PPD) and bleeding on probing (BOP), were assessed. The periodontal treatment consisted of oral hygeine instruction, scaling and root planning. Three months after completion of eradication therapy all 72 patients underwent control examination by urea breath tests to monitor the succes of the applied therapy.
Results: Our results showed that while triple antibiotic therapy with periodontal therapy resulted in 64 % success rate, the triple therapy only resulted in 46 % success rate. Although the difference was clinically significant it did not reached statistical significance ($P = 0.18$).
Conclusion: Concomitant periodontal therapy with triple antibiyotic may improve clinical outcomes.

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Ref no: EUABS066031

Reduction of viable organisms in aerosol produced during ultrasonic periodontal treatment: the efficacy of chlorhexidine digluconate

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Background: The aim of this study is to evaluate the efficacy of chlorhexidine digluconate as preoperative mouthrinse or lavage for ultrasonic scaler to the reduction of viable organisms in aerosol produced during ultrasonic periodontal treatment.
Materials and methods: Thirty patients were included & devided into 3 groups: I.control-no preoperative mouthrinse & tap water as lavage for ultrasonic scaler, II.test1-preoperative mouthrinse with chlorhexidine digluconate & tap water as lavage, III.test2-no preoperative mouthrinse & chlorhexidine digluconate as lavage. Each patients received scaling or subgingival curettage for 30 minutes. The concentration of chlorhexidine digluconate used was 0.1%. In test1, mouthrinse was performed for 1 minute. Before, during and after treatment, air sampling was performed for 7 minutes each with trypticase-soy agar plate. The numbers of colony-forming units were counted.
Results: The numbers of CFU sampled during treatment were 97 ± 14.0 in control, 73.1 ± 14.9 in test 1 & 44.5 ± 9.0 in test 2. The statistical difference among 3 groups was significant (one-way ANOVA with Bonferroni's correction, *P*-value: 0.0003). The numbers of CFU before or after Tx. were not different among 3 groups statistically.
Conclusion: Chlorhexidine digluconate used as preoperative mouthrinse or lavage for ultrasonic scaler can reduce the viable organisms in aerosol produced during ultrasonic periodontal treatment. The more organisms were reduced when chlorhexidine was used as lavage.

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Ref no: EUABS066038

Effectiveness of thymus vulgaris concentrated honey in wound healing after periodontal surgery

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Different systemic and local factors are effective in healing process. The purpose of this study is evaluation of efficacy of concentrated honey in wound healing process after MWF surgery and its effects on gingival and plaque indices. In this single blind clinical trial study, 10 patients needed MWF surgery minimally in two sextant areas of the mouth were selected. The patients were placed in honey or saline groups randomly. The patients as case group, after surgery, used honey, three times a day and each time 15cc of honey was placed on the surgery zone and rinsed with normal saline for 30 seconds after 30 minutes. In next surgery, the same patient as control group used normal saline to wash his or her mouth three times a day for 30 seconds. Loe & Sillness gingival and plaque indices in days 0, 1, 3, 7 and Landry healing index in days 1, 3, 7 after surgery were registered. Data were analyzed With SPSS statistical software by ANOVA, paired *t*-test and Repeated Measurement Test. Healing index was increased more noticeable in case group than control group ($P < 0.05$). Gingival index was more decreased in case group than control group ($P < 0.05$). In the end of the study the plaque index in case group was less than control group (insignificant).Usage of thymus Vulgaris concentrated honey has been effective in wound healing process after MWF Surgery and speeded wound healing and improved healing index. Also, it has improved the inflammatory conditions of gingival tissues.

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Ref no: EUABS066050

Trial in periodontal tissue regeneration using fibroblast growth factor-2: randomized controlled phase ii clinical trial (exploratory study)

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The options for medical use of signaling molecules as stimulators of tissue regeneration are currently limited. Preclinical evidence suggests that topical application of FGF-2 can promote periodontal regeneration. In this clinical trial, we examined for the first time the activity of FGF-2 to regenerate periodontal tissue in periodontitis patients and evaluated the safety of such induction in compliance with GCP guidelines. We used FGF-2 with 3% HPC as vehicle and performed a randomized double-blinded controlled trial involving 13 dental facilities. Subjects comprised 74 patients displaying a 2- or 3-walled vertical bone defect as measured ≥3 mm apical to the bone crest. Patients were randomly assigned to 4 groups: Group P, placebo; Group L, 0.03% FGF-2; Group M, 0.1% FGF-2; and Group H, 0.3% FGF-2. Each patient underwent flap operation during which we administered 200 μl of the appropriate investigational drug to the bone defect. Before and for 36 weeks following administration, patients underwent periodontal tissue inspections and standardized radiography of the region under investigation. As a result, a significant difference ($P = 0.021$) in rate of increase in alveolar bone height was identified between Group P and Group H at 36 weeks. No serious adverse events attributable to the investigational drug were identified. This clinical trial suggests that some efficacy can be expected from FGF-2 in stimulating regeneration of periodontal tissue in patients with periodontitis.

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Ref no: EUABS066061

Trial in periodontal tissue regeneration using fibroblast growth factor-2: randomized controlled phase ii clinical trial (dose-finding study)

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The evidence of preclinical and Phase II clinical trial (Exploratory Study) suggests that FGF-2 can promote periodontal regeneration.The purpose of this clinical trial was to confirm the activity of FGF-2 to regenerate periodontal tissue in periodontitis patients, to evaluate the safety of such induction and to decide the optimal dose of FGF-2. We used recombinant human FGF-2 with 3% HPC as vehicle and conducted a randomized double-blinded controlled trial involving 25 dental facilities. Subjects comprised 253 patients displaying a 2- or 3-walled vertical bone defect as measured ≥3 mm apical to the bone crest. Patients were randomly assigned to 4 groups: Group P, placebo; Group L, 0.2% FGF-2; Group M, 0.3% FGF-2; and Group H, 0.4% FGF-2. Each patient underwent flap operation during which we administered 200 μl of the appropriate investigational drug to the bone defect. Before and for 36 weeks following administration, patients underwent periodontal tissue inspections and standardized radiography of the region under investigation. As a result, topical application of FGF-2 significantly ($P < 0.001$) enhanced the rate of increase in alveolar bone height at the defect region compared to Group P at 36 weeks. No serious adverse events attributable to the investigational drug were identified. This clinical trial demonstrates that FGF-2 can stimulating regeneration of periodontal tissue in patients with periodontitis and that the optimal dose of FGF-2 is 0.3%.

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Ref no: EUABS066147
Phase I periodontal therapy with ankaferd blood stopper in patients with hemorrhagic disorder
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Ankaferd Blood Stopper (ABS) is a unique folkloric medicinal plant extract, which has historically been used in Turkish traditional medicine as a hemostatic agent. ABS comprises a standardized mixture of plants which have some effects on the endothelium, blood cells, angiogenesis, cellular proliferation, vascular dynamics, and cell mediators. The aim of this case-series study was to report efficacy of local ABS application to manage bleeding following phase I periodontal therapy in patients with hemorrhagic disorder. Scaling and root planning were performed without plasma and factor transfusion, and then ABS was locally applicated in periodontal pockets of 8 patients with bleeding disorder. In this case-series study, no bleeding was detected after the periodontal therapy. Within the limits of this study, it has been concluded that ABS provides benefit for phase I periodontal therapy in patients with hemorrhagic disorder.

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Ref no: EUABS066153
Clinical and microbiological asses of local piperacillin in treatment of periodontal disease
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Aim: To asses a new local adjunctive antibiotic therapy with sodium piperacillin (Perio Film® Inibsa), in combination with scaling and root planning (SRP) in periodontal disease.
Material and methods: An split-mouth study was made in 10 periodontal patients with symmetric periodontal pockets.1650 periodontal sites, 828 study group (SG) (SRP & piperacillin) and 822 control group (CG) (SRP) were evaluated analyzing clinical probing depth (PD) and clinical attachment level (CAL); Microbiological analysis with semiquantitative PCR of *P. gingivalis, T. forsythensis, P. nigrescens, P. intermedia* & *A. Actinomycetemcomitans,* was made from microbiological samples at base line and after 1 month before therapy.
Results and discusion: There were non statistical significance differences in PD decrease between SG 0.613 and CG 0.587 $P = 0.16$; and CAL increase SG 0.517 CG 0.498 $P = 0.17$. Quantification and presence of *Pg, Tf, Pn, Pi* and *Aa* decreased before therapiy and didn't show differences between groups.
Conclusions: Within the limits of this study, local adjunctive treatment with piperacillin didn't show neither clinical nor microbiological better results than SRP.

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Ref no: EUABS066137
Effectiveness of autogenous cortical bone and bioactive glass in the treatment of intraosseous periodontal defects
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The aim of this 6-month prospective randomized clinical study was to compare effectiveness of autogenous cortical bone (ACB) graft and bioactive glass (BG) in the rejenerative treatment of intraosseous periodontal defect. Using a split-mouth design, 15 chronic periodontitis patients with probing pocket depths (PPD) ≥ 6 mm following initial periodontal therapy were randomly assigned to treatment with ACB or BG in contralateral dentition areas. Cortical bone particulate was harvested from the buccal cortical plate adjacent to the intraosseous defect. The criteria for the comparative study were preoperative and postoperative 6 months PPD, clinical attachment level (CAL), and radiological alveolar bone level. Both treatment modalities resulted in significant reduction in PPD, gain in CAL and radiological alveolar bone level compared to the preoperative values ($P < 0.01$). Reduction in PPD, gain in CAL, and alveolar bone level were 5.0 ± 0.3, 4.6 ± 0.2, 5.8 ± 0.4 in ACB group and 5.1 ± 0.3, 4.7 ± 0.3, 5.3 ± 0.4 in BG group, respectively. The differences between the two treatments were not statistically significant ($P > 0.05$). Within the limits of this study, it has been concluded that both ACB and BG treatments led to a significant and similar improvement in clinical and radiological parameters at postoperative 6 months in the treatment of periodontal defects. ACB graft, cheaper than BG, does not the need of second surgery region may be selected in periodontal regenerative therapy.

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Ref no: EUABS066140
The role of ankaferd blood stopper in phase I periodontal therapy
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Ankaferd Blood Stopper (ABS) comprises a standardized mixture of plants which have some effects on the endothelium, blood cells, angiogenesis, cellular proliferation, vascular dynamics, and cell mediators. The aim of the present study was to evaluate the adjunctive clinical effect of ABS when locally applicated with phase I periodontal therapy, compared to phase I therapy alone, in the treatment of chronic periodontitis. Using a splint-mouth design, 20 generalized chronic periodontitis patients were divided into 4 groups (n:10); Group 1: phase I therapy + ABS with probing pocket depth (PPD) 4–5 mm, Group 2: phase I therapy with PPD 4–5 mm, Group 3: phase I therapy + ABS with PPD≥ 6–8 mm, Group 4: phase I therapy with PPD≥ 6–8 mm. PPD, clinical attachment level, gingival index, plaque index, bleeding on probing (BOP) were recorded before treatment and at 2-, 7-, 14-, 21-, and 28th day treatment visits. No statistically significant differences were observed in any of the parameters investigated between groups 1 and 2 ($P > 0.05$). There was only significant difference in BOP values at 28-day between groups 3 and 4 ($P < 0.05$). Phase I periodontal therapy with/without ABS led to significant improvement in clinical parameters up to 28 days. ABS provides additional benefit for BOP values at 28-day in patients with PPD≥ 6–8 mm. Additional clinical studies detecting inflammatory mediators should be undertaken to further elucidate the role of ABS in periodontal therapy.

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Ref no: EUABS066101
Assesment of frankincense (*Boswellia serrata*) effectiveness on plaque-induced gingivitis
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Boswellia serrata is an herbal resinous gum obtained from trees of boswellia of Burseraceae species called frankincense. It has been used in traditional medicine for therapeutic objects since long time ago. Several studies have reported antiinflamatory and

curative effects of this material in treatment of some inflammatory diseases. Object of this research is clinical assessment of frankincense chewing gum efficacy on plaque–induced gingivitis. This randomized double-blind placebo controlled study was done in 75 volunteer high school students with moderate gingivitis. They chewed frankincense (extract or powder) containd or control chewing gums 3 times daily in two scaling and non-scaling groups. GI, PlI, BI and PPD for Ramfjord teeth were measured in the days of 0, 7, and 14 of study. Data were analysed in SPSS software by one-way ANOVA and tukey post-Hoc and student t tests. All of the indices within all of the groups have decreased in the end of study that was statistically significant in drug groups. Gingival index in all of the drug groups in comparing to the control had significant diffrrence, however bleeding index only in extract groups was significantly decreased. According to the results of this study frankincense has had considerable effectiveness in decreasing gingival inflamation and bleeding.

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Ref no: EUABS066094

The role of *Lactobacilli* as a probiotics in periodontal health

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Background: A ''probiotic'' is a live microbial feed supplement which beneficially affects the host by improving its intestinal microbial balance. The first probiotic species introduced into research were *Lactobacillus acidophilus* and *Bifidobacterium bifidum*. *Lactobacilli*, which have been of great interest to dental researchers for several decades, are the most common probiotic bacteria associated with the human gastrointestinal tract , therefore it may also play an important role in the eco physiology of oral microbiota. The purpose is to review the literature on the effects of probiotics as supplements on periodontal therapy and its beneficious results in clinical parameters.
Materials and methods: The literature search comprised the Medline database up to 2008. The key words ''probiotics'', ''lactobacillus'', ''dental caries'', ''bacteriotherapy'' and ''periodontal disease'' were used.
Results: Two literature reviews published in 2002–05 and control clinical trials published between 2001 and 2008 were used.
Conclusion: No consistent evidence supports the efficacy of probiotics as a treatment for chronic periodontitis but they are probably going to play an important role in combating oral problems.More randomized controlled clinical trial are needed to demonstrate the effect of probiotics in periodontal health and to assess the best means of administering probiotics and the dosages needed for different preventive or therapeutic purposes.

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Ref no: EUABS066095

Psychological aspects influencing patientś choice for local anesthesia in non-surgical periodontal therapy

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Objective: To determine psychological aspects influencing patientś choice between Oraqix® anesthesia gel (AG) and injected Ultracain® D-S forte (LA) during non-surgical periodontal therapy (SRP). Primary endpoints were dental anxiety (DA) and injection fear (IF). Secondary endpoint was the assessment of pain during periodontal probing and SRP.
Methods: Thirty eight patients with periodontitis were included in a randomised, single-blind, split-mouth, and cross-over clinical trial. Periodontal probing pain was recorded at baseline by visual analogue scale (VAS) and verbal-rating-scale (VRS). Additionally DA and IF were recorded at baseline. SRP was performed in two appointments; once with the use of AG, once with LA. Patients completed questionnaires as for the current and future preference of local anesthesia.
Results: Twenty two patients (58%) preferred gel, 14 patients (36%) preferred injection. One patient was indecisive, 1 patient missed the recall appointment. DA and IF ($P = 0.096$, $P = 0.254$, Mann-Whitney) had no influence on anesthesia choice. Pain perception in AG treatment correlated with choice for injection (VAS $P = 0.000$, VRS $P = 0.000$, Mann–Whitney).
Conclusion: No psychological aspect showed an influence on anesthesia choice. Assessed pain during treatment was found as only predictor for patientś preference for future local anesthesia use.

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Ref no: EUABS066975

Evolution of the surgical wound with the use of controlled release piperacillin (periofilmò) in resective periodontal surgery

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Background: Topical antimicrobials of sustained-release are an alternative to minimize risk infection after periodontal surgery.Piperacillin (PeriofilmÒ) controlled-release device is available. The aim of this study is to evaluate its effect on risk infection after resective periodontal surgery (RPS).
Material and methods: 11 patients were treated by RPS in 2 different sextants, assigning randomizely the use of PeriofilmÒ.Parameters evaluated were gingival and bleeding index, suppuration and necrosis .Microbiological samples were taken at days 0 and 7 after surgery and cultured at blood agar plates during 48 hours at 37ordm;C.
Results: In the control sextant 18% showed severe signs of inflammation and 27% presented tissue necrosis at early healing.The analysis of variance shows no statistically significant difference in morbidity between experimental and control side ($P = 0.076$).There were statistically significant differences between control and test sextant in terms of colony forming units for aerobic ($P = 0.0139$) and anaerobic ($P = 0.022$) at the day of the surgery, but at 7 days were not significant.
Discussion: Although inflammation in test side were slightly lower,the analysis of the morbidity presents large intersubject variability.The analysis of variance relating to the microbiologic culture showed initially statistically significant differences between case and control sextants.
Conclusions: Using topical antimicrobial were no statistically significant differences after 7 days of RPS.

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The efficacy of hygiene phase therapy in moderate to severe periodontitis by dental hygienist/therapy students

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Although periodontal treatment in dental hospitals is often carried out by students under the supervision of clinical tutors there is debate about the type of treatment that students are capable of providing and which patients can be safely seen on student clinics. There are no studies evaluating the efficacy of initial hygiene

phase therapy in patients with moderate to advanced periodontal disease in the hands of trainee hygienist/therapists. In this retrospective analysis we reviewed 3500 sites > 4 mm in 90 patients with BPE scores of 4 in at least one sextant who had had initial hygiene phase therapy provided by dental hygiene/therapy students of the School for Dental Care Professionals at Glasgow Dental School and for whom full mouth clinical probing depth charts and plaque and gingivitis charts were available.

Results: There was a mean reduction in plaque scores from an average of 54% to 25% ($P < 0.0001$) and the gingivitis scores were reduced from 21% to 8% ($P < 0.0001$). 78% of all sites improved as a result of initial therapy and the mean reduction in clinical probing depth was 1.13 mm while 30% of sites saw more than or equal to 2 mm reduction in clinical probing depths ($P < 0.0000$).

Conclusion: Moderate to severe periodontitis can be safely treated be student dental hygienists/therapists providing clinical supervision is adequate and acceptable clinical results can be achieved.

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Ref no: EUABS066954

Clinical and microbial evaluation of adjunctive Nd: YAG or Er: YAG laser in generalized aggressive periodontitis: a preliminary study

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This split-mouth study was conducted to compare clinical and microbial results of initial periodontal therapy alone or associated with Nd: YAG or Er: YAG laser in generalized aggressive periodontitis patients.Five patients were selected.Three quadrants were randomly assigned as:1) Scaling/root planing (SRP) only, 2) SRP + Nd: YAG laser (300 μm fiber, 2 W, 20 Hz, 1 minute), 3) SRP + Er:YAG laser (Conical quartz tip, 120 mJ, 10 Hz, 1 minute). These procedures were performed once a week for 3 times.One periodontal pocket with a probing pocket depth (PPD) 5–7 mm, gingival index (GI)≥ 2 and plaque index (PI)≥ 2 at each quadrant was selected for microbial sampling.The microbiological analysis were done to obtain total viable counts and proportions of obligate anaerobes and facultative anaerobes. Clinical and microbial parameters were determined at 0 and 6 weeks after therapy. There were statistically significant improvements in PI,GI and PPD ($P < 0.05$) after treatment in all groups.However, no statistically significant differences were found between the groups.The relative attachment gain was found to be elevated in the Er: YAG group and the difference between the Er:YAG and SRP groups was significant ($P < 0.05$). Microbial examination was not indicative of any statistically significant difference in/between the groups.This preliminary data suggests that adjunctive laser therapy appeared to have a similar effect to SRP on parameters. Further studies are needed in a larger patient scale and different periodontal disease groups.

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Ref no: EUABS066859

Preliminary study of topical melatonin effect in diabetic patients with periodontal disease

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Aim: Diabetes is a risk factor for periodontal disease. These pathologies are characterized by high production of free radicals and oxidative stress and also an inflammation increase. Melatonin is one of the most powerful antioxidant known. The aim of this paper is to assess the effect of topical application of Melatonin (orabase 1%) in periodontal tissues of diabetic patients with periodontal disease.

Materials and methods: 50 diabetic patients diagnosed of periodontal disease, before periodontal treatment. Topical Melatonin was applied once a day during 2 weeks over periodontal tissues to all patients. Clinical periodontal evaluation with Florida® Probe was made at base line and 2 weeks later including Gingival index (GI) and probing depth (PD).

Results: Mean GI decreased from 15, 70 at base line to 5, 50 ($P = 0.002$). Mean PD decreased 1.67 mm ($P = 0.003$).

Conclusion: This preliminary study showed a decrease of periodontal clinical index (GI and PD), like previous studies. Topical Melatonin decreased oxidative stress and inflammation and could be an adjunctive therapy in periodontal disease.

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Ref no: EUABS066932

Guided-tissue regeneration after the extraction of impacted lower third molars: a double-blind randomized clinical trial; preliminary results

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Aim: The aim of this clinical trial was to investigate the healing following guided-tissue regeneration of periodontal defects distal to the mandibular second molars after surgical extraction of horizontal or mesioangular third molars.

Patients and method: A double-blind randomized clinical trial was carried out on 22 patients who underwent the surgical extraction of a horizontal or mesioangular lower third molar. Twelve sites were treated with a collagen bioresorbable membrane and 10 sites with conventional scaling of the distal surface of the second molar. All patients were controlled at 1 month, 3 months, and 6 months after the surgical intervention. Clinical and radiological measurements were made. The data analysis was performed using the software SPSS v 15.0 for Windows.

Results: The data analysis show that at 6 months after the surgical intervention, the placement of barrier material result in statistically significant higher bone gain, measured on periapical radiographs, when compared to control group ($P < 0.05$). No statistically significant differencies were found on the probing depth and attachment level.

Conclusions: The placement of a resorbable membrane at the time of surgical extraction of impacted lower third molars seems to promote a radiographically detectable bone fill at the distal root surface of adjacent second molars. A larger number of patients are needed to assess the effect of the barrier material on the probing depth and the attachment level.

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Ref no: EUABS066909

Ozone therapy for the treatment of cyclosporin – an induced gingival overgrowth

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Ozone (O_3) has been used in medicine for more than 150 years. It has been claimed to be antimicrobially effective by producing active oxygen with a negative ionic charge that eliminates pathogenic microorganisms. The pathogenesis of cyclosporinA (CsA)

induced gingival overgrowth (GO) is not clarified. Plaque control has been shown to be of benefit to prevent GO. This study aimed to evaluate effects of O_3 therapy on clinical periodontal parameters (CPs) of renal transplant patients and to compare it with nonsurgical periodontal therapy. Four renal transplant patients with CsA induced GO were included to the study. At baseline CPs (Probing depth, Gingival Index (GI) and Plaque Index) were recorded (T1). A split mouth design was selected; one of each quadrant had O_3 (Q1), O_3 and scaling (Q2), scaling (Q3) or no treatment (Q4). A week later CPs were recorded (T2), full mouth scaling and O_3 therapy to selected quadrants were repeated. 20 weeks later treatment results were evaluated (T3). Baseline CPs were evaluated for each quadrant and no significant differences were detected. Different treatment protocols demonstrated no significant differences in CPs in any of the observation periods. Only GI values for Q3 decreased significantly from baseline at T3($P = 0.013$). The results of this study did not reveal any additional benefit of O_3 therapy on non-surgical treatment of CsA induced GO. More research is needed to refine the potential therapeutic effect of activated oxygen on drug induced GO.

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The efficacy of hygiene phase therapy provided by students for patients with moderate to severe periodontitis

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Platelet rich plasma in the treatment of multiple adjacent gingival recession defects

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Platelet-rich plasma (PRP) accelerates and enhances natural wound healing mechanisms. Thus, PRP can be a great adjunct to many periodontal and oral surgical procedures. The aim of this study was to evaluate the clinical effectiveness of coronally advanced flap (CAF) and PRP combination technique in the treatment of multiple adjacent gingival recession defects. Seventeen patients with bilateral Miller Class I/II gingival recessions participated in this study. Miller Class II recessions were treated with free gingival grafts to improve inadequate keratinized tissue. After three months, sites were randomly assigned into CAF or PRP + CAF groups. Clinical parameters were recorded at baseline and 6 months. Wound healing at postoperative 14th day was also evaluated. Six months after surgery, probing depth, recession depth and clinical attachment levels (CAL) improved for both groups compared to the baseline. The increase in keratinized tissue width was significant in the PRP + CAF. Mean root coverage was 65.86 ± 35.35% in the CAF group and 74.85 ± 34.65% in the PRP + CAF group; and although being clinically better for the PRP + CAF group, the results were statistically insignificant. Wound healing was better and complication occurrences were less than CAF group on 14th day ($P < 0.05$). Based on the results of this randomized controlled study, PRP may provide additional clinical benefits and accelerate wound healing compared to CAF alone in the treatment of Miller Class I recessions.

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Ref no: EUABS067006

Free oxygen radicals levels in nonsmokers with chronic periodontitis

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Neutrophils are stimulated in the presence of inflammation and release free oxygen radicals (FR) which caused oxidative destruction of cellular membranes and tissue damage. The aim of this study was to compare FR levels in healthy and inflamed gingival tissues of nonsmokers before and after initial periodontal treatment. Ten patients with chronic periodontitis (CP) and 10 periodontally healthy individuals as control group were participated. At least 2 single rooted teeth at each quadrant with probing depth (PD) 5–7 mm and gingival index (GI)≥ 2 were selected. All measurements were performed at baseline and 6 weeks after treatment and tissue samples were obtained from both groups. FR levels were analysed with luminol and lucigenin enhanced chemiluminescence assay. At baseline, plaque index, GI, PD were 2.19 ± 0.14, 2.20 ± 0.23, 5.20 ± 0.13 mm and after treatment 0.44 ± 0.19, 0.49 ± 0.14, 2.95 ± 0.38 mm, respectively. These reductions were significant ($P < 0.001$). Before treatment, FR levels (luminol, lucigenin) were 99.42 ± 33.01, 101.24 ± 36.88 auc of rlu/mg tissue and 52.45 ± 17.91, 66.35 ± 27.74 auc of rlu/mg tissue after treatment. These changes were significant ($P < 0.01$). In control group FR levels were 51.12 ± 15.20, 56.41 ± 8.83 auc of rlu/mg tissue which were close to posttreatment levels of FR ($P > 0.05$). Positive correlation was observed between lucigenin enhanced FR and GI levels before treatment ($r = 0.636$, $P < 0.05$). High levels of FR in the presence of CP were reduced by periodontal treatment.

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Changes in free oxygen radicals levels in smoker patients with chronic periodontitis

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Activated neutrophils release free oxygen radicals (FR) which result in tissue destruction. Cigarette smoke is a rich source of FR and promotes destruction. The aim of this study was to investigate FR levels in inflamed gingival tissues of smokers before and after initial periodontal treatment and to compare with healthy tissues of smokers. Ten patients and 10 periodontally healthy individuals were included. At least 2 single rooted teeth at each quadrant with probing depth (PD) 5–7 mm and gingival index (GI)≥ 2 were selected. Gingival tissue samples were obtained from both groups and measurements were recorded at baseline and 6 weeks after treatment. FR levels were detected with luminol and lucigenin enhanced chemiluminescence assay. Initially and after treatment plaque index, GI, PD were 2.11 ± 0.11, 1.94 ± 0.19, 5.25 ± 0.19 mm and 0.64 ± 0.15, 0.65 ± 0.17, 3.74 ± 0.41 mm, respectively. FR levels (luminol, lucigenin) were 98.62 ± 25.82, 117.11 ± 25.87 auc of rlu/mg tissue initially and were 59.79 ± 17.21, 63.90 ± 33.12 auc of rlu/mg tissue after treatment. There were significant reductions in these parameters ($P < 0.001$, $P < 0.01$). In healthy group, FR levels were 51.97 ± 17.71, 65.80 ± 19.87 auc of rlu/mg tissue,

significantly lower than baseline levels ($P < 0.01$) and similar to posttreatment levels of patients ($P > 0.05$). No correlation was found between FR levels and clinical parameters ($P > 0.05$). High levels of FR in the presence of inflammation can be reduced by periodontal treatment, even in smokers.

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Ref no: EUABS066989

Analysis of the susceptibility of *A. actinomycetemcomitans* to ciprofloxacin and amoxicillin, assessed during the progression of its biofilm

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Aggregatibacter actinomycetemcomitans (*Aa*) is a gram-negative coccobacillus part of the oral cavity normal flora and has been frequently associated with aggressive periodontitis. The objective of this work was to characterize different strains of *Aa* by serotyping and virulence factors characterization through amplification by PCR, and study the antimicrobial effect of Amoxicillin and Ciprofloxacin during bacterial biofilm formation. To evaluate the activity of the antibiotics during the development of the biofilm, we determined the progress of the formation of the *Aa* biofilm in an early (0–28 hours) and later phase (1–4 days). The different clinical isolates were incubated in BHI medium into 96-well cell culture plates. After a defined time of incubation, the biofilm was stained and quantified by spectrophotometry at A_{595} nm. In addition, the number of viable counts of each assay was measured. Although the serotypes and virulence factors was the same in some strains, there are differences in the ability to form the biofilm. The evaluation of the ciprofloxacin and amoxicillin action during the progress of the formation of the biofilm revealed that all clinical strains showed a significant MIC increase respect to that determined on planktonic cultures. Moreover, we observed an important augment of the formation of biofilm during the exponential stage of bacterial growth, relationship which is lost during later phase of the biofilm formation in all evaluated clinical strains.

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Ref no: EUABS066983

Inhibition of growth of *P. gingivalis* by a bacteriocin-like substance from *S. epidermidis*

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Periodontal diseases represent a group of infectious pathologies that affect the structures that surround the tooth. Although several bacterial species belonging to the oral microflora are considered potentially pathogenic, *Porphyromonas gingivalis* is recognized as the more important etiologic agent of periodontitis. The objective of this work was to determine the antimicrobial effect on *P. gingivalis* of different strains obtained from the normal flora. In order to determine the antimicrobial activity on *P. gingivalis*, bacteria were grown anaerobically in supplemented Columbia agar plates with 5% sheep blood and 10 ml/litre of hemin/menadione solution, and then a spot from different strains was added to the culture. The antimicrobial effect was determined by the appearance of growth inhibition zones, where only *Staphylococcus epidermidis* inhibited the growth of *P. gingivalis*. This antimicrobial activity was observed on several strains of *S. epidermidis* isolated from the normal flora, and its activity was specific to *P gingivalis* because other gram positive and gram negative bacteria tested were not sensitive on either anaerobic or aerobic culture conditions. The diffusible element extracted from the supernatant of stationary culture of *S. epidermidis* was purified obtaining an active fraction against *P. gingivalis*. Our results indicate that inhibition of *S. epidermidis* on *P. gingivalis* could be due to a bacteriocin.

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Ref no: EUABS066985

RankI and OPG mRNA expression in periodontitis

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Recent research studies focus on the involvement of two proteins, RANKL and OPG, in the progression of periodontitis. RANKL and OPG are considered as key regulators of osteoclast biology and alveolar bone metabolism in periodontal disease. The aim of this study was the evaluation of OPG and RANKL mRNA expression in patients with chronic periodontitis.

Materials and methods: Gingival tissue samples were obtained from subjects with clinically healthy periodontium ($n = 11$) and patients with advanced chronic periodontitis ($n = 14$) during periodontal surgery for clinical crown lengthening and treatment of periodontal defects, respectively. Periodontal disease status was determined by probing depth measurement, gingival index and radiographic examination. Total RNA was isolated from the gingival samples and 1 μg RNA was reverse transcribed to cDNA, followed by polymerase chain reaction (PCR) using specific primers for OPG and RANKL. The efficiency of reverse transcription was verified by the amplification of the GAPDH gene. The intensity of RT-PCR products was analyzed by a densitometer and was normalised to the intensity of the band for the housekeeping gene GAPDH.

Results: OPG mRNA was expressed by 8 (8/14) diseased and 10 (10/11) healthy samples while RANKL mRNA by 9 (9/14) diseased and 11 (11/11) healthy specimens.

Conclusions: It seems that there is a tendency of different OPG and RANKL mRNA expression by healthy and diseased samples.

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Ref no: EUABS066987

Effectiveness of three different therapies in the management of post periodontal scaling and root planning root hypersensitivity

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Background: Many agents and toothpaste formulas to treat dentinary hypersensitivity (DH) have been proposed. However, several studies show contradictory results. The DH is common in periodontal patients as a result of the periodontal treatment.

Goal: Compare the effectiveness in post periodontal scaling and root planning hypersensitivity of: A) 5% potassium nitrate toothpast, B) 5% potassium nitrate toothpaste + 1% mouthwash and C) 5% potassium nitrate toothpaste + 5% concentrated sodium fluoride.

Material and method: Thirty periodontal patients are randomly assigned to three study groups. A first test is done to determine the initial sensitivity. In each scaling and root planning visit two quadrants will be randomly chosen to do a sensitivity test.

Results: The Desensin® paste and Duraphat® combination is more effective. The differences were statistically significant. No statistically significant differences were found between the tested products after tactile and air blast stimulation.
Conclusions: The three products evaluated alone or combined, showed efficacy in reducing the post periodontal scaling and root planning root sensitivity. The most effective combination was potassium nitrate 5% toothpaste (Desensin Plus®) plus sodium fluoride 5% bioadhesive (Duraphat®). Patient factors like age, gender or smoking did not seem to modify root sensitivity.

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Ref no: EUABS065184

Vertical and horizontal dimensional evaluation of sutureless free gingival grafts

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Background: Tissue adhesives can be used as an alternative to conventional sutures in periodontal surgery. The free gingival graft (FGG) is used to increase the zone of keratinized attached gingiva. The shrinkage of FGG is a well-known clinical phenomenon. However, to our knowledge, there is no published study examined dimensional changes in FGG procedure with non suture technique.
Aim: To evaluate the shrinkage of FGG, either sutureless or with suturing technique, in both horizontal and vertical dimensions and calculate the changes in the surface area of the graft.
Method: The study was carried out on 27 patients who needed FGG. Patients randomly treated by FGG using suture (control) or tissue adhesive (test). The graft sizes were measured and the shrinkage of the graft was calculated at baseline and days 10, 21 and 180.
Results: There was a reduction in the horizontal and vertical dimensions at all time-points in both groups. This difference was statistically significant during the study period, except in test group at day 10 when compared to baseline. The graft area was also significantly decreased during the follow-up period compared to the baseline in both groups. Percentage of vertical shrinkage was significantly smaller in test group at day 10 and 180 when compared to baseline.
Conclusion: Present findings imply the tissue adhesives could decrease graft shrinkage in vertical direction and could be used as an adequate treatment modality in FGG procedures.

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The effect of azithromycin as an adjunct to non-surgical treatment on gingival crevicular fluid MMP-8 and TIMP-1 levels in chronic periodontitis

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Aim: The present study examined the effectiveness of azithromycin in combination with non-surgical periodontal therapy (SRP) on gingival crevicular fluid (GCF) matrix metalloproteinases-8 (MMP-8) and tissue inhibitor of MMP (TIMP-1) levels and clinical parameters over 6 months period in patients with chronic periodontitis (CP).
Methods: Twenthy eight CP patients were included in this randomized, double-blind, placebo-controlled, parallel-arm study. They were randomly assigned to azithromycin (500 mg, 3 days, 1x1) or placebo groups. Full-mouth clinical periodontal parameters were recorded and GCF samples were obtained from a single-rooted tooth. All clinical measurements and GCF sampling were repeated after SRP, at 2 weeks and at 1, 3 and 6 months. GCF MMP-8 and TIMP-1 levels were determined by IFMA.
Results: Significant improvements were observed in all clinical parameters in both groups over the 6 months period ($P < 0.05$). There were no statistically significant differences between the groups in clinical parameters ($P > 0.05$). GCF MMP-8 levels were significantly reduced in both groups, but no significant differences in MMP-8 and TIMP-1 levels were found between study groups ($P > 0.05$).
Conclusion: Within the limits of this study, it might be suggested that there is no adjunct effect of azithromycin in non-surgical periodontal treatment of chronic periodontitis patients.

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The effect of azithromycin as an adjunct to non-surgical treatment on microbiological parameters; GCF MMP-8, TIMP-1 levels in aggressive periodontitis

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Aim: The present study examined the effectiveness of azithromycin in combination with non-surgical periodontal therapy (SRP) on gingival crevicular fluid (GCF) matrix metalloproteinases-8 (MMP-8) and tissue inhibitor of MMP (TIMP-1) levels and microbiologic parameters over 6 months period in patients with generalized aggressive periodontitis (GAgP).
Methods: Twenthy eight GAgP patients were included in this randomized, double-blind, placebo-controlled, parallel-arm study. They were randomly assigned to azithromycin (500 mg, 3 days, 1x1) or placebo groups. GCF and microbiologic samples were obtained from a single-rooted tooth. All clinical measurements, GCF and microbiologic sampling were repeated after SRP, at 2 weeks and at 1, 3 and 6 months. Microbiological parameters were analyzed by RT PCR. GCF MMP-8 and TIMP-1 levels were determined by ELISA.
Results: Significant improvements were observed in all clinical and microbiological parameters in both groups over the 6 months period ($P < 0.05$). There were no statistically significant differences between the groups in clinical and microbiological parameters. GCF MMP-8 levels were significantly reduced in both groups, but no significant differences in *P. gingivalis*, *Aa*. and total bacteria count, MMP-8 and TIMP-1 levels were found between both groups.
Conclusion: It might be suggested that there is no adjunct effect of azithromycin in non-surgical periodontal treatment of generalized aggressive periodontitis patients.

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Ref no: EUABS065253

The effect of adjunctive ciprofloxacin therapy on clinical parameters, GCF IL–8 and sICAM–1 levels and periodontopathogens in chronic periodontitis

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Aim: To evaluate the effect of ciprofloxacin on clinical parameters, gingival crevicular fluid (GCF) contents of IL-8, sICAM-1 and five periodontopathogens (*Aggregatibacter actinomycetemcommitans, Porphyromonas gingivalis, Prevotella intermedia, Tannerella forsythia ve Treponema denticola*) in subjects with chronic periodontitis.

Materials and methods: The study population included 30 patients. The patients were randomly divided into two groups. One group was given ciprofloxacin (test group) and the other was given plasebo (control group). Pocket depth (PD), clinical attachment level (CAL), plaque index (PI) and gingival index (GI) were recorded and GCF samples and subgingival plaque samples were collected. At the 1st and the 3rd months these procedures were repeated.
Results: The total amount of IL–8 and the volume of GCF in the test group decreased from initial to the 1st and the 3rd month ($P < 0.05$). In both groups, all clinical parameters showed decreases from initial to the 3rd month ($P < 0.05$). When the frequencies of periodontopathogens were evaluated, there wasn't any difference between groups ($P > 0.05$).
Conclusion: The use of ciprofloxacin in addition to the initial periodontal therapy was effective on the amount of IL–8 and the volume of GCF, but any effect was observed on the amount of periodontopathogens.

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Ref no: EUABS065256

Retention of questionable or hopeless teeth in patients treated for aggressive periodontitis: a retrospective analysis

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Aim: To determine the long-term tooth loss of so-called questionable or hopeless teeth in patients with advanced aggressive (AP) and chronic periodontitis (CP).
Methods: Tooth loss was retrospectively evaluated in 34 patients (nteeth = 950) with AP (bone loss ≥ 50% at ≥ 2 teeth at an age of ≤ 35 years), who had comprehensive periodontal treatment over at least 10 years (mean 16.1 ± 4.5, range 11–26) of active and supportive therapy. The control group consisted of 34 patients (nteeth = 892) with CP (age≥ 40 years) and a mean treatment time of 16.3 ± 4.1 years (range 10–26). Relative bone loss was measured by computerized software (NIH Image). At baseline, teeth were selected if they had lost ≥50 and <70% (''questionable''), or ≥70% bone height (''hopeless'') at one proximal surface at least.
Results: In AP, 271 teeth were considered questionable and 76 teeth hopeless, in CP 193 questionable teeth and 42 hopeless teeth. In AP, 56 (20.6%) questionable and 31 (40.7%) hopeless teeth had been removed over time versus 49 (25.3%) and 24 (57.1%) in CP, respectively. The mean tooth loss per patient was during maintenance phase in total 0.11 (AP) and 0.17 teeth/year (CP). There were no significant differences ($P \leq 0.05$, unpaired t-test), neither in mean nor in total tooth loss between AP and CP.
Conclusions: In our study it was demonstrated that in patients with aggressive periodontitis retention of teeth with a so-called questionable or hopeless prognosis is feasible over a long-term period.

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Ref no: EUABS065296

Clinical evaluation of Er: YAG, Nd: YAG and diode laser therapy for desensitization of teeth with gingival recession

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The aim of this study was to evaluate the effectiveness of three types of lasers, Er: YAG, Nd: YAG and GaAlAs (Diode), as dentin desensitizers as well as both the immediate and late therapeutic effects on teeth with gingival recessions. The study was conducted on 24 patients with 96 teeth with Miller's Class 1 and 2 gingival recessions with clinically elicitable DH divided into four groups; A-(Er: YAG; 2940-nm, 60 mJ, 2 Hz, 20 s), B-(Nd: YAG; 1064-nm, 100 mJ, 15 Hz, 100 s), C-(Diode; 808-nm, 2 J, 100 mW, 20 s) and D-(control not irradiated). DH was assessed by means of air stimulus. VAS was used to measure DH. The selected teeth in four groups were received laser therapy for 3 sessions. The measurements were performed before each treatment session and at 30 minutes after the laser application (immediate effect) and additional measurements were also performed at 15, 30 and 60 days after the conclusion of treatment (late effect) in order to assess the extent of desensitization obtained at the different laser device. Significant reduction of DH occurred along all times measured during the three treatment sessions in groups treated with Er: YAG, Nd: YAG and Diode lasers. Comparing the means of the responses in the 3 treatment sessions of the 4 groups, Group-B showed a higher degree of desensitization in teeth with gingival recession compared to the other groups ($P < 0.01$). Nd: YAG laser irradiation is more effective in treatment of DH than that in the Er: YAG and diode laser.

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Ref no: EUABS065299

Root surface biomodification with Nd: YAG laser for the treatment of gingival recession with subepithelial connective tissue grafts

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Root surface biomodification has been used to treat gingival recession and periodontitis. The principle for this procedure is that removing the smear layer from the root surfaces exposes collagen fibers, which leads to improved healing. The clinical studies generally have failed to find any improvement in clinical parameters when using such agents. The aim of this study was to evaluate and compare the outcome of gingival recession therapy using the subepithelial connective tissue graft (SCTG) with or without Nd: YAG laser application for root surface biomodification. Thirty-four teeth in 17 patients with Miller Class 1 and 2 recession were treated with SCTG with (test group) or without (control group) the application of Nd: YAG laser (1 W, 10 Hz, 60 seconds, 1064 nm). Clinical attachment level (CAL), recession depth (RD), recession width (RW), and probing depth (PD) were measured at baseline and 6 months postsurgery. Both treatments yielded significant improvements in terms of RD and RW decrease and CAL gain compared to baseline values. For test and control group, the average root coverage was 33% and 77%, respectively ($P < 0.05$), and the complete root coverage was 17% and 67%, respectively ($P < 0.05$). The control group showed a greater reduction in RD and RW compared to the test group ($P < 0.05$). The use of Nd: YAG laser as a root surface biomodifier negatively affected the outcome of root coverage with the SCTG.

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Ref no: EUABS065605

Evaluation of clinical parameters in the treatment of chronic periodontitis: scaling and root planing versus scaling and root planing + Nd: YAG laser

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Nonsurgical therapy consists of subgingival debridement.This conventional treatment has been effective in reducing bacterial

load, resulting in the improvement of the clinical periodontal parameters. With the objective of increasing the effectiveness of the mechanical removal of subgingival biofilme, the therapy with laser has been recommended as adjunctive to the conventional procedures of Scaling and Root Planing (SRP). The aim of this study was to asses the clinical outcome of SRP alone or combined with Nd: YAG laser therapy.
Materials and methods: It is a double blind split mouth design study, involving patients with generalized chronic periodontitis. The subjects were randomly assigned to the two treatment groups: SRP and laser in one quadrant and SRP alone in the other quadrant. The clinical parameters recorded were O'Leary Plaque Index, Bleeding on Probing Index, Periodontal Probing Depth and Attachment Loss. Clinical measurements were taken at baseline and 40 days after treatment. The microbiological analysis was made by Real-Time PCR and will be object of a future communication.
Results: The study demonstrated a significant reduction in all clinical parameters in the two modalities of treatment, but no significant statistical differences was found when laser treatment was used secondary to traditional SRP terapy.
Conclusion: When comparing SRP with additional Nd: YAG laser therapy, clinical outcomes showed no significant difference between the two groups.

270
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Results of the initial phase of periodontal therapy in chronic periodontitis patients performed by students

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Aim: To evaluate the results of the initial phase of periodontal therapy of chronic periodontitis (CP) performed by the fifth-year dental students.
Materials and methods: Fifty patients (28 female, 22 male), aged 30–63 (mean 46.5) years, diagnosed with CP were examined and bleeding on probing (BoP), probing pocket depth (PPD), and gingival retraction (GR) were recorded; clinical attachement level (CAL) and clinical attachment gain (CAG) were calculated before (group BEF), 6–8 weeks (group AFT) and six months after the end of the therapy. Results were statistically analyzed using Mann–Whitney U test.
Results: The difference between groups BEF and AFT in GR was not statistically significant (group BEF: 1.12 mm; group AFT: 1.61 mm; $P > 0.05$). The difference in BoP (group BEF: 1.76; group AFT: 0.79), PPD (group BEF: 2.88 mm; group AFT: 2.28 mm) and CAL (group BEF: 3.91 mm; group AFT: 3.48 mm) were statistically significant ($P < 0.05$). Mean value of CAG was 0.26 mm. Comparison of the patients with mild (CAL < 3 mm) and severe (CAL > 5 mm) CP showed that the difference in PPD was statistically significant before, but not after the therapy. Results after six months were not statistically different from these after 6–8 weeks.
Conclusion: Results indicate that the initial phase of periodontal therapy performed by students was successful. This proves the importance of keeping record of patients' periodontal status before and after the therapy; thus the students can become aware of the impact of their work.

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Serum SAA levels in periodontal patients before and after non-surgical treatment compared to healthy individuals

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Introduction: Serum amyloid A (SAA) is a systemic marker for inflammatory conditions like periodontitis. Higher SAA concentrations alter HDL and reduce apoAI and apoAII, which may be essential in atherosclerosis and cardiovascular diseases.
Objective: To assess if non-surgical treatment of chronic periodontitis affects levels of SAA in serum.
Methods: Study group consisted of 60 periodontitis and 30 healthy persons (20–40 years). Baseline data were collected by questionnaire and clinical assessment. Blood samples were taken and frozen in -70°C. Full mouth non-surgical periodontal treatment was performed on a single visit. The same procedures were repeated after one month. SAA level was measured by immunonephelometric method. Differences were evaluated using Wilcoxon's signed rank matched pairs and Mann–Whitney's U tests. University Ethics Committee approval was obtained.
Results: At baseline median serum SAA values in periodontitis patients were statistically significantly higher 3.90 (range: 0.70–18.20 mg/l) than in healthy individuals 3.50 (range: 1.20–8.70 mg/l); ($P < 0.01$). Although, the clinical inflammation parameters improved, lower serum SAA measurements after treatment were not statistically significant ($P = 0.59$). SAA did not correlate with any of the periodontal disease clinical parameters before and after treatment.
Conclusion: Non significant decrease in serum SAA concentrations can potentially indicate on necessity of longer term observation.

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Ref no: EUABS065526

Laser treatment of dentinal hypersensitivity: *in vitro* morphological observation and a case report

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Dentinal hypersensitivity (DH) caused by localized areas of exposed dentinal tubules is a frequent painful syndrome in the total population, particularly after periodontal treatment. The treatment of DH is a comprehensive part of the management of periodontal diseases, especially when non-reversible gingival recessions, exposing the roots had occurred. Several therapeutic modalities have successfully been used in dentistry to eliminate or to reduce DH. These modalities consist of the prescription desensitizing chemical products that could be included in toothpastes or mouthrinses. The aim of these products is to induce an obliteration of the exposed dentinal tubules. All these treatments are effective after a certain period of daily use that can vary from 10 to 20 days. Recently, a single session of laser desensitization was introduced as an alternative treatment modality of DH. The main advantage of this technique is the immediate effect of laser that has a capacity in instantly inducing the obliteration of the exposed tubules. We carried morphological observation (scanning electron microscope) of human dentin, after desensitization protocol using an Er: YAG (Erbium: Yittrium argium geodimium) laser device. Microscopical observation showed an effective obliteration of exposed dentinal tubules after laser irradiation. The degree of obliteration was correlated to the laser exposure duration. A case report of clinical laser desensitization will also be presented.

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Ref no: EUABS065515
Variations and dimensional stability of periodontal tissues after surgical crown lengthening: a 6-months clinical study
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Background: The aim of this study was to evaluate the variations and the dimensional stability of periodontal tissues following surgical crown lengthening (SCL) and over a 6-month healing period.
Methods: Seven patients were submitted to SCL. For each patient were evaluated the following parameters: PI, GI, PD, free gingival margin (FGM), CAL, interproximal bone level (IBL) and direct bone level before and after osseous resective procedure. To obtain these parameters an acrylic stent was used with a fixed reference point and a superior guide to standardize the placement of the X-ray film holding system. The patients were reexamined 7, 30, 45, 90, 180 days postoperatively.
Results: During the healing period there was no significant change in PD (mean 0.19 mm; $P < 0.047$). Immediately after surgery the position of the FGM was apically displaced (mean 2.14 mm), after 6 months there was a rebound of 0.76 mm (mean). At 57% of treated sites ≥ 2 mm of bone was removed. Following analysis of the periapical X-ray, there were no significant variations in IBL (mean 0.03 mm).
Conclusion: After surgical procedures to 6 months healing period, the results demonstrated progressive coronal displacement of FGM and IBL remained at the same level obtained by osseous resective surgery. After 12 weeks of healing period, the SCL permits a predictable dimensional stability of periodontal tissues. These results are in according to the studies present in literature.

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Ref no: EUABS065458
Clinical use of platelet rich fibrin in gingival recession treatment
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Introduction: Coverage of exposed roots due to gingival recession is one of the main indications for periodontal plastic surgery. Therefore, a large variety of mucogingival grafting procedures have been developed. The purpose of this study was to prove clinical effectiveness of Platelet rich fibrin (PRF) compared to standardized Connective tissue graft protocol (CTG) in gingival recession treatment.
Material and method: The study was a randomized clinical trial with split-mouth design in which two teeth presenting with either isolated or multiple gingival recession of Miller Class I or II were randomly assigned to one of two treatment groups: PRF (Experimental group) and CTG (Control group).
Results: Experimental (PRF) and control (CTG) group showed no statistical difference in GR, representing a 92.6% and 94.3% success rate respectively. No statistical significance was observed in PD among groups either ($P > 0.05$). CTG group showed a significantly greater WKT gain (3.19 ± 0.87), compared to an experimental (PRF) group (1.71 ± 0.55). However, data received for HI were statistically major in favor of PRF group.
Conclusions: Both procedures showed desirable clinical effectiveness. CTG still exhibited a significantly higher success rate in the WKT gain. Nevertheless, PRF showed an improvement of tissue healing, as well as the significant reduction of patient discomfort.

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Ref no: EUABS065435
Gingival crevicular fluid can degrade emdogain and inhibit emdogain-induced proliferation of periodontal ligament fibroblasts
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Enamel matrix derivative Emdogain® (EMD) has been used in periodontal therapy to regenerate lost periodontium. It is used on periodontally affected root surfaces in which it becomes exposed to many proteolytic enzymes. We studied the effects of gingival crevicular fluid (GCF) on the degradation of EMD. GCF samples were collected from eighty subjects with healthy, gingivitis, chronic periodontitis and aggressive periodontitis. EMD degradation was studied with EMD-embedded zymography. We also examined the effects of GCF and/or EMD and amelogenin on the proliferation of periodontal ligament fibroblasts *in vitro*. EMD was observed to be degraded by GCF depending on periodontal status. More degradation was observed in all disease states compared to healthy controls. Proliferation assay revealed that GCF is capable of decreasing EMD-induced proliferation of PDL-fibroblasts. EMD-100 μg/ml increased proliferation by 24%, and EMD-200 μg/ml by 30% compared to control. GCF plus EMD-200 μg/ml/or -100 μg/ml increased proliferation 12% and 6%, respectively. Amelogenin-200 μg/ml decreased proliferation by 54%. In conclusion, EMD is degraded by GCF samples and addition of GCF together with EMD *in vitro* decreased proliferation of PDL-fibroblasts. To achieve the best regenerative effect with EMD, it is advisable to control inflammation before EMD application.

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Ref no: EUABS065439
The effect of 980-nm diode laser on the periodontal microflora
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Objective: Determination of the immediate effect of 980-nm diode laser application during periodontal operation on the pathogen bacteria was observed.
Background: The use of laser is one of the methods in periodontal treatment, although the benefits of laser application have yet to be determined.
Material and methods: One hundred and four patients with PD from 1 to 14 mm (average 3·4 mm) were included. Patients were randomly allocated in 2 groups: control (C, $n = 51$), in which periodontal operation was performed and test group (T, $n = 53$), in which periodontal flap operation and 980-nm diode laser root surface treatment were performed. Microbiological flora was evaluated before and after periodontal treatment in both, C and T groups.
Results: In both groups decrease of the PI, GI, PD and Bleeding upon probing were significant ($P = 1$). In the C group the significant reduction (96%) before versus after periodontal operation of the cultivable microflora was observed. In the T group the significant reduction (99.5 %) before versus after periodontal operation of the cultivable microflora was observed. The reduction of cultivable microflora in T group was significant compared to C group.
Conclusion: The effect of the 980-nm diode laser during periodontal operation is significant in the reduction of the periodontal microflora.

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Ref no: EUABS065874
The use of Er, Cr: YSGG laser in subgingival treatment
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In controlled, blind, split mouth study was examined effectivity of Er, Cr: YSGG laser in the treatment of advanced chronic periodontitis. Efficiency of laser treatment in 30 patients was correlated with subgingival treatment performed by ultrasonic scaler. Settings of laser treatment were based on previous microbiological and ultrastructural examinations. Laser activities inside of periodontal pocket were divided into two steps. The first one was directed to the calculus removal and 1W, 11% of water and 15% of air were used. The second step - bacterial decontamination – was performed by 2W, 15% of water and 15% of air. Clinical parameters as a bleeding on probing (BOP), pocket depth (PD) and clinical attachment level (CAL) were recorded before treatment and after 2 months. BOP values in laser group (75%) and ultrasonic group (77%) before treatment were significantly decreased after both types of treatment (28% resp. 24%). Improvement of mean PD values in ultrasonic group reached 1.8 mm and 3.5 mm in laser group. The difference is statistically significant ($P < 0.005$). Gain of CAL was significantly ($P < 0.005$) higher in the laser group (3.2 mm) then in the ultrasonic group (1.6 mm). Within the limits of the present study, it may be concluded that Er, Cr: YSGG laser is more efficient in the subgingival treatment than ultrasonic instrumentation. Superior results are probably due the better accessibility of bacterial deposits and direct destruction of bacterial cells by laser.

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Ref no: EUABS065876
Effect of different methods of chlorehexidine mouthrinse usage on microbial plaque
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Background and aim: Previous studies reported possible conteractions between chlorhexidine (CHX) and sodium lauryl sulfate in dentifrice.the aim of this study was to compare four different measuresof CHX applications along with toothbrushing on plaque control on patient who came to periodontics depatment of Tehran Azad University of medical sciences and in a private practice.
Methods and materials: The study was single blinded, randomized 4cell, cross over design. it used a 4-day plaque accumulation model to compare four different oral regimens with a wash out perio of of 7 days. fourthy healthy volunteers were enrolled in the study and recieved thorough dental prophilaxies at the beginning of each 4 day test period.the regimens were:using CHX mouthrinse before (regimen A),immediately after (regimen B), 30 minutes after toothbrushing (regimen C) and only brushing (regimen D) with SLS-containing dentifrice.at the end of each four day test period,plaque was scored with turesky index.no other oral hygiene measures were allowed.the difference between the groups were analayzed by ANOVA test.
Results: The overall indices of regimens A, B, C, D were 0.90, 0.87, 0.83, 0.96 respectively.there was no significant difference in plaque accumulation between four regimens.
Conclusions: Within the limitation of the present study it can be concluded that the anti-plaque efficacy of 0.2% CHX rinse was not reduced in combination of tooth brushing with SLS-containing dentifice.

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Ref no: EUABS065844
The effect of locally delivered xanthan-based CHLO-SITE gel with scaling and root planning in treatment of chronic periodontitis: microbial findings
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The study was designed to evaluate the microbial effectiveness of a locally delivered xanthan-based CHLO-SITE gel as an adjunctive therapy to scaling and root planning in treatment of moderate-advanced chronic periodontitis. In a randomized controlled split-mouth clinical trial, 20 patients were selected due to chronic periodontitis with pocket depth of 4–6 mm. One side of the mouth served as control where scaling and root planning was performed as routine while the other side of the same mouth experimental site was treated by an extra injection of CHLO-SITE xanthan-based gel. Samples were taken from both sites on baseline, 1 month and 3 months post-treatment periods. Samples were exposed to nutrient material followed by colony counts. Data were then analyzed using Wilcoxon signed ranks and Friedman tests. At baseline, there was no significant difference in colony count between the control and the experimental sites ($P = 0.36$). However, after 1 month follow up, the mean colony count was 13850 ($\pm$ 2253) and 151610 ($\pm$ 11248) at experimental and control sites respectively, with a significant difference between the two sites ($P < 0.05$).A significant difference was also found in colony count between the two groups in 3 months follow up episode ($P < 0.05$).
Conclusion: It seems that subgingival injection of xanthan-based CHLO-SITE gel could cause a significantly higher decrease in colony count than that of scaling and root planning therapy alone.

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Ref no: EUABS065849
The use of platelet rich fibrin in periodontal regeneration
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The objective of this study is to compare the effects of natural porous bone mineral (NPBM) and PRF and PRF alone in the treatment of interproximal intrabony defects. Using a split-mouth design, 11 pairs of intrabony defects were treated and surgically reentered 6 months after the initial surgery. Experimental defects were filled with NPBM mixed with PRF and covered with PRF membrane or PRF alone covered with PRF membrane Preoperative probing depths, attachment levels, and intraoperative bone measurements were similar for both groups. Postsurgical measurements taken at 6 months revealed a significantly greater reduction in probing depth in the NPBM/PRF group (4.45 $\pm$ 0.89 mm on buccal sites and 4.27 $\pm$ 0.96 mm on lingual sites) when compared to the PRF group (3.18 $\pm$ 0.72 mm on buccal sites and 3.09 $\pm$ 0.79 mm on lingual sites). The NPBM/PRF sites also presented with significantly more attachment gain (3.91 $\pm$ 0.90 mm on buccal sites and 3.73 $\pm$ 0.86 mm on lingual sites) than the PRF sites (1.82 $\pm$ 0.83 mm on buccal sites and 1.63 $\pm$ 0.77 mm on lingual sites). Surgical reentry of the treated defects revealed a significantly greater amount of defect fill in favor of the NPBM/PRF group (4.18 $\pm$ 1.11 mm on buccal sites and 4.00 $\pm$ 0.95 mm on lingual sites) as compared to the PRF group (2.18 $\pm$ 0.94 mm on buccal sites and 1.91 $\pm$ 0.90 mm on lingual sites). Combination of NPBM and PRF appears to be superior to PRF alone in the treatment of interproximal intrabony defects in humans.

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Ref no: EUABS065829

Clinical performance of coronally advanced flaps combined with connective tissue grafts (CAF/CTG) in the treatment of gingival recessions

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Background: The treatment of buccal gingival recessions is a common requirement due to aesthetic concern or root sensitivity. Aim of this multicenter, prospective, clinical trial was to assess the clinical performance of CAF/CTG in terms of recession reduction (REC-RED), percentage of root coverage (%RC), percentage of complete root coverage (CRC) and patient-centred outcomes.
Material and methods: 111 single class I or II recession defects in 111 healthy patients were treated with CAF + CTG in 10 private clinics of general practicioners who attended a 3 year training in periodontics. Clinical outcomes (REC-RED, %RC, and CRC) were evaluated at 3, 6 and 12 months. Patient outcomes were assessed with questionnaires. A visual analogic scale (VAS) from 0 to 100 was used for continuous variables. All clinical measurements were performed by a single examiner.
Results: At 12 months, the mean REC-RED was 2.3 ± 0.1 mm, the mean %RC was 86.06 ± 25.65% and CRC was 66.01%. Postoperative pain and /or discomfort were reported by 35.5% patients. Sensitivity, decreased from 37.8% at baseline to 4% at 12 months. On a VAS, improvements of aesthetics, sensitivity and oral hygiene at 1 year were respectively 86.5, 64.8 and 73.
Conclusions: The results are comparable with the published top scientific literature and demonstrate applicability of this technique by trained general practicioners. Satisfactory clinical outcomes were associated with overall patient satisfaction (99%) and low morbidity.

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Ref no: EUABS065824

Periodontal health in patients with fixed prosthesis according to the regularity of supportive periodontal therapy in Zagreb (Croatia)

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The importance of supportive periodontal therapy (SPT) for teeth with fixed partial dentures (FPD) has been well known for years. Therefore, the aim of this research was to establish the condition of periodontium of teeth with FPD and non-abutment teeth according to the regularity of SPT. The research comprised 109 patients with existing FPD. Patients were classified into 3 groups due to regularity of their SPT–without SPT, irregular (less than one appointment a year) and regular (at least 1 appointment per year). 600 abutment and 1623 non-abutment teeth were examined. Periodontal probe (PCP-11), periodontal indices (PI, BOP, PD, AL, and recession), periodontal charts and questionnaires were used. Statistical analysis was performed with SPSS 15.0 (Windows), using quantitative comparisons with the ANOVA test. An odds value (P) below 0.05 was considered a statistical significant difference. The majority of patients (43%) underwent regular SPT; 39 % underwent irregular SPT and 18% underwent no SPT at all. Abutment teeth had statistically higher values of PD (4.16 mm; $P = 0.03$) and CAL (4.53 mm; $P = 0.001$) in a group that never underwent SPT after FPD was fabricated in comparison to other two groups. Non-abutment teeth had statistically higher values of recession (1.06 mm; $P = 0.003$) and CAL (3.93 mm; $P = 0.001$) in a group that had irregular SPT in comparison with regular SPT group. We can conclude that even irregular SPT in patients with FPD can improve periodontal health of abutment teeth.

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Ref no: EUABS065893

The evaluation of adjunctive beta-glucan usage to initial periodontal therapy

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Background and Aim: The aim of this study was to investigate the effects of initial periodontal therapy (IPT) plus systemic beta-glucan (BG) on clinical, microbiological parameters and gingival crevicular fluid (GCF) transforming growth factor beta-1 (TGFβ-1) levels in chronic periodontitis (CP) patients.
Materials and methods: Twenty CP patients were divided into two groups: Group 1 received IPT only, group 2 received IPT and BG. At baseline and 3 months after therapy, probing depth (PD), bleeding on probing and relative attachment levels was recorded. Subgingival microbiological and GCF samples were collected from sites with initial PD≥ 5 mm. The proportion of anaerobic microorganisms in the total flora was determined by microbiological culturing. TGFβ-1 levels in GCF were determined by ELISA.
Results: Both treatments provided significant clinical improvements after therapy ($P < 0.01$). However, no significant differences were observed between the groups. The concentration of TGFβ-1 increased in both groups, but this elevation was found significant in group 2 only without significant difference between the two groups. The proportion of anaerobic species was decreased in both groups with no difference between two groups. Within the limits of this study, the use of systemic BG did not provide any additional effect to IPT alone. However, BG might increase the release of TGFβ-1, thereby augmenting periodontal healing potential.

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Ref no: EUABS065894

Postoperative complications following periodontal resective procedures. an evaluation between postgraduate students and experienced periodontists

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Background: Periodontal surgery is usually accompanied by certain discomfort during the first 1–2 weeks. The aim of the study was to assess the morbidity of resective periodontal procedures during the seven days after surgery between postgraduate students and experienced periodontists. The surgeon's skill and the duration of the surgery were also studied.
Material and methods: 271 resective surgeries were performed, 122 by students and 149 by experimented surgeons. Seven days later, the patients were asked to fill a questionnaire about the following items: bleeding after 12, 24 and 48 hours, sensibility to percussion, thermal sensitivity, swelling and pain experienced after surgery.
Results: No statistical differences ($P > 0.05$) were found between the experimented surgeons group and the students regarding bleeding. Regarding the other parameters, the postoperative complications were statistically ($P < 0.05$) greater in the student's group. The duration of the surgical procedures was highly correlated with postsurgical complications; the longer the procedure the more the postoperative complications.

Discussion and conclusion: In general, there is little morbidity after periodontal resective procedures, as shown in other studies. Greater morbidity can be found in the student's group compared to the experienced periodontists. These results confirm previous studies. There is a relationship between the duration of the surgery and postoperative complications.

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Bacterial profile of aggressive periodontitis patients before and after phase I therapy

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Aim: The aim of this study was to investigate the presence of *Aggregatibacter actinomycetemcomitans*, *Porphyromonas gingivalis* (*P. gingivalis fimA* type I and II genotypes), *Tannerella forsythia* and *Treponema denticola* in subgingival plaque samples of aggressive periodontitis (AP) patients and to compare the profile of 1st and 3th months post-treatment with baseline.
Methods: Subgingival bacterial plaque samples of 10 systemically healthy AP patients were collected. Phase I therapy, including oral hygiene motivation, scaling and root planning, was performed. Subgingival plaque samples were investigated by *Polymerase Chain Reaction* (PCR) technique and the results also were confirmed using Real-Time PCR.
Results and conclusions: The presence of *A. actinomycetemcomitans*, *P. gingivalis, T. forsythia* and *T. denticola* were determined at baseline subgingival plaque samples of AP patients in the ratios of 70%, 70%, 100% and 40%, respectively. Three of the *P. gingivalis* positive AP patients were determined as type I *fimA* and the remaining four as type II *fimA* genotypes. An apparent reduction of periodontopathogens was observed at the 1st month after the phase I treatment (10%, 0%, 10% and 10%, respectively). However, compared to the 1st month, bacterial recolonization was noted at the 3th month (30%, 40%, 70% and %10 respectively). A regular follow-up is necessary for AP patients and additional chemotherapy should be considered (*This study was supported by Selcuk Univ.[BAP-06201072)*.

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Correlations between receptor activator of nuclear factor-kb ligand (sRANKL), clinical and microbiological parameters after periodontal surgery

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Aim: To investigate levels of soluble receptor activator of nuclear factor-kb ligand (sRANKL), in gingival crevicular fluid (GCF) and their correlations to clinical and microbiological parameters after periodontal surgery.
Materials and methods: Thirty chronic periodontitis patients after initial therapy participated in the study. Sixteen were treated with apically repositioned flap and fourteen with modified Widman flap. Pocket depth, clinical attachment level, plaque and bleeding index were recorded at 90 sites at baseline, 6, 12 and 24 weeks after treatment. A total of 353 samples were analyzed with checkerboard DNA hybridization for *Porphyromonas gingivalis, Tannerella forsythia, Treponema denticola, Actinomyces naeslundii and Streptococcus mitis* and ELISA for levels of sRANKL. Comparisons between and within groups were performed by non-parametric tests (Mann–Whitney and Wilcoxon's) and correlations were sought for with Spearman's r coefficient.
Results: Six and twelve weeks after surgical treatment sRANKL correlated statistically significantly with *T. forsythia* ($P < 0.05$) .Comparisons between groups revealed similar clinical and microbiological changes for the two surgical techniques overtime, and a numerical increase of sRANKL 6 weeks after surgery which reached statistical significance for the apically repositioned flap at six months.
Conclusion: Changes of levels of sRANKL after periodontal surgery might be related to important periodontal pathogens.

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Ref no: EUABS065910

Treatment of intrabony defects with two different regenerative material combinations

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Objective: The aim of the present study was to compare the effectiveness of mineralized solvent-dehydrated bone allograft (MBA) and bovine derived xenograft (BDX) in combination with bovine type I collagen membrane (CM) in the treatment of intrabony defects.
Methods: Twenty five chronic periodontitis patients were included. A total of 38 intrabony defects with probing depth (PD) of ≥ 6 mm and an intrabony component of ≥ 3 mm were selected. Defects were treated with either MBA + CM (Group A) or BDX + CM (Group B). At baseline and 12 months, plaque and sulcus bleeding indices, PD, recession, relative attachment level, and probing and radiographic bone levels were measured.
Results: Favorable clinical outcomes were achieved in both groups when compared to baseline ($P < 0.001$). Group A and Group B presented a mean PD reduction of 5.22 ± 1.24 mm and 4.17 ± 1.3 mm, recession of 2 ± 0.94 mm and 1.13 ± 0.83 mm, attachment gain of 3.22 ± 1.09 mm and 3.04 ± 1.2 mm, clinical bone gain of 3.13 ± 1.11 mm and 2.84 ± 1.12 mm and radiographic bone gain of 2.72 ± 1.1 mm and 2.68 ± 0.88 mm, respectively. No statistically significant differences were observed at 12 months between the groups.
Conclusions: The results of the present study indicate that both regenerative material combinations have similar clinical and radiographic improvements.

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Ref no: EUABS065912

A systematic review on additional clinical effects of PVP-iodine during non-surgical periodontal therapy as compared to water irrigation

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Aim: A systematic review was made to assess the potential additional effect of PVP-iodine as an adjunct to scaling and root planing as compared to water (or no) rinse in the treatment of chronic periodontitis.
Materials and Methods: A literature search in the U.S. National Libary of Medicine (PubMed), Excerpta Medica Database (EMBASE) and in the Cochrane Central Libary was performed. Two reviewers independently screened all potentially relevant titles. In a second step, the original articles in duplicate were filtered out. Only full-text randomized, controlled trials comparing the additional use of PVP-iodine with water rinse or no rinsing in non-surgical periodontal therapy were included up to May 2008.

Results: A statistically significant positive effect of adjunctive use of iodine was found. There was no heterogeneity of the studies. Median pocket reduction with iodine over all was 0.2 mm ($P < 0.05$).
Conclusion: The adjunctive use of iodine during scaling and root planning improves pocket reduction, although the clinical significance is limited. However, improving the bioavailability of this antiseptic by means of different galenics, concentrations and clinical concepts should be assessed.

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Ref no: EUABS065920

A clinical and biochemical evaluation of local sodium piperacillin therapy

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The objective of the study was to evaluate clinical and biochemical effects of initial periodontal treatment alone and in combination with local use of piperacillin sodium (Periofilm) in chronic periodontitis. Twenty patients with probing depth (PD) of ≥ 5 mm and gingival index (GI) of ≥ 2 in at least 2 sites were included. Group 1 received scaling and root planing (SRP), whereas group 2 received SRP + Periofilm. At 0 and 90 days, plaque index, GI, PD, relative attachment level and recession were measured and gingival crevicular fluid samples were collected. Matrix metalloproteinase-8 (MMP-8) and tissue inhibitor of metalloproteinase-1 (TIMP-1) were measured by ELISA. Considering the selected sites, 2.2 ± 0.8 mm and 2.28 ± 0.68 mm of PD reduction, 1.49 ± 0.84 mm and 1.71 ± 1 mm of attachment gain were obtained in Groups 1 and 2, respectively. The decrease in MMP-8 concentration (Groups 1 and 2, respectively ($P < 0.05$, $P < 0.01$)), and the increase in TIMP-1 concentration (Groups 1 and 2 ($P < 0.001$)) was significant in both treatment groups. At 90 days, MMP-8 concentration was 15.8 ± 11.64 μg/ml and 8.95 ± 9.44 μg/ml in Groups 1 and 2, respectively and intergroup difference was statistically significant in favor of the Group 2 ($P < 0.05$). Both treatment groups responded to therapy with similar resolution of infection reflected to clinical and biochemical parameters. Periofilm seems to have adjunctive effects to SRP in terms of differences in MMP-8 concentration.

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Clinical and histological evaluation of human intrabony periodontal defects treated with an unsintered nanocrystalline hydroxyapatite paste (ostim®)

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Aim: To evaluate clinically and histologically the healing of human intrabony periodontal defects treated with Ostim®.
Methods: Six healthy patients with advanced chronic periodontitis were enrolled. The selected teeth were previously scheduled for extraction due to severe destruction of the supporting attachment apparatus and/or further prosthetic consideration. Probing pocket depth (PPD), clinical attachment level (CAL) was registered and standardized radiographs were taken at baseline and prior to biopsy removal. During open flap debridement the intrabony defects were filled with Ostim®. After a healing period of seven months, the teeth were removed with some of their surrounding periodontal tissues and processed for histologic analysis.
Results: Uncompromised wound healing was observed. Treatment resulted in a PPD reduction of 4.0 ± 0.9 mm and a CAL gain of 2.5 ± 0.8 mm, on average. The histologic analysis revealed an almost complete resorption of the graft. The healing was characterized by the formation new connective tissue or long epithelial attachment. New cementum and new bone varied from 0 to 0.86 mm and from 0 to 1.33 mm, respectively.
Conclusion: Within their limits, the present findings indicate that the substantial clinical improvements observed following reconstructive periodontal surgery with Ostim® were associated with a widely variable amount of new cementum and new bone formation. The study was supported by a grant from Heraeus Kulzer, Hanau, Germany.

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Er: YAG laser versus systemic metranidozole as an adjunct to non-surgical periodontal therapy: a clinical and microbiological study

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The objective of this study was to compare the clinical and microbiological effects of Er:YAG laser and systemic metronidazole used as adjunctives to scaling and root planing (SRP) in chronic periodontitis (CP) patients. A total of 27 CP patients with a probing depth (PD)≥ 5 and bleeding on probing (BOP) in at least 3 single-rooted teeth within each quadrants were selected, divided into 3 groups randomly.Groups of patients recieved: (1) systemic metranidazole combined with SRP; (2) Er:YAG laser combined with SRP; (3) SRP. Subgingival plaque samples were obtained from selected teeth with PD≥ 5 mm in the treatment groups. The microbiological (proportions of obligate and facultative anaerobes) and clinical parameters of plaque index, BOP, PD, relative attachment level (RAL) were monitored over a period of 49 days. At the end of the observation period, statistically significant improvements in clinical parameters were observed within each group. Parallel to the clinical changes, all treatments reduced the number of total bacteria and proportions of facultative and obligately anaerobic microorganisms. However, intergroup comparisons for clinical and microbiological parameters revealed significant differences in the favor of the group 2. Although both of the combined treatment groups responded to therapy with better resolution of infection than the pure mechanical treatment, Er:YAG laser in combination with SRP seems to be more effective in terms of producing both clinical and microbial improvements.

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Clinical safty and clinical change after using essential oil solution as coolant during piezoelectric ultrasonic root debridement

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An alternative strategy to treat chronic periodontitis has been proposed as an attempt to disturb bacterial re-colonization in treated sites. The use of antiseptic solution as an adjunct to ultrasonic debridement has received considerable attention. Essential oil (EO) may be a potential candidate for such treatment. The aim of this study was to investigate the clinical safety and efficacy of EO solution used as coolant during piezoelectric pocket debridement in chronic periodontitis patients. The clinical safety

and clinical effects of EO solution on this approach were evaluated in a randomized study of 40 patients. The test group (80 sites) received essential oil solution as coolant while the control group (80 sites) received water as coolant. The clinical safety and clinical parameters, including probing depth (PD), clinical attachment level (CAL), bleeding on probing (BOP) and gingival index (GI) were evaluated at base line, 6 and 12 weeks after treatment. The clinical safety test revealed no significant adverse effect in all patients during study period. Statistically significant reductions in PD, CAL and BOP were noted in weeks 6 and 12 when compared to the baseline in both groups ($P < 0.01$). However, there was no significant difference of clinical outcomes between two study groups. It is suggested that the procedure of using essential oil solution as coolant during piezoelectric root debridement has sufficient clinical safety and could improve clinical outcome.

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Ref no: EUABS065617

The effect of rinsing with two different chlorhexidine solutions after periodontal surgery

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Objective: To evaluate the clinical effect and patient experience of rinsing after periodontal surgery using chlorhexidine solutions with or without alcohol.
Material and methods: In this randomized double-blind cross-over study, 20 patients refrained from tooth brushing after surgery and used two different mouth-rinses. 10 patients started with alcohol-based 0.1% (AB) and another 10 used alcohol-free 0.12% (AF) chlorhexidine. Sutures were removed after 2 weeks, teeth were cleaned; thereafter the 2 groups shifted solution. Plaque at operated teeth was recorded at 2 and 4 weeks (Quigley Hein ind.). Patient experience was assessed with a visual analogue scale (VAS; 0–10).
Results: Mean (SD) plaque index were 1.0(0.8) and 1.1(0.7) for AB and AF respectively at 2 weeks and 1.1(1.0) for AB and 0.8(0.7) for AF at 4 weeks (no significant differences between solutions). Taste of the solutions was found equal at 2 weeks [6.1(2.9) for AB and 6.0(2.3) for AF]. At 4 weeks, taste values were 4.6(2.5) for AB and 6.9(3.2) for AF, with a tendency to preference for AF ($P = 0.050$). Taste change was equal for the groups–3.7(3.3) for AB and 3.4(2.3) for AF at 2 weeks and slightly higher at 4 weeks [4.9(2.8) and 4.5(2.5) for AB and AF respectively]. Smarting was low in both groups: for AB 2.2(3.2) and 1.3(2.2) at 2 and 4 weeks and for AF 1.0(1.5) and 1.9(2.0) at 2 and 4 weeks.
Conclusion: Plaque levels were the same for the two solutions. Both were found equally feasible by the patients.

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Ref no: EUABS065691

Influences on patients' choice of a local-anesthesia-gel for scaling and root planing during periodontal maintenance: a multi-center-evaluation

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Objective: To determine parameters influencing patients' choice of a local-anesthesia-gel (Oraqix®, Dentsply) for scaling and root planing (SRP) procedures during periodontal maintenance. Patients' choice was used as primary endpoint. Secondary endpoints were to evaluate experienced pain, periodontal probing depth (PPD), self-report of dental anxiety, patients' gender, age and treatment experience as influencing parameters.
Method: 642 patients in periodontal-maintenance-programs who required further SRP were recruited from 14 Dental Universities. After SRP with the local-anesthesia-gel, all participants completed questionnaires which included future anesthesia preference, experienced pain (VAS, VRS) and dental anxiety. Number of treated sites according to PPD, age, gender, treatment experience and adverse effects were documented.
Results: 72.4% of the patients decided in favour of the gel, 21.2% preferred injection (6.4% indecisive). Higher VAS/VRS figures and PPD had a clear influence on patients' choice ($P = 0.001$, Kruskal–Wallis-test). No influence could be found according to dental anxiety and gender ($P = 0.14$; $P = 0.69$, Fisher's-exacter-test). Advanced age and treatment experience ($P = 0.002$; $P = 0.001$, Kruskal-Wallis-test) modified patients' decision in favour of the gel. Adverse effects: bad taste in 28% of the patients.
Conclusions: For 72.4% of the patients, Oraqix® is a suitable local anesthesia. Experienced pain, PPD, age and treatment experience are influencing factors.

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Ref no: EUABS065676

Comparison of initial periodontal therapy outcome in smoking and non-smoking patients with chronic periodontits

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Aim: Cigarette smoking is accepted as an important factor that increases the risk for initiation and progression of chronic periodontitis (CP). The aim of this study was to evaluate the success of initial periodontal therapy (IPT) in smoking (S) and non-smoking (NS) individuals with CP.
Material and Methods: A comparative study was carried out on a systematically selected sample of 43 patients, 22 S (51.2%, median age 40) and 21 NS patients (48.8%, median age 43). Exclusion criteria for the study included: pregnancy, chronic use of antibiotics, significal illness or condition that could affect periodontal status. Subjects were interviewed about their smoking habits and clinical examination was performed by a qualified periodontist. We used periodontal pockets probing depth (PD) before and three months after the therapy, being the most important clinical index for prediction of further disease progression. Four PD measurements were recorded (buccal, lingual, mesial and distal) for each tooth.
Results: Effectiveness of the IPT was tested by comparing the PD values before and after the therapy. By analyzing the number of tooth surfaces that showed reduction of PD more than 1.5 mm, we found statistically significant reduction in group of S patients ($\chi^2 = 6.62$, $P = 0.010$).
Conclusion: IPT was successful in S and NS patients. The reduction of periodontal pocket depth was significally higher in smoking patients that can be related to initial higer probing depths in this group of patients.

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Ref no: EUABS065666

Study of electrical neuromuscular stimulation efficacy in the treatment of chronic periodontitis

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Initial trerapy helps in preventing inflammation and induces healing but doesn't re-establish tooth supporting tissues.The present

clinical study evaluates microcurrent electrical neuromuscular stimulation (MENS) as a supporting method to conventional perio therapy which should help to repair lost qualities of periodontal tissues. MENS is a subsensory modality that employs current intensities between 1 and 600 μA for medical purposes. 20 patients with diagnosed chronic periodontitis (PD 5–8 mm) were divided in two groups. Experimental group 1) was treated with initial periodontal therapy followed by 5 MENS treatments. Control group 2) was treated only with initial therapy. Periodontal parameters were measured before initial therapy, 6 weeks after initial therapy for group 2 and 6 weeks after the last MENS treatment for group 1.Short term results show that MENS is a promising clinical method.

Results: Both groups show statistically significant reduction of inflamation ($P = 0.011$). Group 1 showed reduction of attachment loss in re-evaluation measurements ($P = 0.009$).In comparison with the control group, experimental group showed reduction of attachment loss ($P = 0.027$).

Conclusion: Short term research results indicate in favour of MENS being a suitable supporting method to conventional periodontal therapy of chronic periodontitis.No side effects were observed.Therapy with microcurrent device "μ-med Dental Master‘‘ is noninvasive and pleasant and therefore motivating for patients.

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Ref no: EUABS065659

Non-surgical periodontal treatment and mechanical plaque control in the management of oral malodour

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Aim: To examine the efficacy of non-surgical periodontal treatment and plaque control in the management of oral malodour in subjects with periodontal disease and healthy controls. The objectivity of self-assessment of oral malodour was also assessed.

Methods: 46 systemically healthy non-smokers (23 periodontitis patients; 14 gingivitis patients; 9 healthy controls) were diagnosed with halitosis and received non-surgical periodontal treatment and strict oral hygiene instructions. At baseline and three months periodontal examination, halimeter readings and organoleptic assessments were performed in all participants. Self-assessment of oral malodour was also carried out. The microbial load of *Porphyromonas gingivalis* and *Fusobacterium nucleatum* in tongue coatings was determined by real-time PCR.

Results: In each group, treatment resulted in significant improvements of halimeter recordings, organoleptic assessments and volume of tongue coating. The amounts of *P. gingivalis* and *F. nucleatum* on the tongue surface did not change after treatment. Self-estimation of oral malodour was linearly correlated with organoleptic assessments and decreased after treatment.

Conclusions: Non-surgical periodontal treatment with no adjunctive use of antiseptics was effective in improving halitosis recordings at three months. Self-assessments were considerably objective. Tongue scraping resulted in reduced volume of tongue coating, but failed to decrease the amount of putative periodontal pathogens.

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Ref no: EUABS065668

Influence of non-surgical treatment and administration of metronidazole on periodontal tissues and microflora in patients with chronic periodontitis

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Goals: The aim of the study was the evaluation of the influence of non-surgical treatment in conjunction with systemic administration of metronidazole on periodontal clinical parameters and periopathogens in patients suffering from moderate and severe chronic periodontitis.

Materials and methods: Microflora deriving from pockets≥ 4 mm from 30 patients with chronic periodontitis was examined. In all patients scaling, polishing and root planning were performed. Patients were divided into 2 groups: 20 patients were randomly chosen as the study group and administered metronidazole systemically, 10 patients made the control group. Microbiological assessement was conducted using tests basing on indication of bacterial DNA with PCR. At the beginning and the end of this study in every patient there was the evaluation of following clinical parameters: PD, CAL, PI, %PD > 4.

Results: In the study group there was a significant reduction of the number of samples in which Pg, Tf, Td and Pm after treatment were indicated. There were no significant changes in percentage of patients having undergone mechanical treament only, in whom all periopathogens were detected.

Summation: The systemic administration of metronidazole has a positive influence on the elimination of red complex bacteria in periodontal pockets in patients suffering from chronic periodontitis. It also prevents the recolonization of those pockets over 6 weeks' period. The study was supported by Pierre Fabre Medicament.

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The effects of adjunctive chlorhexidine mouthrinse on clinical parameters and GCF cytokine levels in untreated plaque-associated gingivitis

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Aim: The aim of the present randomized, double-blind, placebo-controlled, parallel-arm study was to examine the effectiveness of chlorhexidine (CHX) mouthrinse in addition to daily plaque control on gingival inflammation.

Methods: Fifty gingivitis patients were randomized to CHX or placebo groups. In addition to proper plaque control, CHX group rinsed with CHX, while placebo group rinsed with placebo mouthrinse for 4 weeks. Gingival crevicular fluid (GCF) samples were collected and clinical parameters including plaque index (PI), papillary bleeding index (PBI), calculus index and probing depth (PD) were recorded at baseline and repeated at 4 week. GCF interleukin (IL)-1a, IL-1β, interleukin-1 receptor antagonist (IL-1Ra), and IL-8 levels were determined by ELISA.

Results: Whole mouth clinical parameters were significantly improved in both groups at 4 weeks. CHX group showed greater reduction in the mean PI scores than placebo at 4 weeks ($P < 0.05$). GCF IL-8 levels of anterior sites significantly reduced in CHX and placebo group at 4 weeks ($P < 0.05$). GCF IL-1a, IL-1β, IL-1Ra levels remained unchanged at 4 weeks in both groups. GCF cytokine levels of CHX group were similar to those of placebo at 4 weeks.

Conclusions: Within the limitations of this study, CHX mouthrinse as adjuncts to daily plaque control could be useful in management of plaque-associated gingivitis, although ineffective on GCF cytokine levels.

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Clinical and radiological evaluation of new bone formation in infrabony defects after treatment with demineralized bone matrix

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Objectives: The purpose of the present study was to compare the efficiency of two different surgical procedures in the treatment of infrabony defects using conventional flap surgery and conventional flap surgery + guided tissue regeneration procedure using DFDBA putty graft material.
Methods: 24 infrabony defects were treated in 12 patients. 12 defects were treated conventionally (control group) and 12 defects were treated by regenerative periodontal surgery using DFDBA (test group). At baseline and 3, 6, 12 months after surgery, clinical measurements that includes; gingival index (GI), plaque index (PI), bleeding on probing (BOP), gingival recession (GR), probing depths (PD) and clinical attachment levels (CAL) were obtained with using occlusal stent and also standardized radiographs were taken.
Results: Both treatment groups showed statistically significant reductions in PI and GI scores following periodontal therapy. Both periodontal therapies resulted in significant PD reductions but treatment with DFDBA resulted in statistically significant higher CAL gains than treatment with conventional flap surgery. The radiographic defect reduction (bone fill) was statistically significant higher in test group.
Conclusions: Demineralized freeze-dried bone allograft putty demonstrated favorable improvements in soft and hard tissue parameters in the treatment of periodontal intraosseous defects.

301
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The effectiveness of an individually tailored oral health education programme on oral hygiene behaviour in patients with periodontal disease

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The aim of the present study was to evaluate the effectiveness of an individually tailored oral health educational programme for oral hygiene self-care in patients with moderately to advanced periodontitis compared to a routine oral health educational programme. A randomized, single-blinded, controlled trial with two active treatments was used. A total of 113 subjects were randomly allocated to the experimental or the control group. The individual tailoring for each participant originates from their thoughts, intermediate and long-term goals, and oral health status. The central features in the programme were individual analysis of oral hygiene habits and knowledge, individually set goals for oral hygiene behaviour, practice of manual dexterity, continuous self-monitoring of the behaviour and prevention of relapse. The subjects in the experimental group reduced gingival inflammation, both in general and interproximally, significantly more than did the subjects in the control group both at the 3- and 12-month follow-up. They also improved there oral hygiene significantly more and the largest difference was for the interproximal surfaces. The subjects in the experimental group reported a higher frequency of daily interdental cleaning and rated a higher certainty to maintain attained level of behaviour change. In conclusion, the individually tailored oral health educational programme was efficacious in improving long-term adherence to oral hygiene in periodontal treatment.

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Ref no: EUABS065030

A comparative study of root coverage with connective tissue grafts or enamel matrix derivative (EMD): 24-month-results

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Background: The objective of this study was to compare the 24-month results of coronally advanced flap with enamel matrix derivates (CAF + EMD) or sub-epithelial connective tissue graft (SCTG) in the treatment of Miller's Class I buccal gingival defects.
Methods: Twelve patients with bilateral gingival recessions were treated with CAF with EMD or SCTG. Vertical recession depth (VRD), keratinized tissue width (KTW), clinical attachment level (CAL), and clinical probing depth (CPD) were measured preoperatively, 1 and 2 years post surgery. A paired *t*-test and independent *t*-test were used to compare differences for the measured characters within and between groups, respectively.
Results: After 24 months a significant decrease in VRD could be observed in CAF + EMD (3.33 ± 0.30 mm) and CAF + CTG (4.5 ± 0.28 mm) treated sites. There was also a significant increase in KTW (0.83 ± 0.23 mm versus 2.08 ± 0.14 mm in CAF + EMD and SCTG sites, respectively). The gain in CAL was 3.54 ± 0.38 mm and 4.45 ± 0.30 mm in CAF + EMD and SCTG group, respectively. There were significant differences between the treatments for VRD, CAL, and KTW at the end of study.
Conclusions: The CAF with connective tissue graft seems to provide better long-term results than CAF with EMD in obtaining root coverage, increasing the KTW and CAL gain.
Key words: root coverage; gingival recession, connective tissue grafts, EMD, coronally advanced flap.

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Ref no: EUABS065031

Comparison of EMD to EMD/decalcified freezed dried bone allograft in the treatment of human intrabony periodontal defects

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Background: The aim of this study was to compare the enamel matrix derivative (EMD) alone to EMD combined with a decalcified freezed dried bone allograft (EMD/DFDBA) in the treatment of human intrabony defects.
Materials and method: Using a randomized split-mouth design, 12 paired intrabony defects were surgically treated. Defects treated either with EMD (EMD group) or EMD + DFDBA (EMD/DFDBA group).Reentries were performed 6 months after initial surgery A wilcoxon signed-rank test and Mann–whitney U test were used to compare inter and intra group (respectively) changes in probing depth (PD), clinical attachment level (CAL), gingival recession (GR), fill of bony defect, and crestal resorption between baseline and 6 months.

Results: Compared to baseline, the 6-month results indicated that both treatment modalities resulted in significant changes in all clinical parameters ($P < 0.05$). Surgical Re-entry of the defects revealed a significantly greater amount of crestal resorption and defect resolution in the EMD/DFDBA sites.
Conclusion: Both modalities led to significant improvement in the outcome variables assessed. It seems that the addition of DFDBA to EMD did not result in more improvement in clinical parameters.
Key words: enamel matrix derivates, decalcified freezed dried bone allograft, intrabony periodontal defect, bone regeneration.

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Subjective intensity of pain during supportive periodontal treatment employing an Er: YAG laser device

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The aim of the study was to compare subjective intensities of pain during supportive periodontal treatment with an Er: YAG laser when compared to pain occuring during the treatment with a sonic device. Fourty patients with two remaining periodontal pockets after completed conventional periodontal therapy were treated using a sonic scaler (Sonicfelx 3000 L) and Er: YAG laser (KEY Laser 3) in a split-mouth design. A visual analogue scale was used for pain assessment directly after each treatment procedure. Additionally, pain was recorded during the treatment of 11 patients at intervals of 0.5 s employing an intermodal intensity comparison. In these patients, treatment time was evaluated to assess the comparability of the different approaches. Pain assessment during treatment showed that laser treatment (median pain score: 0.71 [U], max: 9.94 [U], min: 0 [U]) caused less pain than the sonic device (median: 2.17 [U], max: 11.26 [U], min: 0 [U]) ($P < 0.05$) with no difference in treatment time ($P > 0.05$). These results could be confirmed by the visual analogue scale: pain scores evaluated after laser treatment (median: 1 [U], max: 7 [U], min: 0 [U]) were lower than those after sonic instrumentation (median: 3.5 [U], max: 7.5 [U], min: 0 [U]) ($P < 0.05$). Using an Er: YAG laser during supportive periodontal treatment, painful sensations can be reduced compared with sonic scaler instrumentation. Thus, it might be possible to increase the patient's compliance during periodontal treatment.

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Ref no: EUABS065007

Assessment of activity of the salivary exoglycosidases and MMP-1 in patients with chronic periodontitis after treatment with aprotinin

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The aim of the study was the clinical assessment of the periodontal status in patients with chronic periodontitis (CP) after treatment with aprotynin. Moreover, an attempt was made to evaluate the effect of the treatment on the activity of salivary exoglycosidases (HEX, bG) and MMP-1 in CP patients.
Material and methods: Patients were treated with a aprotynin gel (Transcodent, Jelfa SA) which was applicated on gums twice a day for 2 weeks. The clinical examination was performed tree times. The following clinical parameters were evaluated: API, BOP, PPD and CAL. For biomechanical determination of enzymes the methods of Chatteriee et al., p-nitrophenolic, the Lowry and Elisa were used.
Results: After treatment with aprotinin mean values of periodontal indices were significantly reduced as well as mean PPD. The values expressed as pKat/kg protein for specific enzymatic activities of HEX, bG and MMP-1 in the saliva of CP patients were significantly higher at baseline as compared with C. After treatment enzymatic activity of HEX significantly decreased reaching levels observed in C. Enzymatic activity of bG also significantly dropped down but stayed higher as compared to C. Activity of MMP-1 stayed similar after aprotynin treatment.
Conclusions: Mechanotherapy suplemented with aprotinin gel has positive influence on clinical status of periodontium and activity of HEX and bG in saliva of CP patients. This treatment however doesn't have any influence on activity of MMP-1.

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Ref no: EUABS064978

Microbiological outcomes of vector^{R} system compared with conventional mechanical debridement in the treatment of chronic periodontitis: a pilot study

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Aim: The aim of this study was to compere the microbiological outcomes following non-surgical perionontal therapy using the Vector^{R} system versus conventional machanical debridement.
Material and methods: Twenty patients with chronic periodontitis were randomized into a test group treated with ultrasonic Vector^{R} system and a control group treated with hand instruments, Gracey curette. Microbiological samples were taken and analyzed by Perio-Analyse^{R} test (Pierre-Fabre Oral Care) witch identify nine perio-pathogenic bacteria: Porphyromonas gingivalis, Prevetella intermedia, Eikenella corrodens, Campylobacter rectus, Actinobacillus actinomycetemcomitans, Fusobacterium nucleatum, Tanarella forsythensis, Peptostreptococcus micros and Treponema denticola. Microbiological parameters were assessed at baseline and 12 weeks after treatment.
Conclusion: Both Vector^{R} system and conventional mechanical debridement seem to be effective methods for treatment of chronic periodontitis.

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Ref no: EUABS064940

Evaluation of Nd: YAG laser irradiation on the treatment of endoperiodontal lesions

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Treatment modalities of endoperiodontal lesions (EPL) should eliminate pathogens from the infected area and prevent their re-colonization. The aim of this study was to investigate whether applying Nd: YAG laser applications can increase the healing effect of EPL and decrease the treatment or healing time. Eight patients with EPL were included and randomly allocated to either (Group I) the application of traditional methods, or (Group II) traditional methods, subgingival (20 Hz, 100 mJ for 120 seconds) and root canal (10 Hz, 100 mJ for 90 seconds) laser irradiation. The assessment of healing was performed by measuring the clinical parameters and getting radiography before and after the different treatment procedures. The clinical index values after all the different therapies decreased significantly higher when compared to the initial values. There were no differences between the different therapy modalities when comparing the healing of EPL, however healing time was faster in laser applied patients. Group II patients reported a substantial decrease of

pain almost immediately after the first treatment visit. One week after initial treatment, at the second visit, Group II patients had no further complaints concerning discomfort in the involved regions and all treatments were completed. Nd: YAG laser is a suitable tool for immediately successful treatment of EPLs, has better patient acceptance and shorter treatment time.

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Ref no: EUABS064815

Non-surgical, one-stage periodontal therapy with adjunctive use of different antiseptics-3 months study

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One-stage full-mouth disinfection was introduced to overcome translocation of periodontopathogens. They should be supressed in a short time not only in periodontal pockets but also in other intraoral habitats to avoid contamination of already treated pockets. The aim of the study was to determine whether full-mouth SRP and additional use of different antiseptics resulted in variations in clinical parameters. In total 92 generally healthy patients with chronic periodontitis completed the study. They were randomly divided into 5 groups. At baseline one-stage full-mouth SRP was performed. After that group M rinsed with Meridol, group L rinsed with Listerine, group C did not use any antiseptics, group EM rinsed with Meridol and used Elugel (0.2% CHX bioadhesive gel), group EL rinsed Listerine and used Elugel. Patients (EM and EL) were instructed to brush their tongue, mucosa and gingiva with gel after rinsing and gargling with mouthrinse. In all groups antiseptics were used for 2 weeks. Clinical assesments of PPD, CAL, PI, SBI, API and BOP were performed at baseline, 2 weeks and 3 months. At 2 weeks and 3 months, all parameters improved significantly ($P < 0.05$) compared to baseline. At 3 months statistically significant differences were observed in M and L group according to BOP and EL group according to PI. It was shown that combination of one-stage SRP with adjunctive use of examined antiseptics is more beneficial for plaque control than the use of machanotherapy alone.

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Ref no: EUABS064862

A spectrofotometric determination of zinc in periodontal tissues

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Zinc is a very important mineral element, involved in RNA and DNA sinthesis, formation of hormons, proteins and it is a good antiinflamatory agent. The aim of this study was to inquire the presence and the quantity of zinc in periodontal tissues in different stages of affliction and to compare these values with others obtained from normal tissues.

Material and method: The tissular biopsies have derived from 32 patients, males and females. A SPECTRA – SPAN VI has been used for mineral elements determinations, the minimal limit for detection was 0.02 ppm and promptitude of determination was 62 elements in 2 minutes.

Results: In every clinical form, the tissular zinc values were lower than in healthy periodontal tissues.

Conclusions: We have considered that these results may contribute to a better agreement of modifications which exist in affected periodontal tissues and even to complete the periodontal treatment.

310
Ref no: EUABS064855

One-stage full versus partial-mouth scaling and root planning under validity period of systemically administrated azithromycin

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Aims: Scaling and root planning (SRP) is generally performed several times for full-mouth treatment. There are the risks that the treated areas may be re-infected by periodontal pathogenic bacteria from the un-treated areas. Therefore we devised one-stage full-mouth SRP in conjunction with systemically administrated azithromycin (FM-SRP), and reported their effects. The purpose of this study was to compare the clinical and microbiological effects of FM-SRP with divided SRP into three times within one week (PM-SRP).

Materials and Methods: A total of 30 adult subjects with chronic periodontitis, were distributed to three groups (test group-1: FM-SRP, test group-2: PM-SRP and control group: six times conventional SRP) at random. Probing pocket depth (PPD), volume of clinical attachment level gain (CALG), percentage of bleeding on probing (BOP), gingival index (GI) and volume of gingival crevicular fluid (GCF) were recorded and bacterial samples were obtained before treatment (base-line) and after 1, 3, 6, 9 and 12 months. Quantitative and qualitative analysis were performed by real-time PCR method.

Results: All clinical parameters were improved in two test groups than control. Moreover, there were no significantly differences between two test groups.

Conclusion: PM-SRP under validity period of systemically administrated azithromycin can be obtained equal effects of FM-SRP.

311
Ref no: EUABS064873

Effectiveness of proliferating tissues in combination with bovine-derived xenografts to intrabony defects of alveolar bone in dogs

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Aim: The aim of this study was to investigate the effect of proliferating tissue used in combination with bovine-derived xenograft (BDX) on the formation of new cementum and bone in dogs.

Materials and Methods: Intrabony defects were treated with either BDX in conjunction with autogenous proliferating tissues (BDX-plus-proliferating tissues (BDX-P group)) or with BDX alone (BDX-alone group). The control group received no BDX or proliferating tissues. The animals were sacrificed after 2, 4, and 8 weeks of the treatment, and tissues were histologically examined.

Results: The specimens of control group were characterized by long junctional epithelium and little bone formation. The BDX-P group showed a statistically significant increase in new bone formation and new cementum compared to the BDX-alone group (30.9% versus 18.7, $P < 0.01$ and 87.8 % versus 61.8, $P < 0.01$). The proliferating cell nuclear antigen (PCNA)-positive cells ratio in the newly formed connective tissue of BDX-P group was significantly greater than that of BDX-alone group.

Conclusions: These findings suggest that the use of proliferating tissues in combination with BDX enhances new bone and cementum formation, offering potential as therapeutic material in periodontal regeneration.

312
Ref no: EUABS064918

Results of nonsurgical therapy in aggressive and chronic periodontitis

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Aim: Analysing factors influencing treatment results in aggressive (AgP) and chronic (ChP) periodontitis.
Methods: ChP (probing depth [PD]≥ 3.5 mm, attachment loss ≥ 5 mm at > 30% of sites; age > 35 years) and AgP (clinically healthy; PD≥ 3.5 mm at > 30% of sites, radiographic bone loss ≥ 50% at 2 teeth; age ≤ 35 years) were examined prior and 3 months after nonsurgical therapy.
Results: In 26 ChP (11 female, 7 smoker; 4.033 sites) and 13 AgP (10 female, 6 smoker; 2.141 sites) clinical results were more favorable at sites with PD≥ 6 mm, BOP, and with baseline *Porphyromonas gingivalis* and less favorable in AgP, smokers, and multi rooted teeth.
Conclusion: AgP responded less favorably to nonsurgical treatment than ChP. This study was supported by the German Society for Periodontology (DGP) and the German Society of Dental, Oral, and Maxillofacial Medicine (DGZMK).

313
Ref no: EUABS064883

Gingival crevicular fluid MMP-1 and TIMP-1 levels of generalized aggressive periodontitis treated with/without adjunctive metronidazole-amoxicillin

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Background: Metronidazole and amoxicillin combination (M + A) presents a good choice to halt the bacterial attack. Matrix metalloproteinases (MMPs) and tissue inhibitors (TIMPs) play an important role in the pathogenesis of periodontitis. The impaired balance between MMPs and TIMPs should be restored in treatment of periodontitis.
Aim: Our study aimed to examine the levels of MMP-1 and TIMP-1 in gingival crevicular fluid from patiens with generalized aggressive periodontitis treated with or without adjunctive M + A.
Methods: Twenty eight generalized aggressive periodontitis (GAgP) patients were included in this study. The control group (C) was treated with scaling and root planing only and the test group treated with adjunctive (M + A). Periodontal status was evaluated by measuring probing depth, clinical attachment loss, gingival and plaque index. MMP-1 and TIMP-1 levels were analyzed by enzyme-linked immunosorbent assay (ELISA).
Results: C had significantly elevated TIMP-1 concentration levels at 6 months compared to baseline ($P < 0.05$). Total amount of GCF MMP-1 levels were increased to statistically significant levels at 3 and 6 months within groups ($P < 0.05$), but there was no significant difference betwen groups ($P > 0.05$).
Conclusions: Our data indicate that increased GCF TIMP-1 and decreased MMP-1 levels are associated with resolution of periodontal inflammation and clinical healing. M + A has no differentiative effect on GCF TIMP-1 and MMP-1 levels of GAgP patients.

314
Ref no: EUABS064701

Outcome determinants of non-surgical periodontal therapy effect of age

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Aim: The present study was designed to evaluate the patient age as outcome determinant of non-surgical periodontal therapy.
Materials and methods: Two groups of subjects were retrospectively selected for analysis (group Y: $n = 26$, mean age:35.1 ± 6.7 years; group O:$n = 52$, mean age:50.8 ± 9.2 years). For each subject, pocket probing depth (PPD) and bleeding on probing (BoP) had been assessed immediately before (baseline) and 1 to 4 months after non-surgical therapy (re-evaluation). The number of sites within each PPD category (≤ 3 mm or shallow pockets =4÷6 mm or moderate pockets and ≥ 7 mm or deep pockets) was calculated. The prevalence of BoP-positive sites was calculated both full-mouth (FM-BoP) and within each PPD category ($BoP_{shallow}$, $BoP_{moderate}$, BoP_{deep}).
Results: At re-evaluation, group O exhibited a higher number of shallow pockets ($P < 0.000$) and a lower number of moderate and deep pockets ($P < 0.000$ and $P < 0.001$, respectively) with respect to baseline. Group Y exhibited a lower number of moderate pockets only ($P < 0.01$). When re-evaluation values were compared to baseline for BoP, FM-BoP was lower in both groups ($P < 0.05$), $BoP_{shallow}$ and $BoP_{moderate}$ were lower in group O only ($P < 0.05$), BoP_{deep} was not different in both groups. When changes of each parameter were compared between groups, no statistically significant differences were found.
Conclusions: Our results seem to indicate that the patient age exerts a limited influence on treatment response after non-surgical periodontal therapy.

315
Ref no: EUABS064703

Outcome determinants of non-surgical periodontal therapy effect of smoking status

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Background and Rationale: Contrasting results were obtained when the potential role of cigarette smoking as outcome determinant of non-surgical periodontal therapy was evaluated.
Aim: The aim of the present study was to evaluate the smoking status as outcome determinant of non-surgical periodontal therapy.
Materials and methods: Sixty five **s**moker and 66 non-smoker patients undergone non-surgical periodontal therapy were retrospectively selected for analysis. For each subject, pocket probing depth (PPD) and bleeding on probing (BoP) were assessed immediately before therapy (baseline) and 1 to 4 months after therapy (re-evaluation). PPD was categorized into 3 groups (≤ 3 mm or shallow pockets = 4÷6 mm or moderate pockets and ≥ 7 mm or deep pockets) and the number of sites within each PPD category was calculated. The prevalence of BoP-positive sites was calculated both full-mouth (FM-BoP) and within each PPD category ($BoP_{shallow}$, $BoP_{moderate}$, BoP_{deep}).
Results: Non-surgical therapy was effective in both groups, with a statistically significant increase of shallow pockets and a decrease of moderate and deep pockets, FM-BoP, $BoP_{shallow}$, $BoP_{moderate}$, BoP_{deep} ($P < 0.05$). For each parameter, no intergroup differences were detected in terms of PPD and BoP changes after therapy.

Conclusions: Our results seem to suggest that smoking status has a limited influence on treatment response (shift in PPD, BoP reduction) after non-surgical periodontal therapy.

316
Ref no: EUABS064706
Mechanical instrumentation and antimicrobials: microbiological effects
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Aim: To evaluate the microbiological effects of mechanical instrumentation (SM) associated to self-administrated use of local antimicrobials (AmF/SnF_2) in periodontitis patients.
Materials and methods: Patients underwent single or multiple sessions of SM and were prescribed with AmF/SnF_2-containing toothpaste and mouthrinse for 12 weeks. Subgingival microflora was sampled pre-SM and 12 weeks post-SM.
Results: 12-week post-SM bacterial counts still exhibited a substantial reduction with respect to pre-SM values (Total Bacterial Count: -70%; Total Pathogens: -69%; Red Complex: -75%; *Aggregatibacter (Actinobacillus) actynomicetemcomitans*: - 94%).
Conclusions: SM plus antimicrobial regimen induce a non-selective reduction of the subgingival microbial flora, including periopathogenic bacteria, which persists at 3 months following treatment.

317
Ref no: EUABS064721
Treatment of buccal class II furcations with a bovine derived xenograft alone or combined with a collagen membrane – preliminary results
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Aim: To present first data of a randomized controlled clinical study evaluating outcomes of regenerative surgery at mandibular buccal class II furcation defects with bovine derived xenograft alone or combined with a collagen membrane.
Material and methods: Ten out of an intention to treat population of 40 chronic periodontitis patients were randomly treated with bovine derived xenograft (Tutodent® microchips, Tutogen, Neunkirchen am Brand, Germany) alone ($n = 5$) or combined with a collagen membrane ($n = 5$, Tutodent® membrane, Neunkirchen am Brand, Germany).The following parameters were evaluated at baseline and 6 months:a) vertical and horizontal probing pocket depths b) vertical and horizontal clinical attachment level c) horizontal probing bone levels (HPBL).
Results: Primary wound closure was achieved in all cases. No patient presented with swelling, pain or any sign of allergic reaction against the biomaterials. Membrane exposure was not observed. After 6 months of healing, mean horizontal probing depth reduction for teeth treated with bovine derived xenograft alone was 1.7 mm and for teeth receiving the combined therapy 1.25 mm. The mean reduction in HPBL was 0.6 mm for bovine derived xenograft alone group versus 1.25 mm for the combined therapy.
Conclusion: The preliminary data after 6 months indicate that both treatment modalities result in improvements of clinical variables. Reductions in HPBL point to an advantage of the combined therapy over bovine derived xenograft alone.

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Ref no: EUABS064737
Effect of tooth mobility in the healing of class II furcation defects treated by a GTR procedure
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The aim of this study was to evaluate the effect of tooth mobility in the healing of class II furcation defects treated by a Guided Tissue Regeneration (GTR) procedure using 18 patients with such defects on the facial aspect of their lower molar teeth. One lateral mandibular sextant was splinted, the other was unsplinted. After initial therapy, the surgical flap procedure was performed in both sextants on the same day. Full thickness periodontal flaps were elevated over each furcation defect, granulation tissue was removed and root surfaces were thoroughly planned. All furcation defects were filled with a bone implant (BIO-OSS) and then covered with a bioresorbable membrane (BIOGUIDE). Attachment level, probing pocket depth, and bone level were recorded before and 6 months after surgery. Tooth mobility data was collected one week before and at 3, 12 and 24 weeks after surgery. The findings showed that no difference in healing was observed between splinted and mobile teeth following treatment of class II furcation defects by GTR.

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Ref no: EUABS064742
Comparation of hydroxyapatite with poly ''L'' lactide bone graft and natural bovine bone material in the treatment of periodontal osseous defects
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Periodontal surgical procedures have focused on the elimination of hard and soft tissue defects by regenerating new attachment. The present investigation was designed to clinicaly evaluate and compare Biohapel (BH) and BIOOSS in the treatment of human periodontal osseous defects. Twenty patients with three similar defects with advanced periodontal destruction were treated with initial therapy after which defects were randomly assigned for surgical treatment with BH and BIOSS. One defect was left unfilled as control. Clinical parameters were recorded from a grooved attend before surgery and at 6 months post surgery. Clinical assessment of plaque index, gingival fluid and sulcular bleeding index showed that all treatment modalities resulted in statistical significant improvement at 6 months ($P < 0.001$) with no statistical differences between groups ($P > 0.05$). Reduction in pocket depth gains in probable attachment levels and osseous defects filled were significantly improved at 6 months at both control and experimental sites with statistically better results at experimental sites.

320
Ref no: EUABS064743
The use of metronidazole in periodontitis treatment
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The gingival inflammation during the periodontitis is mostly exudative and degenerative, with characteristic vascular reactions, cellular infiltration and degeneration of the lamina propria. During the inflammation, the color, volume, shape, consistency and

gingival surface structure are changed. The basic subject symptoms following the inflammation are bleeding on mechanical provocation and feeling of discomfort among the teeth. The aim of our research was: to distinguish the inflammation reduction rate during the periodontitis using the casual therapy, and to distinguish the effects of topical metronidazole on elimination of gingival inflammation. Twenty patients, of both sexes, of average age 46.8 were included in our research. They were treated at the Department of Periodontology and Oral Medicine in Belgrade. All of them had the presence of gingival inflammation during the advanced periodontitis. The results of our study are following: there has been noticed the reduction of plaque index and gingival inflammation index in both the groups, however, statistically important reduction of index values has been noticed in topical metronidazole application region. At the end, we may conclude that the use of topical metronidazole represents important procedure in reduction of bleeding and inflammation of the gingiva. So, the use of metronidazole with adequate causal therapy should be the principal method in eliminating inflammation in advanced periodontitis.

321
Ref no: EUABS064785

Clinical and histological evaluation of an acellular dermal matrix allograft in the treatment of class I recession: an experimental study in minipig

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Objectives: To study the wound healing of acellular dermal matrix allografts (ADM) when used together with coronally advanced flaps (CAF) in the treatment of localized gingival recessions in the mini-pig experimental model.
Materials and methods: Dehiscence defects were surgically created at buccal root surfaces in mini-pigs. They were then treated with CAF and the interposition of either a connective tissue graft (CTG) or ADM. As primary outcome the histological interface between the ADM and the root surface was studied and compared it with CTG. As secondary outcomes we assessed the amount and quality of the keratinized tissue and clinical outcomes in terms of root coverage and recession reduction.
Results: At three months, the CTG group attained a mean 76% root coverage, versus 62% ADM group. The histological interface with the root surface was similar in both groups. The apical migration of the epithelium was short (1.79 ± 0.46 mm for the CTG and 1.29 ± 0.45 for ADM). Newly formed cementum was observed with both treatments. New bone and a newly formed periodontal ligament were shown in 5 specimens in the ADM group and in 3 in the CTG group.
Conclusion: Both materials rendered similar clinical and histological outcomes.

322
Ref no: EUABS064801

Evaluation of the influence of ozonotherapy on the clinical parameters and MMPs levels in patients with chronic and aggressive periodontitis

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The aim of the study was the comparative evaluation of periodontal parameters and levels of MMP-1, MMP-8 and MMP-9 in saliva of patients with CP and AP, who were treated with SRP and SRP with ozonotherapy.
Material and method: The 1 group consisted of 15 patients with chronic periodontitis, who had only SRP. The 2 group comprised 25 patients with chronic periodontitis, and 3 group 15 patients with aggressive periodontitis. The group 2 and 3 had performed SRP with additional ozonotherapy. The ozonotherapy was carried out three times every two days. The clinical parameters were measured at the initial examination, after two weeks and after two months from the baseline. Unstimulated saliva was obtained on every visit from each of the patients and one time from healthy subjects with clinically healthy periodontium (C). All samples were frozen and kept until used for enzyme assays. Elisa analyses of MMPs were performed using commercial kits (R&D Systems). The results were statistically evaluated.
Results: There were statistically significant decreases in clinical parameters in all groups after treatment. The improvement of clinical parameters was comparable in all groups. The levels of MMPs are elevated in saliva of patients with chronic and aggressive periodontitis in comparison with controls.
Conclusions: SRP and SRP with ozonotherapy affect favourably the clinical condition of periodontium. The ozonotherapy has no additional influence on MMPs levels and clinical parameters.

323
Ref no: EUABS064333

Effect of follow-up intervention using the prochaska model for the use of a powered toothbrush in a Japanese workplace: a randomized controlled trial

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Background: Although a powered toothbrush may be of some clinical benefit over manual brushing, patients are not always compliant with its use. This study investigated the effect of follow-up intervention by an industrial nurse using the Prochaska model following professional instructions in using a powered toothbrush.
Methods: Annual statutory health examination including oral examination was performed for 199 workers of a chemical company in Japan, and 123 workers agreed to participate in this study. After a baseline survey by questionnaire and oral examination, participants attended two sessions of professional oral health instruction and were provided a powered toothbrush. Then, the participants were randomly allocated into two groups; one group was contacted by an industrial nurse every month (test group), and the other group was not (control). All participants received a replacement of the headpiece of the powered toothbrush every 3 months. After twelve months, the questionnaire survey and oral examination were repeated.
Results: Of 123 participants, 101 completed the 12-month follow-up. There was a higher frequency of daily powered toothbrush use in the test group compared with that in the control ($P = 0.046$).
Conclusions: These findings indicate that follow-up intervention by an industrial nurse was more effective than a single instruction session in maintaining good oral health habits.

324
Ref no: EUABS064310

Improved wound healing by low-level laser irradiation after gingivectomy operations

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Aim: Low-level laser therapy (LLLT) may induce morphological, molecular and cellular processes, which are involved in the wound healing. The aim of this split-mouth controlled clinical

trial was to assess the effects of LLLT on healing of gingiva after gingivectomy and gingivoplasty.
Materials and methods: Twenty patients with inflammatory gingival hyperplasias on their symmetrical teeth were included in this study. After gingivectomy and gingivoplasty, diode laser (588 nm) was randomly applied to one side of the operation area for 7 days. The surgical areas were disclosed by a solution (Mira-2-tone) to visualize the areas in which the epithelium is absent. Comparison of the surface areas on the LLLT applied sites and controls were done with an image analyzing software.
Results: Despite the prolonged time needed for application, patients have tolerated LLLT well. While there were no statistically significant differences between the stained surface areas of the LLLT-applied and the control sites immediately after the surgery, LLLT-applied sites had significantly lower stained areas compared to the controls on the postoperative 3rd, 7th and 15th days. ($P < 0.001$ for each).
Conclusions: Within the limitations of this study, the results indicated that LLLT may enhance epithelization and improve wound healing after gingivectomy and gingivoplasty operations.

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Ref no: EUABS064529
Clinical comparison of effect of tree toothbrushes: Pulsar, Crossaction and Butler on gingivitis and plaque removal
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The aim of this study was clinical comparison of three types of toothbrushes Pulsar, Crossaction and Butler on gingivitis and plaque removal. This clinical trial was performed on the 30 dental students without periodontal disease. At baseline, oral hygiene instruction and plaque removal performed for all subjects; and they didn't? brush for 1–2 days then plaque scores and gingivitis were evaluated using plaque Index (PI) and Gingival Index (GI), after that Pulsar toothbrush was given for a 2-week usage, then Plaque Index and Gingival Index were recorded. After 1 week for wash out, they didn't brush for 1 to 2 days again and PI and GI were recorded and Crossaction toothbrush was given and results after 2 weeks were recorded and this procedure was repeated for Butler toothbrush. At the end of the study the variables of PI and GI for three types of toothbrushes were compared together. All the three types of toothbrushes reduces plaque and gingivitis significantly and the plaque reduction in the Pulsar toothbrush was significantly more than Butler toothbrush ($P = 0.03$). There was a statistically significant reduction in Gingival Index in favor of Pulsar compared with Butler ($P = 0.04$). There were not any significant differences between Pulsar and Crossaction toothbrushes. The reduction of the plaque and gingivitis in the all three types of toothbrushes were statistically significant and this reduction was greater for Pulsar compared with Crossaction and Butler.

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Ref no: EUABS064536
Analgesic efficacy of Celecoxib versus Prednisolone for the prevention and control of postoperative pain after periodontal surgery
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Background: Postoperative pain after periodontal surgical procedures is a common complaint. The purpose of the present study was to compare the analgesic efficacy of Celecoxib (CEL) and Prednisolone (PRED) after mucoperiosteal flap with minor osseous surgery (MPF/MOS).
Methods: In this randomized, double-blind, cross-over, placebo-controlled, clinical trial, 20 patients with generalized, moderate to severe chronic periodontitis, underwent three MPF/MOS with at least 4 weeks interval. Each quadrant was randomly assigned to one of the following medications in two doses starting 1 hour before surgery: 200 mg CEL, 10 mg PRED, and placebo. Pain was assessed by a visual analog scale (VAS) and a five-point verbal rating scale (VRS-5) at 11 predetermined time periods.
Results: There was a statistically significant lower pain in the CEL group than placebo during nine postoperative time periods using VAS ($P = 0.03$). The level of pain was lower in PRED group than placebo at the 4-hour period ($P = 0.045$) and during the day after surgery ($P = 0.01$). Statistically significant lower pain with the use of CEL was reported at three postoperative hours (3, 5 and 6), than PRED ($P = 0.02$). There was a positive correlation between VAS and VRS-5 ($P = 0.0001$, $r = 0.938$).
Conclusion: Preemptive and postoperative use of CEL and PRED were effective in the management of pain following MPF/MOS. However during the first 8 postoperative hours, Celecoxib showed superior efficacy in the duration and continuity of pain relief.

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Ref no: EUABS064663
Augmentation of the hard palate thin masticatory mucosa in the potential connective tissue donor sites
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The masticatory mucosa of the hard palate in the area extending between distal line angle of the canine to mesial line angle of the second molar is the potential donor site for subepithelial connective tissue. Autogenic transplants of this tissue are widely used in the plastic mucogingival surgery and according to many authors their use brings the most satisfying clinical results. Often reharvesting from the same area is necessary when multiple root coverage surgical procedures are involved. Limited thickness of palatal masticatory mucosa is main restriction in its acquisition. In the present study the authors present a method of masticatory mucosa palatal augmentation with the use of liofilized collagen sponge of animal origin. The augmentation of donor sites was carried out 8 weeks before the surgery involving the use of autogenic hard palate connective tissue. Clinical examination and histological analysis and comparison between augmented and nonaugmented tissue in the same patient was carried out. On the basis of available literature and own experience the methodology has been justified outlining both indications and contra-indications of the presented therapeutic method.

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Ref no: EUABS064671
Results of nonsurgical therapy in aggressive and chronic periodontitis
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Aim: Analyzing factors influencing treatment result in aggressive (AgP) and chronic (ChP) periodontitis.
Methods: ChP (probing depth [PD] ≥ 3.5 mm, attachment loss ≥ 5 mm at >30% of sites; age > 35 years) and AgP (clinically healthy; PD ≥ 3.5 mm at >30% of sites, radiographic bone loss ≥50% at two teeth; age ≤35 years) were examined prior and 3 months after nonsurgical therapy.

Results: In 26 ChP (11 female, 7 smoker; 4,033 sites) and 13 AgP (10 female, 6 smoker; 2,141 sites), clinical results were more favorable at sites with PD ≥ 6 mm, BOP, and with baseline *Porphyromonas gingivalis* and less favorable in AgP, smokers and multi rooted teeth.
Conclusion: AgP responded less favorably to nonsurgical treatment than ChP. This study was supported by the German Society for Periodontology (DGP) and the German Society of Dental, Oral and Maxillofacial Medicine (DGZMK).

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Ref no: EUABS064638

Effects of topical application of COQ_{10} in patients with gingivitis: a pilot study (preliminary results)

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Aim: To analyze the effects of topical application of CoQ_{10} on tissue inflammation in patients with gingivitis and its influence on GCF TAOC.
Materials and methods: CoQ_{10} gel (MSEGmbH) was applied for 2 weeks on gingival tissue of seven patients with gingivitis. Inclusion criteria: No periodontal treatment in the last 6 months, no smokers, no diet or illnesses affecting antioxidant profile. Treatment was performed on one or more sextants of a single dental arch for each patient. Clinical evaluations (PPD, PMPS, PMBS, SPS, BOP, PlI, GI) and biochemical analysis (GCF volume, TAOC) were performed at baseline and after treatment. Control sites were constituted by antagonist areas to treated ones.
Results: At baseline no significant differences were found between treated and control. GI is significantly improved after therapy in treated compared to control ($P < 0.05$). SPS is significantly reduced only in treated sites ($P < 0.05$). The remaining parameters didn't show significant improvement after treatment. GCF samples volume decreased in five patients after treatment; 50% of patients showed GCF TAOC increase.
Discussion and conclusions: These results suggest a multiple role of CoQ_{10} in inflamed gingiva. Antioxidant activity causes ROS decrease in periodontium and a shift of gingival sulcus' redox potential. The role of CoQ_{10} in mitochondria reflects its important action in oxidative phosphorylation process: CoQ_{10}, increasing the availability of ATP, improves the efficiency of repair processes and periodontal blood vessels tone.

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Ref no: EUABS064573

Application of 980-nm diode laser in flap operation

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Objective: The aim of this study was to examine the immediate effect of 980-nm diode laser application in flap operation on the pathogenic bacteria concentration in periodontal pockets.
Background: The use of laser is one of the most recent methods in periodontal treatment. All the benefits of laser application have yet to be determined.
Material and methods: A number of x patients, with an average pocket depth of z, were included in the study. Patients were randomly allocated in two groups: control group ($n = x$), in which traditional flap operation was performed and test group ($n = x$), in which traditional flap operation and 980-nm diode laser root surface treatment were performed. Smear for PCR examination was taken before and after each flap operation in the control group, and before operation and after the laser treatment in the test group.
Results: In the control group PCR examination results from before the procedure were …. and the results from after the procedure were… The average reduction in the pathogenic bacteria concentration after the procedure in the control group was… In the test group PCR examination results from before the procedure were… and the results from after the procedure were… The average reduction of the pathogenic bacteria concentration after the procedure in the test group was…
Conclusion: The application of the 980-nm diode laser in flap operation is statistically significant in the reduction of the pathogenic bacteria.

331
Ref no: EUABS064585

The effect of Green Tea Extract mouthwash in treatment of moderate gingivitis

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The use of mouthwashes is one of the common adjunctive methods for treatment of Gingivitis. Today the effects of different herbal mouthwashes on gingival inflammations are investigated. The aim of this study is to determine the effect of Green Tea Extract mouthwash in treatment of Gingivitis. In this single-blind experimental study, 40 female high school students (age 14–16) with Moderate Gingivitis were selected and divided into two groups (test and control). A same oral hygiene method was instructed to all of them. The test group used Green Tea Extract mouthwash and the control used placebo, two times daily for 5 weeks. The PI (Plaque Index Silness and Loe), GI (Gingival Index Loe and Silness) and BI (Bleeding Index Barnet) were measured for all cases at baseline, and once a week for 6 weeks. Results were analyzed by Paired-t-test and and repeated measurement tests. All indices decrease significantly in both groups ($P < 0.0001$), but test group showed more significant decrease in PI after four ($P = 0.04$) and BI after 5 weeks ($P = 0.002$). GI measurements showed no significant differences between the two groups.
Conclusions: According to the results Green Tea mouthwash can have an effective role in treatment of Gingivitis by reducing BI and PI.
Key words: Herbal Mouthwash, Gingivitis, Green tea, Camellia Sinensis.

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Clinical effects of an essential oils solution used as a coolant during ultrasonic root debridement

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Aim: The use of chlorhexidine and povidone iodine solutions applied as a coolant during ultrasonic root debridement for the treatment of chronic periodontitis has been described. Hitherto, this application has not been documented for essential oils solutions. The goal was to clinically explore this and to compare with water irrigation.
Materials and methods: Thirty-five chronic periodontitis patients participated in a single-blind randomized controlled clinical study. Patients were randomly allocated to the control group ($n = 18$) or test group ($n = 17$) receiving oral hygiene instructions and ultrasonic root debridement using water as a coolant, respectively a pure essential oils solution. Oral hygiene was reinforced if necessary at each occasion and clinical parameters were collected at baseline after 1 and 3 months.

Results: Significant pocket reduction (control: 1.02 mm; test: 0.89 mm) and clinical attachment gain (control and test: 0.48 mm) was shown in both groups. However, there were no significant differences between the groups at any point in time for any of the parameters.
Conclusion: Essential oils solutions do not offer a clinical benefit over water when used as a coolant during ultrasonic root debridement for the treatment of chronic periodontitis.

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Ref no: EUABS063885

Antimicrobial photodynamic therapy in the non-surgical treatment of aggressive periodontitis: clinical, biochemical and microbiological results

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The use of antimicrobial photodynamic therapy (aPDT) in the treatment of aggressive periodontitis (AP) was investigated. Ten patients with AP were treated using a split-mouth design with either aPDT using a laser source associated to a photosensitizer or scaling and root planing (SRP). Plaque index (PI), Gingival Index (GI), Bleeding on Probing (BOP), Probing Depth (PD) and Relative Clinical Attachment Level (RCAL) were evaluated using an automated probe at baseline and 90 days later. Biochemical parameters measured in the gingival fluid at -7, 0, 1, 7, 30 and 90 days were: TNF-alfa and RANKL. The effect of therapies on 40 bacterial species was assessed by checkerboard DNA–DNA hybridization at -7, 0 and 90 days.
Results: Clinically, aPDT and SRP presented similar and significant reductions in PI, GI, BOP, PD and gains in RCAL. Biochemically, both treatments presented similar and significant reductions in crevicular TNF-alfa and RANKL. Microbiologically, the proportions of seven bacterial species were significantly affected by SRP, and two by the aPDT. The aPDT was more effective in reducing proportions of *A. actinomycetemcomitans*, and SRP of *T. forsythia* and *P. gingivalis*.
Conclusion: Antimicrobial photodynamic therapy (aPDT) and SRP led to similar results in relation to clinical and biochemical parameters, while microbiologically they affected different groups of bacteria, suggesting that their association would be indicated for the non-surgical treatment of AP. Sponsored in part by Helbo Photodynamic Systems, Austria.

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The effect of connective tissue graft orientation on the root coverage outcomes

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Gingival recession is one of common problems periodontists are dealing with. The aim of this study was to evaluate the effect of connective tissue graft orientation on clinical outcome of root coverage in conjunction with coronally advanced flap. Eight patients were treated using coronally advanced flap and connective tissue graft harvested from the palate. The defects in each patient were randomly allocated to P-teeth or P-flap groups with the periosteum contacting the tooth surface or the flap, respectively. Recession depth (RD), recession width (RW), gingival sulcular depth, clinical attachment level, length of keratinized tissue, papilla width and percentage of root coverage were measured at baseline, 1 and 3 months postoperatively. Wilcoxon and Mann-Whitney U tests were used for analyzing the data. The reduction in RD averaged 3.68 mm in P-teeth and 3.25 mm in P-flap. RW decreased in P-teeth and P-flap, significantly. Keratinized tissue increased in P-flap and P-teeth. Clinical attachment gain equaled 3.87 mm for P-teeth and 3.32 mm for P-flap. All variables exhibited significant improvement compared to baseline, but between-group differences were negligible ($P > 0.05$). It could be concluded that while the application of connective tissue graft with coronally advanced flap is efficient for coverage of gingival recession defects, the short-term clinical outcome of this surgical method is not affected by orientation of connective tissue graft.

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Ref no: EUABS064047

Enamel matrix derivative Emdogain as an adjuvant for laterally-positioned flap in treatment of gingival recession: an electron microscopic appraisal

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Enamel matrix derivative (EMD), such as Emdogain, has been suggested for the improvement of wound healing in periodontal surgical therapy. The present qualitative study seeks to illustrate the ultrastructural changes associated with a human gingival wound at 10 days after the application of EMD as an adjunct to a laterally-positioned flap in a patient with gingival recession. An otherwise healthy patient, who had been suffering from bilateral gingival recession defects on teeth #23 and #26, was studied. One defect was treated with a laterally-positioned flap, while the other was treated with a combination of EMD and a laterally positioned flap. Ten days after the operation gingival biopsy specimens were obtained from the dentogingival region and examined using a transmission electron microscope. The fibroblasts of EMD site were more rounded with plump cytoplasms and euchromatic nuclei. While the signs of apoptosis could rarely be detected at EMD site, apoptotic bodies and ultra-structural evidence of apoptosis (crescent-like heterochromatic nuclei and dilated nuclear envelopes) were consistent features at non-EMD site. The extracellular matrix at EMD site mainly consisted of well-organized collagen fibres, while non-EMD site contained sparse and incompletely-formed collagen fibres. It seems that EMD may enhance certain features of gingival wound healing, which may be attributable to its anti-apoptotic, anti-bacterial or anti-inflammatory properties.

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Ref no: EUABS064020

Clearance of topically applied PVP-iodine as irrigant or gel in periodontal pockets

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Aim: To investigate the substantivity of PVP-iodine applied as a gel or solution in periodontal pockets.
Materials and Methods: Teeth of 10 subjects with at least seven periodontal pockets of ≥ 5 mm were isolated with rubberdam allowing contamination-free access to the pockets. Three pockets were filled with PVP-iodine gel (10%) and three with PVP-iodine solution. A comparative site of each subject served as control. Any excess was carefully removed with a cotton pellet. After 1, 5 and 15 min, a paper tip was inserted into the pocket and the concentration of PVP-iodine was determined chemically using the Sandell–Kolthoff-technique.

Results: PVP-iodine was detectable at all evaluation times in a descending order. No PVP-iodine was measured in the control pockets. The following mean concentrations were measured for the ointment and solution, respectively: 6140 ppm and 4440 ppm (1 min; $P > 0.05$), 3200 ppm and 1440 ppm (5 min; $P \leq 0.05$), 690 ppm and 235 ppm (15 min; $P \leq 0.05$).
Conclusion: This study showed that a concentration of 1000 ppm and higher can be maintained over 5 min. PVP-iodine as gel may be more potent in the control of periodontal microbiota in comparison to the corresponding solution. However, additional bleeding due to routine scaling and rootplaning may jeopardize the maintenance of a high concentration and further research is needed to evaluate concentrations under these circumstances.

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Ref no: EUABS064031

Comparative assessment of connective tissue grafts for root coverage with and without citric acid application

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Background: The present study was designed to evaluate the effect, if any, of citric acid root conditioning on the outcome of subepithelial connective tissue grafts performed to cover localized gingival recessions defects.
Materials and methods: Twenty-five patients participated in the study, each providing a recession site. Subepithelial connective tissue grafts were performed. Twelve patients received a citric acid demineralization while 13 did not. The clinical variables including recession width and depth and keratinized tissue were measured initially and 2 months post-surgically. Root coverage was compared between two techniques while assessing the grafting technique individually. Data were analyzed using *t*-test and paired *t*-test.
Results: After 2 months independent of whether citric acid was applied or not, a significant reduction in recession width and depth and an increase in the keratinized tissue ($P < 0.05$) was observed. On the other hand no statistically significant difference was observed between the two techniques in root coverage ($P > 0.05$).
Conclusion: It is concluded that: although the subepithelial connective tissue graft procedure provides a satisfactory solution in the treatment of localized gingival recessions, citric acid demineralization does not improve the clinical outcome of the surgical technique.
Key words: Citric acid; connective tissue; gingival recession; tooth demineralization; subepithelial.

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Ref no: EUABS063782

A comparative study between two techniques of root coverage with regard to interdental papilla dimension as a prognostic factor

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This study was designed to evaluate the effectiveness of ''Subepithelial Connective tissue autograft'' and ''Acellular dermal matrix allograft'' in root coverage procedure and to examine the effect of interdenal papilla dimensions on the outcome of root coverage using a new approach. This randomized controlled clinical study was consisted of 32 gingival recession defects of 32 mm classified as Miller's class I or II. Clinical parameters measured in this study included: Bleeding Point Index (BPI), Plaque Index (PI), Recession Depth (RD), Papilla Height (PH) and Papilla Width (PW). These parameters were measured at baseline and 6, 12 and 24 weeks post-surgery. With regard to the amount of mean root coverage, no significant difference was found between ADMA (85.42%) and SCTG (69.05%) groups ($P = 0.058$). Significant positive correlations were found between PH and PW values and mean root coverage ($P < 0.0001$ and $P < 0.001$, respectively). PH of 5 mm was associated with complete root coverage. Based on the results of this investigation, ADMA seems to be a good substitute for SCTG in treatment of shallow to moderate gingival recessions. In addition, measurement of papilla dimension, using the new method, is a valuable aid to predict the successfulness of future root coverage.

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Ref no: EUABS064066

Pain control by two anesthesia techniques in periodontal flap surgery: interseptal injection versus inferior alveolar and long buccal nerve block

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Aims: Pain control is not only an indisputable right of patients but also an essential part of treatment to achieve the patient's cooperation and satisfaction. The aim of this study was to compare the efficacy of interseptal injections as the main anesthesia in mandibular periodontal flap surgery with inferior alveolar and buccal nerve blocks.
Materials and methods: A randomized cross-over single blind-split mouth designed study evaluated 40 patients (28 females and 12 males) submitted to periodontal flap surgery. Contralateral injections were administrated at two separate appointments with random use of either the interseptal (test) or inferior alveolar and buccal nerve blocks (control). The intensity of pain on the injections was evaluated by a Visual Analog Scale (VAS).
Results: Both of the techniques achieved an effective pain control and no pain was reported during the surgical procedures by the patients. The mean injection pain in the test group was 21.44 ± 8.62 and in the control group was 20.62 ± 7.62 which was not statistically significant ($df = 78$, $t = 0.466$, $P = 0.642$). The postoperative pain intensity at 24 hours after surgery did not also expressed a significant difference (test: 9.30 ± 3.24; control: 7.97 ± 3.43) ($df = 78$, $t = 1.775$, $P = 0.080$).
Conclusion: According to the results of this study there was no difference between the two techniques considering pain. Further studies are recommended in order to find the most comfortable and painless anesthesia technique.

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Ref no: EUABS064136

Implant restoration in periodontal patients

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Aim: To use the implant restorations as prosthetic rehabilitation in patients with periodontal disease.
Method: We used two different types of implants: screw and cilindrics, which were radiological controlled to assess their osseointegration. Study group included: 10 subjects with gingivitis; 8 subjects with superficial periodontitis and 6 subjects with adult periodontitis. All subjects followed complex periodontal therapy and the results were assessed using objective indices (Plaque Index-PI, Bleeding Index-BI).

Results and conclusions: In all the cases IP and IS are significant decreasing to 10–15% after complex therapy. The osteointegration, controlled radiological, occurred 100% in subjects with gingivitis and superficial periodontitis and 90% in subjects exhibiting adult periodontitis. After insertion of the cylindrical implants, the bone loss in the first year was 0.5–1 mm, compared with 1.5 up to 2.5 mm bone loss after insertion of screw implants, in the same period of time.

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Ref no: EUABS064242

Effort of tooth preservation in supportive periodontal treatment in a German population

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Objectives: Assessment of effort (number of visits) and costs of tooth preservation 10 years after initiation of anti-infective therapy.
Methods: Data of 98 patients who had received active periodontal treatment 10 years ago by the same examiner were analyzed to gather information on effort and costs of supportive periodontal therapy (SPT). Clinical examination, interleukin-1 polymorphism test (IL-1), smoking, search of patients' files (i.e. initial diagnosis), as well as a questionnaire on medical history and socioeconomic data were performed. Statistical analysis was performed using multivariate linear regression analysis.
Results: During 10 years of SPT patients had 14.8 ± 7.4 visits. Number of visits was statistically significantly higher for individuals with a mean PCR ≥24%. The number of subgingival scalings per tooth ranged from 0 to 14 (mean: 1.2 ± 2.1). On tooth level several confounders could be identified: tooth type, initial bone loss, furcation involvement, abutment status and previous regenerative surgery ($P \leq 0.003$). Costs for therapy per tooth during SPT ranged from 1.21€ to 266.26€ with a mean value of 60.73€ ± 42.05€. On tooth level the tooth type, initial bone loss, abutment status, furcation involvement, and previous regenerative surgery showed statistical significance ($P \leq 0.002$).
Conclusion: Costs for tooth retention via SPT are relatively low compared to alternatives (i.e. implants or fixed bridgework) even in periodontally impaired teeth.

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Systemic and local application of risedronate and glucosamine in the treatment of chronic periodontitis in post-menopausal osteoporotic women

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Forty-five subjects were included in the study. They were randomly classified into five treatment groups each, in addition to controls (C). Each group received one of the following treatment modality: Systemic glucosamine (SG), systemic glucosamine + chitosan gel (SGCg), systemic risedronate (SR) or systemic risedronate + risedronate gel (SRRg). SGCg showed a statistically significant reduction in plaque index and gingival index, while SRRg showed a more favorable reduction probing pocket depth and clinical attachment level. While SGCg and SR gave favorable results in terms of bone gain as compared to SG and controls, a statistically significant bone gain was evident in SRRg as compared to the other treatment modalities. The mean difference of the *T* score of bone mineral density of the mandible showed a statistically significant improvement in SGCg, SR and SRRg versus C and SG groups, while that of the radius – ulna showed a statistically significant improvement in all groups versus controls. A positive correlation between DEXA of the mandible and that of radius – ulna in C and subjects who received systemic risedronate or glucosamine was observed at all evaluation periods, but not in the combined groups. It was concluded that the combined administration of topical and systemic glucosamine or risedronate had an additive favorable effect on the clinical and radiographic outcomes, as compared to their systemic administration alone.

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Ref no: EUABS064218

The survival of short versus conventional implants: a systematic review and meta-analysis

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Objective: To address the focused question ''is there a significant difference in survival between short and conventional osseointegrated dental implants placed in totally or partially edentulous individuals?'' by a systematic review and meta-analysis of randomized controlled clinical trials, controlled clinical trials or prospective studies published in English up to and including August 2007.
Methods: *PubMed* and *Cochrane* databases were scanned electronically and seven journals were searched manually. In the first phase of selection, titles and abstracts, and in the second phase, full texts were evaluated autonomously and in duplicate by two reviewers.
Results: The electronic and manual search provided 1056 and 14417 titles and abstracts, respectively. In the second phase of selection, the complete text of 300 publications was examined and 49 articles reporting on 29 patient cohorts were selected. Additional information was sought from 124 publications and was provided by the corresponding authors of 71 publications (57.26%). Meta-analyses revealed no significant difference in survival between short (defined as ≤7 mm, ≤8 mm or < 10 mm) and conventional implants (≥10 mm), both for smooth-surfaced and rough-surfaced implants placed in totally and partially edentulous patients.
Conclusions: Placement of short implants is an efficacious treatment modality for the replacement of missing teeth in totally and partially edentulous patients.

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Ref no: EUABS063813

Histomorphometrical analysis of bone formed after maxillary sinus floor augmentation using different non-autogenous graft materials

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Background: Various grafting materials have been successfully used to augment the lower part of the maxillary sinus: autogenous bone, DFDBA, xenografts, hydroxyapatite, bioglass, calcium sulfate and growth factors.
Aims: A retrospective analysis of 280 documented sinus-lift procedures in which 629 implants were used. The lateral window technique with a double (internal–external) collagen membrane was used in all cases. Different non-autogenous graft materials were utilized: Bio-Oss, Cerasorb (β-TCP), Oragraft (mineralized allograft), Bio-osteitic (TCP + HA) and 4Bone (TCP + HA). 76 core-biopsies were harvested 9 months after sinus floor augmentation using a trephine and stained with H&E. Histomorphometrical measurements were done using a millimeter eyepiece grid in a binocular stereomicroscope at ×200 magnification. The percentage of each tissue type (newly formed bone (NB), residual graft, bone marrow) in the sections was measured. The osteoconductive value was evaluated using a microscope equipped with a drawing tube, calculating the contact area between the graft particles and the newly formed bone divided into the total circumferences of the graft particles.
Results: (a) NB(%): Oragraft#* (29.1) Bio-Oss* (28.3) Cerasorb (26.6) Bio-Ostetic (29.3) 4Bone (28); (b) Osteoconductive value(%): Oragraft (58.7) Bio-Oss (51.6) Bio-Ostetic (22.8) 4Bone (57.8).
Conclusions: All types of graft materials used are suitable for sinus floor augmentation. # J. Perio Nov/2008 * Accepted *Int. J. Perio. Rest. Dent.*

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Clinical evaluation of lateral ridge augmentation by interpostional bone graft method, using a mixture of biomaterial and autogenous bone

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Background: Several treatment modalities have been presented to augment the bone in implant therapy. The aim of this study was a clinical evaluation of interpositional technique to increase the width of the ridge using the mixture of biomaterial and autogenous bone.
Methods: The width of ridge was measured at two reference points before augmentation in four patients. A mucoperiosteal flap was elevated and a horizontal and two vertical cuts were done at the crest and buccal side of the ridge. The pedicled bone mobilized gradually to create a furrow. This space was filled with graft material (Biomaterial and autogenous bone). Six months later the measurements were repeated and results were analyzed statistically.
Results: The mean ridge width had been increased 3.56 ± 0.78 mm ($P = 0.001$) after 6 months. The width of ridge significantly differed after augmentation. The mean of vertical bone loss was 0.75 ± 0.93 mm ($P = 0.056$) at reference points. The reduction was not statistically significant.
Discussion: The result of this study corresponds with the study of Ducan, Engeleke, Amatto and Sethi. The advantage of this method is the stability of graft material and no need for membrane.
Conclusion: Interpositional technique was a valuable technique for lateral ridge augmentation. A considerable increase in ridge width was observed after 6 months while vertical loss of bone was negligible.

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Ref no: EUABS064568

Computer assisted surgical intervention: a sophisticated approach for flapless minimally invasive implant surgery

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Aim: Modern implantology uses techniques that can provide function, esthetics and comfort with a minimally invasive surgical approach. Flapless implant surgery has been proposed to fulfill these requirements. Traditionally, flapless implant surgery was carried out by using a tissue punch technique, which may be potentially harmful because of the inherent blindness of the technique. The purpose of this paper is to introduce a predictable

flapless approach for treatment of several patients through principles of computer-assisted implantology.
Materials and methods: Using dedicated interactive computer software programs and 3D radiographic techniques, the precise location of each implant was planned. Using the concept ''prosthetic-driven implantology,'' surgery was carried out for the rehabilitation of several patients.
Results: The procedure of implant planning in this sophisticated technique has potential to yield substantial public health benefits.
Conclusion: This modern approach may contribute more advantages including safety, painlessness and little discomfort.

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Ref no: EUABS064572
Implant survival in periodontal susceptible and non-susceptible patients: a propective long-term study
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Aims: To evaluate implant survival rate of non-submerged implants with two different surfaces in healthy patients (NSP) and in patients with chronic advanced (CAP) or with generalized aggressive periodontitis (GAP).
Material and methods: In 110 healthy subjects, in 68 with CAP and in with 16 GAP, 513 implants were installed. Follow-up: 48.1 ± 25.9 mo. Smoking, health status, plaque score, BOP, surface, bone quality, bone loss and lost implants were noted.
Results: Survival in NSP and CAP: 98 and 96% (ns); 80% in GAP ($P = 0.003$). Overall rate of loss: 4.67 %. Loss in GAP: 15.25%. Overall mean bone loss: mesially 0.12 ± 0.71 mm and distally 0.11 ± 0.68 mm. Bone loss/year: mesially 0.08 ± 0.31 mm and 0.07 ± 0.3 mm distally in NSP; in GAP: 0.17 ± 0.2 and 0.17 ± 0.19 mm. TPS surfaces result in a lower survival compared to SLA surfaces (93% versus 97% ; $P = 0.06$) especially in GAP (80% versus 83%; $P = 0.005$). Survival in current smokers with GAP dropped to 63%. Overall, impaired health had no influence on implant survival ($P = 0.84$). However, impaired health reduced survival in GAP to 71%. In a statistical model fit to predict the chance for implant loss, periodontal classification ($P = 0.01$) and implant surface type ($P = 0.03$) were significant.
Conclusion: NSP and CAP patients were not different in peri-implant variables and implant survival rate. GAP patients had more peri-implant pathology, more bone loss and a lower implant survival rate. SLA surface had a better prognosis than TPS surface.

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Ref no: EUABS064690
Survival and success of astra tech osseospeed implants after 2 years
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Aim: To determine 2-year survival and success of Osseospeed implants.
Materials and methods: Of 350 patients who were consecutively treated by the same surgeon (BC) with 1100 Osseospeed implants (Astra Tech, Mölndal, Sweden) at least 2 years ago, 89 patients (57 females, 32 males; age range 29–76) with 357 implants responded to the 2-year recall. 210 implants (58.8%) were loaded immediately; 99 implants were placed according to a 1-stage and 48 implants according to a 2-stage procedure. Bone-level changes were assessed (SV) on digital radiographs from implant surgery up to 2 years in function. Implant success was determined as bone loss < 1.7 mm after 2 years.
Results: Nine implants in seven patients were lost, resulting in an overall survival rate of 97.5% and mean bone loss of 0.40 mm (SD = 0.77 mm). 6/9 lost implants occurred in the posterior mandible. Survival rate and mean bone loss was 99% and 0.28 mm (SD = 0.54) for immediate loading, 92.9% and 0.46 mm (SD = 0.90) for 1-stage, and 100% and 0.81 mm (SD = 1.18) for 2-stage. Bone loss was significantly higher ($P < 0.01$) for maxillary (0.43 mm, SD = 0.83) compared to mandibular implants (0.34 mm, SD = 0.74). A percentage of 93.3% of all implants had less than 1.7 mm of bone loss and was considered successful.
Conclusions: Osseospeed implants yielded a survival rate of 97.5% after 2 years with a mean bone loss of 0.40 mm.

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Ref no: EUABS064492
Retrospective clinical and radiological evaluation of mini versus conventional dental implants
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Objective: To evaluate and compare clinically and radiologically the peri-implant soft and hard tissue status around Conventional (Ankylos®) and Mini Dental Implants (IMTEC®) supporting various prostheses.
Methods: Twenty-two patients (14 men and 8 women) with mean age 45.5 years (age range 22–65 years) were treated at the Faculty of Dentistry; University of Malaya for missing teeth with implant supported prostheses. Peri-implant soft and hard tissue of 28 Mini Dental Implants (MDI) and 48 Conventional Dental implants (CDI) were examined clinically and radiologically. Clinical parameters assessed included Plaque Index (PI), Bleeding on Probing (BOP), Gingival Index (GI), Probing Pocket Depth (PPD), and Keratinized Mucosa (KM). Radiological assessments of peri-implant bone status were conducted using Leica QWin® image analysis software after more than 1 year (1–3 years) in relation to the baseline radiographs. Statistical analysis was performed using Mann–Whitney test.
Results: All clinical parameters (Pl, BOP, GI, PPD and KM) and radiological evaluation showed no statistically significant differences between all CDI and MDI. Mean distal bone loss was statistically significantly less around MDI, supporting removable prostheses ($P < 0.05$). Mean GI was significantly greater for MDI versus CDI, supporting fixed appliances ($P < 0.01$).
Conclusion: Within limitations of this study, overall clinical parameters and bone level status around CDI and MDI were not significantly different.

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Ref no: EUABS064516
Prevalence and risk factors of late biological failures of oral implants: a 5-year follow-up study
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Background: Implant survival has a very high rate, but biological complications are frequent in the peri-implant area.
Objectives: To evaluate the prevalence of late biological failures of oral implants, then determine risk factors of those complications.
Methods: Patients rehabilitated in hospital units with implant procedure 5 years ago were selected. Periodontal and peri-implant clinical examinations were made. Intra-oral radiographs were performed to assess peri-implant bone level.

Results: Seventy-two patients fulfilled the inclusion criteria. Thirty-nine (54.2 %) were examined at the end of 5 years of follow-up. They showed an implant survival rate of 90.7%. 57.5% of implants had peri-implant mucositis (bleeding on probing, marginal bone loss lower than 2.5 mm). Peri-implantitis prevalence was 27.4% (bleeding on probing, marginal bone loss higher than 2.5 mm, peri-implant pocket depth higher than 4 mm). Distribution of late biological oral implant failures was unpredictable and clustered to few subjects. Marginal bone loss around Straumann® and Nobel-Biocare® implants (1.8 mm ± 1.8 and 2.4 mm ± 1.7, respectively) was significantly lower than that measured around Friadent® implants (2.8 mm ± 1.6). Peri-implant bone destruction was significantly higher in maxilla (2.6 mm ± 1.8) than in mandible (1.4 mm ± 1.5).
Conclusion: Implant success rate was lower than the survival rate. Clustering of peri-implantitis cases to few patients suggests the existence of risk factors in these patients.

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Ref no: EUABS064517

Prevalence of oral implant complications and stability of peri-implant tissues: a 5-year follow-up study

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Background: Many complications can be encountered in oral implantology.
Objectives: Our objectives were to determine the prevalence of implant complications and assess peri-implant tissue stability according to denture type.
Methods: Patients rehabilitated in hospital units with implant procedure 5 years ago were selected. Peri-implant clinical examination was made. Intra-oral radiographs were performed to assess peri-implant bone level and prosthetic adaptation.
Results: During the 5-years of follow-up, 43.6% of patients consulted for mechanical and 18% for biological complications. 20.5% of patients showed bad oral quality of life and one subject presented an iatrogenic failure. 57.5% of peri-implants were affected by mucositis (bleeding on probing, bone loss < 2.5 mm) and 27.4% by peri-implantitis (bleeding on probing, bone loss ≥ 2.5 mm, peri-implant pocket depth ≥ 4 mm). Implants supporting complete dentures showed a bone loss (3.1 ± 2.0 mm) higher than those supporting partial dentures (1.6 ± 1.5 mm). Less peri-implant bone loss was detected under sealed dentures (1.8 ± 1.5 mm) than under screwed dentures (3.3 ± 2.3 mm). Bad-adapted dentures were associated with more bone loss (2.5 ± 2.1 mm) than well-adapted ones (1.9 ± 1.6 mm).
Conclusions: Several complications were diagnosed after 5 years of function and the nature of the denture seems to play a key role in the stability of peri-implant tissues.

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Ref no: EUABS064923

The effect of loading time on osseointegration and new bone formation around dental implants: a histologic and histomorphometric study in dogs

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Immediate loading of dental implants is a method of reducing implant treatment time without compromising its prognosis. In this study, the effect of loading time on the amount of bone-to-implant-contact (BIC) and bone formation around dental implants were evaluated histoligically. Three month prior to implantation, the lower premolar teeth of 15 dogs were extracted. Three or four dental implants were placed in the healed extraction sites for each dog ($n = 48$). Dividing the dogs into three groups, the implants were either loaded 48 hours or 1 week later with metallic or prefabricated acrylic crowns or were left unloaded until the time of sacrifice. Three month after implant insertion, the animals were sacrificed and samples were investigated to define the amount of BIC, lamellar and woven bone percentage, and local inflammation of the newly formed bone. No significant difference in the observed criteria was reported among three groups ($P > 0.05$); however, the unloaded group had the highest degree of BIC and the group loaded 48 hours after the primary implant insertion had the least. The prosthesis type had no significant effect on the implant success rate ($P > 0.05$). The lamellar and woven bone percentage of newly formed bone also did not differ in the three groups ($P > 0.05$). One implant from each group failed in this study. Loading time does not seem to significantly affect the degree of osseointegration and BIC and the composition of newly formed bone around dental implants.

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Alveolar crest augmentation using guided bone regeneration (GBR) in partially edentulous patients

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Background and aims: Alveolar crest augmentation may be needed to enable implant placement to an acceptable position. Augmentations were performed in partially edentulous patients using GBR technique. Our aim was to assess treatment outcomes and obvious reasons for failures in GBR.
Material and methods: Twenty-seven bone augmentations were carried out in 26 patients (18 females and 8 males, aged 17–68 years) using intra-orally harvested particulate bone grafts and titanium-reinforced ePTFE-membranes. Post-operatively, antibiotics and analgesics were prescribed and chlorhexidine-rinsing recommended. Low-dose doxycycline (30–50 mg) was prescribed to 23 cases for a period of 4–6 weeks. Eight subjects were smokers.
Results: Guided bone regeneration (GBR) was considered successful in 23 cases (85%) resulting in sufficient amount of bone for implant placement. The membrane was exposed in five cases (19%); among obvious reasons were inadequate flap closure or thin tissue biotype. Slight to severe signs of soft tissue inflammation/infection were observed in seven smokers and three non-smokers (altogether 37 %). Resolution of inflammation/infection occurred in six cases. Four cases, in which the membrane had to be removed prematurely, were considered as failures.
Conclusion: Guided bone regeneration (GBR) is a useful method for bone augmentation. As smoking clearly interferes with healing, cessation of smoking is recommended in association with GBR. Signs of inflammation do not necessarily result in augmentation failure.

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Histologic and histomorphometric evaluation of a xenograft in healing of human extraction socket for implantation and comparison with natural bone

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Background: The increase in treatment of complex implant cases in loss of ridge has drawn the attention of researchers towards using those materials able to promote bone regeneration. Socket preservation technique is recommended to minimize bone resorption. The aim of this study was to evaluate a collagenized xenograft (osteoBiol Gen-Os) in socket regeneration.
Materials and methods: This is a Randomized Clinical Trial study. Twenty-four cases (12 tests and12 controls) in 12 patients aged 30–40 were selected. Each person needed at least one tooth extraction (test), and at the same alveolus had a previous edentulous area (control). After tooth removal, the grafting material was put in socket. Four months later during implant placement, the specimens from both sites were sent for histologic and histomorphometric evaluations.
Results: Average percentages of newly formed bone were 39.63 ± 13.09 and 39.55 ± 17.31 in test and control group respectively, which were not significantly different. Residual biomaterial was % 6.73 ± 1.43. There were no statistically significant differences in any of the histological parameters (inflammation, foreign body reaction, vitality) between the groups. Both groups showed type 2 bone (lamellar and woven bone).
Conclusions: The xenograft Gen-Os that is a collagenized deantigenated porcine bone substitute is an appropriate biocompatible osteoconductive material that promotes osseous ingrowth at 3 months following socket preservation in human extraction sockets.

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A prospective clinical evaluation of the max implants up to 3 years: a multicentre project in three private practices

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The MAX implant is a wide diameter implant, designed to be placed in molar extraction sockets. The aim is to evaluate the outcome of these implants, placed under various conditions. Fifty-two patients, mean age 52, were recalled for evaluation in three private practices. Patients were treated with at least one MAX implant (Southern Implants, Inc., Irene, South Africa). Periodontal parameters were recorded and a radiograph was taken to evaluate bone levels. In 14 cases, a cone-beam scan was taken to evaluate the buccal and lingual/palatal bone levels. Also, the patients filled out the OHIP-14 questionnaire to rate their satisfaction. Sixty-six implants (24 mandible, 42 maxilla) were available for evaluation with a mean follow up of 14 months (range 3–34). Diameter was 8, 9 or 10 mm, while the length ranged from 7 to 13 mm. Sixty-one implants were placed in extraction sockets. Twenty-nine out of 66 implants were loaded immediately. In total, three implants failed, resulting in a survival rate of 95.5%. Mean interproximal bone level measured from abutment-fixture interface is 1.41 mm (range 0.65–4.15). The mean buccal and palatal/lingual bone level is 1.18 mm (range 0.32–1.92) and 1.05 mm (range 0.45–1.85) respectively. Mean bone loss is 0.35 mm (range 5.45–3.25) since time of surgery. No significant differences were seen between the mandible and the maxilla. The MAX implant is an innovative implant design which is highly successful, even in demanding situations whereby circumferential bone level is preserved.

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Ref no: EUABS064973

Vertical bone augmentation versus 7-mm long implants in posterior atrophic mandibles: results up to 4 months after loading

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Aim of this work was to evaluate whether 7-mm long implants could be a suitable alternative to longer implants placed in vertically augmented bone for the treatment of atrophic posterior mandibles. Sixty partially edentulous patients having 7–8 mm of residual crestal height measured on a CT scan above the mandibular canal received either two to three submerged 7-mm long implants (30 patients) or 10 mm or longer implants (30 patients) placed in vertically augmented bone. Three implants in three patients failed in the augmented group versus one implant in the short implant group up to the placement of the final prostheses. Consequently three prostheses versus one prosthesis could not be placed at the planned time. Four complications (dehiscence) occurred in four patients of the autogenous bone group versus none in the short implant group (no significant statistical difference). In two cases a partial loss of the graft occurred. No permanent paraesthesia of the alveolar inferior nerve occurred. Patients subjected to vertical augmentation recovered their full mental nerve sensitivity significantly later than those treated with short implants. Within the limits of this study, the early results suggest that, when the residual bone height over the mandibular canal is between 7–8 mm, 7-mm short implants might be a preferable choice since the treatment is faster, cheaper and associated with less morbidity than vertical bone augmentation.

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Ref no: EUABS064989

The influence of implant geometry on secondary implant stability evaluations

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Purpose: This study aimed to test secondary implant stability of three different implant designs by means of Periotest and Osstell measurements.
Materials and method: Eighty-eight implants (27 Straumann; 28 3i certain; 33 Ankylos) were installed in 44 referred patients (24 females and 20 males) with a mean age of 56.2 years (SD 12.3; range 32–78). The healing time in days between placement and measurement was for Straumann, 3i certain and Ankylos respectively 126.0 (SD 187.6; range 36–810) 111.5 (SD 129.5; range 34–558), and 139.6 (SD = 75.5; range 42–341). Measurements were repeated until a constant value was obtained. Periotest measurements were performed on healing abutment level, Osstell measurements were performed on implant level.
Results: The respective Periotest values were: Straumann: -4.7* (SD = 1.29), 3i certain: -4.3 (SD 1.42), Ankylos: -3.43* (SD 1.43). Ostell values were: Straumann: 72.8* (SD 6.70), 3i certain: 74.3 (SD 6.72), Ankylos: 77.2* (SD 6.72). The difference for both Periotest and Ostell assessment was statistically different between Straumann and Ankylos (*Oneway ANOVA $P = 0.002$). Correlation coefficient between Periotest – and Osstell measurements were: Straumann = -0.24, 3i certain = -0.65, Ankylos = -0.33.

Conclusion: Implant geometry influences significantly the behaviour of a given implant type under Osstell and Periotest testing after initial healing between surgery and loading.

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Ref no: EUABS065051

Bone remodelling pattern of implant placed in the posterior mandible: a radiographic study

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Purpose: The aim of this study was to analyze direct and long-term (4 years) marginal bone remodelling of various implant systems placed in the posterior mandibule with a single stage approach.
Materials and methods: Fifty partially edentulous patients received a total of 114 implants in the posterior mandible (TE implant, Straumann®, Switzerland; Replace® Select Straight, Nobel Biocare, Sweden; Branemark System® MKIV, Nobel Biocare, Sweden). All implants were non-submerged, and loaded 8–12 weeks post surgery. X-rays were taken at baseline, 6 weeks, after loading and at long-term. Using a image processing program (Image J), bone losses were measured at each time point. Bone levels were also recorded using the first thread as reference point.
Results: The mean bone loss reached 0.506 ± 0.498 mm at 6 weeks, 0.798 ± 0.599 after loading and 1.037 ± 0.799 after 4 years. Bone losses were significatively higher on smokers and on patients displaying signs of bruxism. No statistical difference was found between the different implant types.
Conclusion: Fifty percent of the bone loss had already occurred within the 6-weeks post surgery with all implant types. Higher bone losses were often associated to risk factors such as tobacco addiction and bruxism.

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Ref no: EUABS065069

Marginal bone loss around dental implants in correlation to implant length – 10-year results

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Objective: The aim of this clinical study was to evaluate, if marginal bone stability is depended upon implant length. A radiographic assessment was performed to assess whether short implants are less reliable in the long term as compared to longer implants. Implants were evaluated over a period of 10 years.
Material and methods: Forty-seven patients received 126 Astra Tech Implants (Astra Tech. AB, Mölndal, Sweden) in a two-stage surgical approach. Implants were loaded after a 3-months healing period. Standardized intra-oral radiographs were taken after implant surgery and at final prosthetic restoration. Clinical and radiological follow-ups were then performed on a yearly basis.
Results: A mean marginal bone loss of 0.6 mm (SD: 1 mm) could be measured after an observation period of 10 years. Implants of 15 mm length showed a bone loss of 1.0 mm, 13 mm implants 0.2 mm, 11 mm implants 0.7 mm and 9 mm implants 0.3 mm.
Conclusion: These long-term 10-year results show that short implants do not lead to a higher marginal bone loss as compared to longer implants.

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Ref no: EUABS065140

The effect of placement of Straumann Esthetic Plus® dental implants on marginal soft and hard tissues – a randomized controlled clinical trial

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Aim: The effects on tissue incorporation of the Straumann Esthetic Plus® (test;T) implants were to be compared to those of standard Straumann® (control;C) implants.
Material and methods: Eighteen patients with multiple missing teeth in posterior areas were recruited. Two implants (T or C) were randomly inserted in the same sextant to the same sink depth. Approximately 1.8 mm of the neck portion was located supracrestally. Parallel-technique radiographs were obtained at baseline, 6 and 12 months and digitized. Two examiners, blinded to the implant type, evaluated marginal bone remodeling.
Results: The mean crestal bone levels and soft tissue parameters were not significantly different between T and C implants at all time points. However, a frequency analysis revealed higher percentages of T implants with crestal bone levels below 2 mm when compared to C implants, after 1 year of loading.
Conclusion: The Straumann Esthetic Plus® implants yielded a potential to maintain the marginal bone levels at a position more coronally than did the standard Straumann® implants. However, factors other than the vertical position of the SLA surface may also influence the marginal bone level.

361
Ref no: EUABS065112

Clinical and radiographic evaluation of implants with double-microthread at the neck: 1-year prospective study

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The stability of periodontal condition and marginal bone level was important to achieve long-term success of dental implant treatment. The aim of this prospective study was to evaluate periodontal conditions and marginal bone loss around 67 GSII (OSSTEM, Seoul, Korea) dental implants with double-microthread at the neck portion, 1 year after prosthetic loading. Sixty-seven GSII dental implants in 27 patients (mean age 47.4 ± 14.0 years) who received implant treatments at Pusan National University Hospital, were included in this study. Thirteen USII (OSSTEM, Seoul, Korea) implants with smooth neck design were selected for the control group. Periodontal and radiographic evaluations were carried out at baseline, 6 months and 12 months after prosthetic loading. In the GSII group, plaque index (PI), gingival index (GI) and probing depth (PD) increased as time passed. In the USII group, GI and PD increased. Although marginal bone level was lower in the USII group in all evaluation periods, the changes between baseline and 12 months were not statistically significant (0.26 ± 0.23 ~ 0.33 ± 0.25 mm, $P < 0.05$). In each period, periodontal parameters were not statistically significant between groups. One year after prosthetic loading, GSII and USII dental implants showed similar periodontal conditions and marginal bone response, and were within the criteria of success.

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Ref no: EUABS065097
Success and survival of single-tooth implant: retrospective analysis
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Objective: This retrospective, multicenter study seeks to assess the long-term success rate of implants that replaced single missing tooth.
Materials and methods: The success was determined as: absence of persistent subjective complaint such as pain, foreign body sensation, and/or dysethesia, absence of recurrent peri-implant infection with suppuration, absence of mobility, and absence of continuous radiolucencery around the implant. Patients who were included in this study were recruited from three different centers (Two private clinics and one governmental) with at least one year of implant functional loading. In addition, information regarding dental implants satisfaction was collected through a self-administered questionnaire during the recall appointment.
Results: A total of 85 patients (57 females and 28 males with age ranging from 20–73 years) received 141 implants. The data showed that the success rate of single-tooth implant was 94.3%. Screw loosening was the most common complications reported (12.1%). One implant had a fracture prosthetic screw of a cemented restoration. Eleven implants had an exposed metal collar, which was correlated with minimal (<2 mm) or absence of attached keratinized tissue around the implant. There was no difference between screw-retained and cemented-retained restorations.
Conclusion: The outcomes of this study indicated that safe and highly predictable results can be obtained for dental implant to be used to support single-tooth restoration.

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Ref no: EUABS065670
Healing of horizontal marginal bone defects modified by piezoelectric surgery in immediately placed implants
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Aim: Implants placed immediately after tooth extraction show several advantages reducing treatment time. A gap between implant platform and alveolar bone is frequently associated with immediate implant placement requiring bone regeneration techniques in defects horizontally larger than 2 mm. The aim of the study was to evaluate the clinical healing of horizontal marginal bone defects modified by bone piezoelectric surgery in implants placed in fresh extraction sockets.
Materials and methods: Fifteen implants were placed in fresh extraction sockets of 12 patients in the upper premolar area. 38.5% of experimental sites showed a marginal bone gap larger than 2 mm on palatal side. In order to reduce these marginal bone defects, two vertical osteotomies were performed by piezoelectric surgery allowing the displacement of marginal bone wall. Peri-implant tissue healing was evaluated recording clinical parameters and standardized radiographs at implant placement and after 4, 6 and 18 months.
Results: The clinical and radiographic success rate of immediately placed implants was 92.3%. Experimental sites modified by piezoelectric surgery showed at 18 months a stable clinical healing of peri-implant tissues.
Conclusion: Peri-implant marginal bone gaps larger than 2 mm and modified by bone piezoelectric surgery seem to be associated with a high degree of osseointegration suggesting that is possible to manage the horizontal bone defects around immediately placed implants without any regenerative procedure.

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Ref no: EUABS065698
A lateral approach for sinus elevation using PRGF technology
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Clinica Dental Anitua

Problem: A lateral approach for sinus elevation using plasma rich in growth factors (PRGF) technology is described. The long-term survival of dental implants installed following a two-stage procedure after sinus elevation using this procedure is reported, using implant loss as outcome variable.
Method of study: A retrospective cohort study design was used. Eighteen patients received 43 implants (BTI implants, Biotechnology Institute, Vitoria, Spain) with sinus floor elevation. All patients presented a residual bone height of class D (1–3 mm). Implants were installed using a low-speed drilling procedure (50 rpm) without irrigation. Finally, the histological and histomorphometric evaluation of eight samples from PRGF grafted sinus involved in the study was carried out 5–6 months post-treatment.
Results: The overall survival rate of dental implants was 100%. The mean follow-up period for all implants was 33 ? 7 months ranging from 24 to 44 months. In addition, the histomorphometrical evaluation of the samples evidenced a 25.24 ± 4.62% of vital newly formed bone, 50.31 ± 15.56% of soft connective tissue and the remaining 24.46 ± 12.79 of bovine anorganic bone.
Conclusions: Based on these results, this new approach for sinus elevation and implant installation using PRGF technology can be considered safe, simple, effective and predictable.

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Ref no: EUABS065718
Evaluation of the factors that may affect implant stability by resonance frequency analysis (RFA)
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Aim: The purpose of this study was to evaluate the impact of length, diameter and implant body surface area (IBSA) on the primary and final stability of implants placed in both jaws during healing by using resonance frequency analysis (RFA) device.
Materials and methods: One hundred and thirty Tapered screw vent (TSV) (Zimmer® Carlsbad, CA) implants with different diameter and length have been placed to 68 patients with a mean age of 49 ± 9.1. The ISQ was recorded with Osstell® mentor device (Integration Diagnostics AB, Sweden) at implant placement after 6, 8 and 10 weeks.
Results: Both the initial and the final implant stability was increased with the increase of the diameter of the implants ($P < 0.01$). Only exception was between 3.7 and 4.1 mm implants. The length of implants did not affect the ISQ at any time points. The effect of 10 different implant body surface areas (119,143,150,152,176,188,195,199,226,259 mm^2) was evaluated. For the initial implant stability only significant difference was found between 188 and 195 mm^2 ($P < 0.01$). Statistically significant difference was found between 143 and 259 mm^2 for the final implant stability ($P < 0.01$).

Conclusion: According to the results of this study it can be concluded that when the diameter of the implant increases the primer and the final stability of the implant which was measured with Osstell® increases. The length and the implant body surface area did not affect the stability of the implants.

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Ref no: EUABS065721

Correlations between peri-implant health and myeloperoxidase levels in implant-tooth supported fixed partial dentures

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Aim: The purpose of present study was to evaluate correlations between peri-implant health and MPO enzyme levels around implants and teeth supporting fixed partial dentures (FPD).
Materials and methods: Thirty patients who received FPDs for treatment of uni-bilateral posterior edentulism were included in study. In all the FPDs, anterior terminal premolar abutment tooth was rigidly connected to a terminal 4.1×10 mm implant that was placed one occlusal unit distally leaving a pontic space. Probing depths (PD), sulcus bleeding index (SBI), plaque index (PI) scores were recorded and GCF and PICF were subjected to biochemical analyses to assess MPO levels using Periotron 8000 at baseline and 6 month.
Results: The difference between baseline and 6th month values of clinical parameters of implants and teeth were statistically not significant. MPO levels has been evaluated after both implant and tooth sites were categorized on the basis of SBI and PD into two different groups: Healthy implant and tooth sites were defined as having probing depth ≤3 mm and SBI of zero, Diseased sites were defined as having probing depths of ≥4 mm and/or SBI ≥ 1. The diseased groups have significantly higher MPO concentration ($P < 0.01$) both in PICF and GCF at both baseline and 6th month. Diseased teeth sites had higher MPO concentration ($P < 0.05$) than the implants at 6th months.
Conclusion: MPO analysis may be useful for evaluation of health of implants adjunct to clinical parameters especially with bleeding.

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Ref no: EUABS065724

Evaluation of long-term clinical success and patient satisfaction of two different implant designs

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Aim: The purpose of this study is to evaluate long-term performance of two different implant designs by Zimmer® system in different type of prosthesis.
Materials and methods: A total of 740 implants in 249 patients have been evaluated up to 5 years.
Results: A total of 519 of implants were Swissplus® whereas 221 were Tapered screw-vent® (TSV). These two implant designs have different polished surface, thread number, depth, implant abutment connection and surgical procedure but same implant surface. Premolar-molar regions were most preferred localizations. A total of 102 implants were placed after sinus augmentation and 26 with a modified osteotomy technique. Seven implants were lost in five patients in 5 years with 99.05% of survival rate (4 Swissplus and 3 TSV). All failed implants were on maxillary region. Three were on anterior and other four were on posterior region, which were placed in augmented bone. One implant was lost before loading. Eighty of total patients have been evaluated for satisfaction of outcomes of treatment, (30 single tooth, 14 ball attachment, 36 fixed partial prostheses). All patients were satisfied esthetically. As function the ones who were treated with ball attachments were more satisfied which might be due to previous lost of chewing function.
Conclusion: It can be concluded that no difference was observed between these tow different implant designs and prosthetic restoration patients with these two implant designs can be described as reliable and efficient therapy in the long term.

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Ref no: EUABS065725

Evaluation of the mandibular canal at mental foramen region with cone beam computed tomography

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Background: Complications after implant surgery or bone harvesting at mandibular interforaminal region has increased presurgical planning requirements.
Aims: Evaluation of mandibular loop length (MLL) and assessment of length, diameter and variations of the mandibular incisive canal (MIC). To ascertain safe mesial distance from mental foramen for surgical intervention.
Materials and methods: Sixty patients underwent Cone Beam Computed Tomography were selected. Viewing simultaneously at axial, panoramic and coronal views, the mental foramen, mandibular canal, anterior loop and MIC were identified, evaluated, and marked. A 3-D transparent view of mandible was produced using interactive desktop software (SimPlant). Linear measurements were recorded.
Results: Measured data were expressed as minimum, maximum, median and mean ± standard deviation. MLL was 0.00, 6.80, 2.45 and 2.58 ± 1.36 mm and visible MIC length was 4.94, 24.99, 11.09 and 11.16 ± 3.30 mm. Mean length of large incisive canal was 4.22 ± 1.73 mm and mean diameter was 3.15 ± 1.06 mm at origin, 2.67 ± 0.54 mm at 2 mm, 2.48 ± 0.38 mm at 4 mm and 2.46 ± 0.38 at 6 mm mesially.
Conclusions: This study reveals large variation in MLL, diameter and length of MIC than previously derived from panoramic radiographs. Current guidelines of 4 mm mesial to mental foramen may not be safe. Careful assessment and planning using computed tomography should be done prior to surgical intervention in interforaminal region to avoid complications.

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Ref no: EUABS065619

Soft tissue expansion with self-filling osmotic tissue expanders prior to vertical bone augmentation – a case series

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Reconstruction of insufficient bone ridge is a prerequisite for successful treatment in many implant cases. Lateral augmentation has become clinical routine, whereas vertical augmentation is still less predictable. Wound dehiscence exposing the bone graft may occur and soft tissue deficiency may lead to either partial or complete loss of the graft. In plastic surgery, soft tissue deficiency can be overcome by tissue expansion, increasing both tissue amount and quality. In a case series, we used tissue expanders prior to vertical bone augmentation.
Methods: Self-filling osmotic tissue expanders (Osmed, GER) were inserted in eight patients who required vertical bone augmentation

(1–5 expanders/patient). Vertical augmentation (onlay grafts; two patients: posterior ilium, six patients: ramus mandibulae) was carried out after 2 months of soft tissue expansion. Biopsies of expanded tissue were analyzed by histology. Implants (Straumann, CH) were placed 4–6 months after bone augmentation. Biopsies of newly formed bone were analyzed by μ-CT.
Results: At bone mesially augmentation, primary wound closure was easily achieved without additional tissue mobilization following tissue expansion. Expanded tissues resemble a fibre-rich connective tissue without inflammatory cells. μ-CTs of bone biopsies revealed bone volume/tissue volume (BV/TV) ratio similar to that of controls.
Conclusions: Tissue expansion facilitates primary wound closure and results in a predictable outcome for vertical bone augmentation.

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Ref no: EUABS065630
Clinical outcomes of bone augmentation with allograft to enable dental implant placement: a systematic review
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Aims: The objectives of this systematic review were to assess the success rate of grafts and implants placed in sites augmented with allograft by the means of different procedures (socket preservation, alveolar ridge augmentation, sinus elevation).
Materials and methods: An electronic search was provided to identify studies on bone allograft, with a mean follow-up time of at least 6 months after functional loading.
Results: The search provided 227 titles. Full-text analysis was performed for 60 articles resulting in 14 studies that met the inclusion criteria, reporting on 268 implants. The implant survival at the augmented sites irrespective of the procedures used varied from 89 to 100%, while the success rate of the grafts varied from 68.18 to 100% for a period between 6 and 72 months.
Conclusion: For the concept of bone augmentation with allograft to enable dental implant placement, there are clinical data supporting its potential use. Given the confined number of investigators using these techniques and the low number of patient treatments reported in the literature, the generalizability of this approach is limited at this time.

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Ref no: EUABS065635
Histological evaluation of allograft for bone augmentation: a systematic review
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Aim: To systematically assess the literature regarding the histological and histomorphometric analysis of allograft for different bone augmentation techniques in human (alveolar ridge augmentation, socket preservation, sinus elevation).
Materials and methods: An electronic search was performed to identify study on humans regarding histological and histomorphometric analysis of allograft, irrespective of the procedure used.
Results: The search provided 227 titles. The review produced 11 papers that showed a positive effect in favour of new bone formation (range: 28–48%) and presence of residual graft particles (range: 7.29–52.4%) at a mean time of 6 months. Contact between residual graft particles and new bone was observed and no inflammation was present in bone core biopsies analysis in 10 out of 11 studies.
Conclusion: Different levels and quantity of evidence were noted to be available for allograft, revealing that this material is biocompatible and osteoconductive and it may be used safely without interfering with the normal reparative bone process.

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Ref no: EUABS065636
Success rate of dental implants inserted in horizontal and vertical guided bone regenerated areas: a systematic review
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Aims: To assess the success rate of implants placed in horizontal and vertical guided bone regenerated areas.
Material and methods: A systematic review of all prospective and retrospective studies, involving at least five consecutively treated patients, that analyzed the success rate of implants placed simultaneously or as a second surgery following ridge augmentation by means of GBR technique, compared with implants placed in pristine bone, was performed. Studies reporting only the survival rate of implants and studies with a post-loading follow up lower than six months were excluded.
Results: From 287 potentially relevant studies, 25 full-text publications were screened and nine were identified as fulfilling the inclusion criteria. The success rate of implants placed in GBR augmented ridges ranged from 61.5–100%, with all the studies but two, reporting a success rate higher than 90% (range 90–100%).
Conclusion: Even though the current review revealed that there are not many studies providing data on the success rate of dental implants placed in GBR augmented ridges, the obtained data demonstrated that the success rate of implants placed in regenerated areas are very similar to those obtained in case of implants placed in pristine bone, and suggested that GBR is a predictable technique to allow the placement of implants in atrophic areas. Despite that, randomized controlled studies are required and data from this review must be considered indicative.

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Ref no: EUABS065616
Experimental in vitro study for the implementation of air polishing during treatment of implanted surfaces in patients with mucositis/periimplantitis
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Removal of bacterial deposits from such surfaces can lead to greater difficulties. All instrumentation and plaque removal procedures can bring about alterations to the morpho-topographical surface.
Aim: The aim of this research is to evaluate certain in vitro effects on different rough surfaces and with different air polishing treatments with different glycine powders (particle size 63 and 120 nm) glycine powder 120 nm on FCC and SLA; 63 nm glycine powder on FCC and SLA for PST for implant surfaces. In context, the root surfaces of four newly-extracted teeth have been treated with AP and Perio glycine powder alone, observing exposure criteria of the surfaces B and D. For the study we used a new air polishing device made by EMS SA – Nyon with the highest setup.

Result: In the assessment of the various treatment timings (5''; 10''; 20''), we have gone on to perform a micromorphological and structural analysis by means of an electronic scanning microscope. Perio powder, together with shorter time exposures, 5 sec, has shown to be the least aggressive and abrasive on implanted and root surfaces of treatment conditions. Soft and Perio powders, used within a time-scale >5 sec, have shown to be however particularly aggressive and abrasive for all surfaces which are the object of the study.
Conclusion: Perio powder, together with shorter time exposures, 5 sec per each surface, has shown to be the least aggressive and abrasive on implanted and root surfaces of treatment conditions.

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Ref no: EUABS065789

Translation of research evidence from animals to humans in peri-implantitis studies

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Background: Conducting animal research is to understand the causes and treatments of human diseases. However, clinical human studies may not be able to replicate the results of animal experiments. Aim: to evaluate whether or not periimplantitis therapies conducted in animals experiments were successfully repeated by human trials.
Materials and methods: Dental journals with high citation impact factor were searched for animal trials on peri-implantitis treatment (1992–2008). It was assumed that findings from these journals would be more likely to be tested in subsequent human trials. A second literature search was conducted in Pubmed, CENTRAL and Lilacs databases to identify randomized controlled trials and case-series carried out in humans. Because of the heterogeneity between studies, only descriptive analysis was undertaken.
Results: Out of 1199 studies retrieved, 51 (23 animal and 30 human studies) were selected. Due to the great heterogeneity (e.g. study design, outcome measures) between animal and human studies, the success of replication cannot be quantitatively determined. However, when similar outcome variables (e.g. pocket probing depth) were individually compared, implant scaling/air-polishing, chlorhexidine, antibiotics and guided bone regeneration had positive results in both animal experiments and human trials.
Discussion and conclusion: The results of animal studies on peri-implantitis should be interpreted with caution, because of the large variation of study designs.

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Treatment of periimplantitis defects with a spray of sodium bicarbonate and chlorhexidine: an experimental study in the dog: preliminary results

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Aim: The aim of this study was to examine the effect of an abrasive spray of sodium bicarbonate and chlorhexidine in the treatment of experimentally periimplantitis lesions.
Materials and methods: Two months after extraction of mandibular premolars, three dental implants were placed in each side of the mandible of six beagle dogs. Three months later periimplantitis was induced. Five months later, subgingival microbiological samples and radiographs were taken, full-thickness flaps were elevated, and all granulation tissue in the bone defects was debrided. One side (test) of the mandible in each dog received an abrasive spray of an especially formulated combination of sodium bicarbonate and chlorhexidine, whereas the contralateral (control) side received the same treatment, without the chlorhexidine. Three months later, microbiological samples and radiographs were taken, the dogs were sacrificed and biopsy specimens were obtained for further histological analysis.
Results: Radiographic comparisons before/after treatment of periimplantitis lesions showed moderated improvements in bone-implant contact in 75% of sites (mesial/distal) in the chlorhexidine treated implants versus 52% in the non-chlorhexidine treated implants. Microbiological and histological results are under way.
Conclusions: The present study shows that the use of an especially formulated abrasive spray of sodium bicarbonate and chlorhexidine can be of clinical value in the treatment of periimplantitis.

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Association of peri-implant crevicular fluid dynamics with peri-implant tissue health

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There are insufficient data about the profile of peri-implant crevicular fluid (PICF) dynamics in peri-implant health and disease. The objectives of this study were to investigate the relationship between PICF dynamics and clinical criteria of peri-implant health, and to compare it with the same relationship between gingival crevicular fluid (GCF) dynamics and periodontal health. Twenty-one implants and 21 teeth in seven patients who had at least one implant and one tooth were included in the study. This allowed to obtain the implant and tooth data from the same mouth in each patient. Osmotic pressures (OP) and volumes (FV) of PICF and GCF were utilized as the parameters of fluid dynamics. Silness-Löe plaque index (PI), Löe-Silness gingival index (GI), bleeding on probing (BOP), pocket depth (PD) clinical attachment (AL) and alveolar bone (AB) levels were used to reveal the peri-implant/periodontal health clinically. PICF and GCF were collected by periopapers from the same sites with the clinical measurements. OP was measured by an osmometer whereas FV was measured by a Periotron device. There were positive correlations between PICF-OP and PI, GI, BOP, PD, AL, AB and between PICF-FV and PI, GI, BOP, PD, AL, AB in the implant group ($P < 0.05$). These correlations were also evident between GCF-OP/GCF-FV and the clinical prameters of the tooth group ($P < 0.05$). The results suggest that PICF dynamics may reflect the peri-implant tissue health likewise for GCF dynamics in natural dentition.

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Hard and soft tissue stability around implants with platform-switch interface

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Platform-switch claims to contribute to stable bone level after functional loading, but there is no data on soft tissue stability around this interface. This prospective study reports on 1-year clinical outcome of immediately loaded Ospol dental implants based on clinical survival, soft tissue status and radiographic assessment of bone level. Total of 56 Ospol implants (diameter

4.0 mm, lengths 10, 12, 15 mm) were inserted in 27 consecutively treated patients (age range 30–66 years) with confirmed history of periodontitis; none were smokers. Implants and abutments were inserted in one-stage procedure, but were not functionally loaded. Attached mucosa width was measured after suture removal (10 days postoperatively). All implants were checked for stability at fixed partial denture (FPD; single crown or two-unit bridges) cementation three months after insertion by means of ISQ (Osstell Mentor). Bone level and attached mucosa width were assessed at 3, 6 and 12 months after implant insertion. No failures occurred in implants or FPDs (total survival rate – 100%). Mean marginal bone loss was 0.4 mm (SD 0.51) at 3 months, 0.42 mm (SD 0.52) at 6 months and 0.43 mm (SD 0.52). Only nine implants showed bone loss in first 3 months. There were no changes in attached mucosa width during observation time. It seems that platform-switch ensures and enhances both hard and soft tissue stability over a short-term period. RCMESS Grant No. 065-06504450-0440.

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Sinus floor augmentation using platelet rich plasma and bovine derived xenograft

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The purpose of this study is to evaluate findings of computerized tomography (CT) and histologic bone formation after bilateral sinus augmentation with two different regenerative combinations. Ten patients with less than 5 mm residual bone in posterior maxilla underwent a total of 20 sinus augmentations. The antrum filled with bovine derived xenograft (BDX) and platelet rich plasma (PRP) on one side and BDX and collagen membrane (CM) on the other. Before surgery and 8 months post-surgery ridge heights were visualized by CT. Bone biopsies were taken from planned implant sites. The bone density quantified and compared with native bone density using a software. PRP side increased from 3.14 ± 0.75 mm to 12.52 ± 2.66 mm and BDX + CM side increased from 3.02 ± 1.06 mm to 12.60 ± 2.02 mm after treatment. At 8 months, result of histologic analysis showed that PRP + BDX side was surrounded by newly formed bone while contralateral side presented a few graft particles which were not connected to the host bone. Although histological and radiographical examination revealed no statistical differences between PRP + BDX and BDX + CM sides, the bone density of both sides showed similar or exceeded the bone density of the surrounding bone. Since PRP + BDX combination sites showed higher percentage of bone formation at 8 months, both combinations are suitable in sinus augmentation procedures and accomodate osteointegrated implants.

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The influence of esthetic abutments on soft tissue stability in partially edentulous sites – clinical study

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The purpose of this pilot study was to evaluate the stability of soft tissue following posterior placement of NobelReplace Tapered Groovy implants connected with Curvy esthetic abutments or Esthetic abutments. Ten patients participated in this study. Each patient received two NobelReplace Tapered Groovy implants placed in contra lateral jaw quadrants in the region premolar to first molar (20 implants). Following implant placement, random block assignment was performed to decide whether a Curvy esthetic abutment or an Esthetic abutment was to be used. Most of the single restorations were performed in the mandible (16), only 4 in the maxilla. All restorations were subjected to immediate function. The implant stability was detected after the implant placement and 6 months after by manual testing while the modified bleeding index and papilla index (Jemt) were used to verify condition of peri-implant mucosa and the size of gingival papilla. All implants were stable and in function as judged by manual testing, thus rendering a cumulative survival rate of 100%. Around Curvy esthetic abutments the Jemt's papilla index score increased in 50% of the cases from the 1-month to 6-months follow-up visit. In contrast, only 20% of the papillae surrounding esthetic abutments increased their papilla index score during the same time period. The results of our study suggest that using of Curvy esthetic abutments in prosthetic therapy has a positive influence on soft tissue stability.

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Ref no: EUABS065460

The influence of esthetic abutments on soft tissue stability in partially edentulous sites – radiological study

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The purpose of this pilot study was to evaluate the bone level following posterior placement of NobelReplace Tapered Groovy implants connected with Curvy esthetic abutments (CEA) or Esthetic abutments (EA). Ten patients participated in this study. Each patient received two implants placed in contralateral jaw quadrants in posterior region (20 implants). Following implant placement, a CEA or an EA was to be used randomly. All restorations were subjected to immediate function. The marginal bone level as well marginal bone remodeling were calculated and compared between groups 6 months after the implant placement. The marginal bone level at implant placement was -1.69 ± 0.82 mm and -1.57 ± 0.77 mm below the implant abutment interface for implants restored with CEA and EA respectively. Six months following implant placement the mean marginal bone level was -2.15 ± 0.66 mm and -2.22 ± 0.72 mm for implants restored with Curvy esthetic abutments and Esthetic abutments respectively. For implants restored with CEA the mean marginal bone remodeling between implant insertion and 6-months follow up was -0.55 ± 0.81 mm. For implants restored with EA the mean marginal bone remodeling between implant insertion and 6-months follow up was -0.78 ± 0.55 mm. There was no statistical difference in bone remodeling between the two groups, $P > 0.30$. The results of our study suggest that the both type of abutments have similar influence on hard tissue changes during the 6 months period.

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Ref no: EUABS065471

Tissue reactions around immediately loaded implants supporting fixed partial dentures: a prospective, randomized clinical study

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The aim of this study was to evaluate (1) success of immediately loaded implants supporting fixed partial dentures; (2) periimplant conditions around different types of abutments.

Material and methods: In this 5-year prospective study, 50 partially edentulous patients each received three implants. Two different types (smooth or rough surface) of abutments were used. The third implant was attached directly at implant level. After randomization, the implants were loaded either immediately (test) or after a 3-month healing period (control). Most patients received treatment in the posterior maxilla.
Results: All patients were eligible for examination after one year. Two implants were lost in two patients in the control group while four implants were lost in three patients in the test group. Some implants in the test group showed lowered stability after 2–4 weeks and was therefore unloaded. Thereafter, the implant stability improved allowing loading within 3–4 months. All other implants remained stable throughout the first year. Also, changes in marginal bone height and soft tissue conditions at implants will also be presented together with self evaluation of patient experience.
Conclusions: This study showed acceptable success rates after one year follow-up for immediately loaded implants supporting fixed partial dentures. However, this treatment modality mandates considerable operator experience and careful supervision of the patients.

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Ref no: EUABS065417

Sinus-lift by the use of tri-calcium phosphate (Calmatrix/Calforma): a prospective clinical and histological study

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A novel tri-calcium phosphate bone substitute materials (Calmatrix) was evaluated in a prospective clinical study. Twenty-five patients were included in the study. Surgical entrances to the maxillary sinuses were performed according to standard protocol. An amount of 0.5–1 g Calmatrix was mixed with in a ratio of 80:20 with the autogenous bone chips. A tri-calcium phosphate barrier (Calforma) was placed covering the entrance to the sinus. Healing was allowed for 6 months prior to implant placement. At the time of fixture installation, a total of 25 mini implants (2×5 mm) were placed. A total of 91 implants were installed in the grafted sites. Healing was allowed for 4 months prior to abutment connection where the micro implants were harvested and subjected for histomorphometric analyis. RFA analyses were carried out at implant placement and abutment connection. CT was performed before and after bone augmentation.
Results: Implant survival rate was 96.8%. Fifteen mini implants were subjected to histomorphometric analysis. The tricalcium phosphate particles were virtually completely resorbed. No particles were seen in contact with the implant surfaces only in the periphery of the specimens. The mean bone/impl contact in the grafted area was 28.8%. RFA analysis demonstrated a mean ISQ value of 66.5 at installation and 65.8 after 4 month of healing.
Conclusion: We conclude that CalMatrix/CalForma seems to be well suited synthetic graft materials for sinus-lift procedures and delayed implant placement.

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Ref no: EUABS065395

Fixed partial denture supported by 4-mm implants in the severely resorbed posterior mandible: 2-year results

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Objective: To evaluate a new, 4-mm long Straumann SLActive implant (Ø 4.1 mm) supporting fixed partial dentures (FPDs) in severely resorbed posterior mandibles.
Material and methods: Thirty-two patients (11 men, 21 women; mean age 64.1 years) participated in this multicenter study. Ten to twelve weeks after single-stage surgery, a screw retained FPD was attached to three or four implants. Patient satisfaction, clinical and radiographic parameters will be followed-up for 5 years.
Results: Hundred short implants were inserted. Two failed at surgery due to lack of primary stability, and four were lost before loading. One patient insisted on removal of all implants and one patient died due to general health complications. Twenty-four patients (77 implants) were eligible for examination 2 years post-loading. All implants were found to be stable [survival rate 95.2% (C.I. 87.8–98.2)]. Low average plaque and mucositis scores were found. Average probing pocket depths were 2.2.(0.8) mm). Mean marginal bone loss was at level with the 1-year values [0.40 (0.47) mm]. Patient satisfaction varied between good and excellent.
Conclusion: This study shows that 4 mm implants can support a FPD in severely resorbed posterior mandibles for at least 2 years and with healthy peri-implant conditions.

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Ref no: EUABS065487

Panoramic radiographs underestimate available mesio-distal bone width in maxillary premolar regions

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Objective: Although cross-sectional imaging has been recommended, panoramic radiographs are commonly used for diagnostic purposes of implant planning. This study compared the clinical validity of 2-D versus 3-D imaging modalities: panoramic radiography (PAN: Cranex Tome®, Soredex) and multi-slice/cone-beam computed tomography (*ms*CT: Somatom plus S®, Siemens; *cb*CT: Accuitomo®, Morita) in evaluating the available space (mesio-distal bone width) for implant placement in the lateral maxillary region.
Material and methods: In 65 partially edentulous (maxilla) patients (52% male, 48% female, mean age 57 years, range: 42–79) the available space between the distal side of the canine/1st premolar and the anterior maxillary sinuswall, or the available space between the canine/1st premolar and the first molar were scored on both PAN and *ms*CT/*cb*CT images. Measurements were made apically, mid-radicular and crestally from the canine/1st premolar parallel with the occlusal plane.
Results: In all cases the available space for eventual implant placement, was larger at *ms*CT/*cb*CT images then on PAN images. A PAN systematically underscored the available distance for ≥30% ($P < 0.001$) when compared to *ms*CT/*cb*CT images.
Conclusions: Within the limitations of this study it can be concluded that panoramic radiographs are unreliable when assessing the available mesio-distal bone width for implant placement in the premolar area of the maxilla, and might as such overestimate the need for sinus augmentation.

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Ref no: EUABS065491

A systematic review of implant supported fixed dental prostheses with cantilever extensions after an observation period of at least 5 years

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Objective: To assess the survival rate of implant-supported cantilever prostheses (ICFDPs) and the incidence of complications after at least 5 years.
Material and methods: A MEDLINE search was conducted. Five- and 10-year estimates for failure and complication rates were calculated using standard or random-effect Poisson regression analysis.
Results: Five studies eligible for meta-analysis yielded an estimated 5- and 10-year ICFDP cumulative survival rate of 94.3% (95% CI: 84.1–98.0%) and 88.9% (95% CI: 70.8–96.1%), respectively. Five-year estimates for peri-implantitis were 5.4 and 9.4% at implant and prosthesis levels, respectively. Veneer fracture (5-year estimate: 10.3%) and screw loosening (5-year estimate: 8.2%) were the most common technical complications, followed by loss of retention (5-year estimate: 5.7%) and abutment/screw fracture (5-year estimate: 2.1%). Implant fracture was rare (5-year estimate: 1.3%). Radiographic bone level changes did not yield statistically significant differences neither at the prosthesis nor at the implant levels comparing ICFDPs with implant-supported end-abutment prostheses.
Conclusions: ICFDPs represent an alternative to implant-supported end-abutment FDPs; no detrimental effects have to be expected on bone levels due to the presence of a cantilever extension per se. Supported by the Clinical Research Foundation (CRF) for the Promotion of Oral Health, Brienz, Switzerland, and by the ITI Foundation, Basel, Switzerland.

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Full edentulous treatment with plural extractions and immediate implant loading (PEIIL technique)

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Immediate loading is an evidence based procedure with several years of backward. Results are equivalent or better than conventionnal protocol involving a two stages procedure In the meanwhile studies show benefit from immediate implant placement following the extraction. Combining both techniques provides less bone resorption and shorten treatements. We developed a single stage procedure to treat full edentulous patient asking for fixed prostesis supported by implants when needing plural extractions due to compromise parodontal or dental situation.
Purpose: A strict protocol was followed focusing on: Implant placement with a precise knowledge and analysis of anatomic risks involving CT-Scans and 3D Planning softwares, pre operative steps, essential to guarantee an accurate fit and esthetic of the provisional fixed prostesis which is placed on the same day than surgery, technique for implant placement in the fresh extraction socket, post operative impression and precise transfer to the dental technician.
Material and methods: This report is based on 565 implants placed in 108 patients treated with PEIIL technique in two French clinics.
Results: It was demonstrated that PEIIL technique has a high success rate with 99.65% for implants and 100%.
Conclusion: The PEIIL is a precise and successfully protocol to treat edentulous patients that need several extractions in compromise parodontal or dental pre-operative situation.

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Ref no: EUABS065185

Restoration after sinus lift using boneceramic or bio-oss: histological observations in a split-mouth study without autologous bone graft

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The goal of this clinical investigation was to evaluate implant-based restoration in the posterior maxilla previously augmented with a synthetic biphasic calcium phosphate on one side and an anorganic bovine bone mineral on the other side. Four patients with inadequate alveolar bone height in the posterior maxilla were enrolled. Bilateral sinus lift was performed exclusively using a synthetic biphasic calcium phosphate (BCP, Straumann® BoneCeramic) on one side and an anorganic bovine bone substitute (ABM, Bio-Oss®) on the other side. After 8–16 months, dental implants were placed and loaded between 3 and 7 months thereafter. Cores retrieved during implant bed preparation were histologically evaluated. All patients healed uneventfully. Histological evaluation showed similar new bone formation for BCP and ABM. Good primary stability was achieved for all dental implants except for one placed at a site augmented with BCP. All dental implants, including the one with limited primary stability were loaded as scheduled and no loss of dental implant was observed up to now. Within the limits of this investigation, it was observed that the exclusive use of BCP showed similar new bone formation to ABM and that successful implant based restoration was achieved. It could also be observed that the primary stability of dental implants placed at augmented sites was not necessarily correlated to the amount of newly formed bone.

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Ref no: EUABS065079

New implant therapy concept with a periointegrative surface of sputtered zircon

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Introduction: Dental implant therapy is a well researched and documentated method. But there are no studies concerning the periointegration over the years. This ongoing study introduces the first one year data of clinical aspects with a new patented surface of sputtered circon on titan-abutments.
Method: Fifty-five patients (average age 53) with 129 implants and the new type of sputtered abutments are researched in clinical and X-ray parameters over a time of one year. BOP, PD, gingival margin and bone margin are measured.
Results: The new surface with sputtered circon titan abutments shows a very high grade of periointegration at this time of 12 month. Minimal bone loss with a maximum of 0.2 mm (average 0.0 mm) was documented on X-rays. The clinical data showed a perfect margin and at very early states no BOP, PD.
Summary: The new surface with sputtered circon on abutments in implant therapy seems to be a innovative perspective in periointegration. More data in the next years of this ongoing study have to show this positive effects.

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Ref no: EUABS065156
Bone repair cells (BRCS) for acceleration of tooth extraction socket bone repair in humans
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Bone Repair Cells (BRCs) are a mixture of autologous bone marrow-derived stem and progenitor cells in numbers not obtainable through a normal bone marrow harvest. In this controlled randomized proof-of-concept clinical trial, safety and regenerative potential of BRCs in extraction sockets prior to implant placement are examined. Bone marrow mononuclear cells are inoculated into a cassette where osteogenic cell populations and other cell types are expanded in an automated closed system. The final product (or saline in the control group) is adsorbed onto a gelatin sponge, implanted into the defects covered by a collagen barrier. At 6 or 12 w fixtures will be installed, which will be followed for 1 year after loading. Micro-computed tomography (μCT), histomorphometrical analyses, open bone measures and digital radiography of the harvested bone cores and defect areas will be evaluated to determine quality and extent of osteogenesis. A panel of safety parameters is being collected. The recruitment of 24 anticipated subjects is estimated to run to completion by February 2009. To date, 20 healthy patients have been enrolled and bone biopsies have revealed clinical evidence of regenerated bone with evidence of mineralization (μCT). This technology offers significant potential for the reconstruction of alveolar bone defects prior to dental implant installation. Study supported by NIH/NCRR UL1RR024986 and Burroughs Welcome Fund. NIH clinical trials database: NCT00755911

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Ref no: EUABS065152
Influence of bony defects on implant stability
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Objective: This study analyzed the evolution of implant stability, using both Periotest® and Osstell® devices, while different types/sizes of bony defects were created artificially.
Materials and methods: Thirty-two implants (Nobel Biocare® MKIII) were randomly allocated to one of four types of bony defects (marginal bone loss, periapical bony defect, dehiscency with a constant width, and dehiscency with constant length). Periotest/Osstell values were measured before and after staged bone removal (to enlarge defect size).
Results: Significant differences ($P < 0.05$) with initial values were found for marginal bone removal after 2 mm (Osstell/Periotest); for a peri-apical bone lesion after removal of 4 mm (Osstell) or 8 mm (Periotest); for a 6-mm long dehiscence after removal of up to 180° around the implant diameter (Osstell/Periotest); for constant 3 mm wide dehiscences after removal of 10 mm (Osstell) or 6 mm (Periotest).
Conclusions: Except for marginal bone loss cases, both Periotest and Osstell are not very sensitive for the identification of peri-implant bone destruction.

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Ref no: EUABS065188
Translocated bone particles: a key to success?
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Objectives: Recently it was shown that during implant installation small bone particles are synchronically translocated onto the implant surface. These particles have osteogenic potential, and thus might contribute to peri-implant bone healing. Has the applied surgical technique, besides an effect on primary stability, also an effect on the amount and osteogenic response of these bone particles?
Material and methods: Implants (Biocomp, Vught, The Netherlands) were inserted in cadaver bone using a pressfit or undersized technique. Peak insertion torque values (ITV) were measured; also histomorphometrical analysis of bone implant contact (BIC) and bone volume (BV) were performed. After explantation, the implants were incubated in culture medium containing β-glycerophosphate and dexamethasone for four time-points. Scanning electron microscopy (SEM), DNA analysis, alkaline phosphatase activity (ALP), and calcium measurements were performed to assess the osteogenic response.
Results: ITV and BIC were significantly higher for the implants placed with an undersized technique. SEM confirmed the presence of more bone-like tissue in this group. Similar amounts of DNA and ALP activity were observed; however significantly higher amounts of calcium were measured on the implants inserted with an undersized technique.
Conclusion: The undersized surgical technique shows higher primary stability along with more translocated bone particles having a positive influence on the osteogenic response.

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Ref no: EUABS065233
The effect of smoking on bone level changes around southern implants
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Smoking habits negatively influence the outcome of machined titanium surface implants. However, information on the effect of smoking on rougher surfaces is inconclusive. 525 radiographs were available from a total of 712 installed implants. Implants were placed by two periodontists during a 5-year period and have an enhanced abraded surface of rutile titanium obtained through sand-blasting (Southern Implants®, Irene, South Africa). Radiographs were analyzed by one independent examiner for bone level measured from abutment-fixture interface. After a mean follow-up of 10 months (range 1–28), the mean interproximal bone level was 1.32 mm ($n = 525$; SD 0.43; range 0.35–3.70). Bone levels were independent of jaw location. 75 implants were placed in smokers and these lost statistically significantly ($P = 0{,}023$) more bone (mean 1.47; SD 0.58; range 0.6–3.25) than the 450 implants in the non-smoking group (mean 1.29 mm; SD 0.40; range 0.35–3.7). Specifically in the maxilla, significantly more bone loss was seen in smokers (1.60 mm versus 1.23 mm, $P = 0.003$), a difference not observed in the mandible ($P = 0.712$). Only 1/41 smokers (2.4%) experienced implant failures, compared to 7/288 non-smokers (2.4%). There was no significant difference between both groups ($P = 0.997$). This retrospective study confirms that smoking results in more peri-implant bone loss. Smoking was no risk for implant failure. Nevertheless, the ongoing bone loss may result in future biological problems.

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Ref no: EUABS065236

The relationship between bone quality of implant sites and implant stability

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Background: Bone morphology and quality are important factors for suitable implant placement and implant success.
Aim: To evaluate the correlation between hounsfield unit values (HU), histologic bone quality, resonance frequency analysis (RFA) and tactile sense.
Materials and methods: Twenty-three patients needed dental implant therapy were included in the study. Bone mineral density values of the implant sites were obtain from the tomographic sections. Bone biopsies were collected from the implant sites prior to implant placement. The numeric values of primary stability of the implants were evaluated by the wireless RFA device. The parameters as tactile sense during surgery and implant dimensions are also included into the statistical analysis.
Results: A significant correlation was found between HU values and tactile sense ($P = 0.009$). A significant relation was found between HU values and RFA data ($P = 0.015$), where HU values and histological bone percent was also significantly correlated in females ($P = 0.015$). A significant relationship was also found between RFA data and tactile sense ($P = 0.042$) in males. When we use all parameters about all patients, an important correlation was found between HU values and tactile sense ($P = 0.009$).
Conclusions: The evaluation of HU values may be useful for the success of dental implants and their loading times. Further clinical studies are needed for the credibility of RFA, one of the assessment methods of primary stability and osseointegration.

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Ref no: EUABS067034

Immediate implant loading tested with Ostell® Mentor: a pilot study

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Aim: To assess Implant Stability with resonance frequency analysis (RFA) harmonic response method (Ostell® Mentor) in implant immediate loading, versus implant medium term loading.
Material and methods: Twenty implants Klocner® Cone Essential 4×10 mm were placed in ten patients.10 implants (study group) (immediate loading) with resin crown and 10 implants (control group) medium term loading. Stability was examined (first after implant placement, second 1 month and third 10 weeks after base line). Stability was measured by Ostell® Mentor with ISQ.
Results: The results showed the following measures: Study group mean ISQ measures First 63.11, 2nd 63.33, 3rd 64.44)/ control group mean ISQ measures First 58.45 2nd 64.50 3rd 60.83). There were non statistical differences between groups $P > 0.05$.
Discussion: With the limits of this preliminary study the Ostell® Mentor could be a useful diagnostic tool to asses the implant stability in order to carry out immediate implant loading.

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Ref no: EUABS067026

Clinical results of mandibular bone blocks with or without anorganic bovine bone and collagen membranes: a prospective randomized controlled study

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Aim: The aim of the study was to evaluate if the use of inorganic bovine bone mineral (Bio Oss) and collagen barrier membranes (Bio-Gide) in combination with onlay mandibular block grafts could reduce onlay grafts resorption during healing.
Methods: A prospective randomized controlled study has been designed. Twenty patients with horizontal alveolar deficiency (crest width less than 4 mm) and at least two adjacent missing teeth has been included in the study and randomly assigned to test group or control group. In both groups mandibular blocks were used to obtain horizontal augmentation of the alveolar ridge. Only in the test group Bio Oss granules were added at the periphery of the onlay grafts and then the whole reconstruction was covered with two layers of Bio-Gide membrane. Implants placement was performed 4 months after bone grafting. Direct measurements of crest width were carried out immediately before and immediately after onlay augmentation, and immediately before implant placement.
Results: No significant differences were found among test and control groups neither before augmentation, neither after augmentation ($P > 0.05$). A slight, but statistically significant decrease in graft resorption has been observed in the test group ($P < 0.05$).
Conclusions: The use inorganic bovine bone mineral (Bio Oss) and collagen barrier membranes (Bio-Gide) could reduce the resorption of onlay grafts of mandibular origin.

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Ref no: EUABS066901

Changes in peri-implant crevicular fluid levels after *Lactobacillus Reuteri* prodentis administration

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Background: Analysis of crevicular fluid from peri-implant sulcus is useful to detect early changes showing peri-implant disease occurrence. In such cases, increased crevicular fluid levels are observed. The aim of the present study was to assess changes in peri-implant crevicular fluid levels after a probiotic (*Lactobacillus reuteri* Prodentis) administration.
Material and methods: A total of 228 dental implants were assessed in 36 patients being prescribed oral probiotics for 28 days. Pre- and post-treatment peri-implant crevicular fluid volume was measured using paper strips (Periopaper Strip®) and Periotron® 8000, a device allowing quantitative assessment of retrieved fluid in Periotron Units (PU).
Results: Before probiotics treatment, measured values ranged from 20 to 198 Periotron Units (median 97.5 PU); after treatment with *Lactobacillus reuteri* Prodentis, measured values ranged from 7 to 163 Periotron Units (median 43 PU), the reduction being statistically significant.
Conclusions: After an oral probiotic (*Lactobacillus reuteri* Prodentis) administration, a significant reduction of peri-implant crevicular fluid was observed, resulting in an improved clinical condition of dental implants.

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Ref no: EUABS066904
Early soft and hard tissue remodeling around two different dental implant systems
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The objective of this study was to evaluate soft tissue and alveolar bone healing around two implant systems with different macro and micro design and surface modifications. Eight patients were randomly assigned to receive one of the two dental implants: M.I.S. Seven (Shlomi, Israel) (Group 1) or Astra Tech Osseospeed (Mölndal, Sweden) (Group 2). Implants were placed with the submerged protocol. The second stage surgical procedure was performed 3 months later. During the first (1) and second stage surgery (2); width of the alveolar crest, buccal bone width at the margin of the implant (BBW), vertical position of the alveolar ridge in relation to the implant (VP), thickness and width of keratinized gingiva (KGW). There was no significant difference between groups at baseline clinical parameters. Parameters were re-analyzed according to the location of the implants; Group 1 demonstrated lower BBW2, VP1, VP2 values and higher KGW1 and KGW2 at the maxillary anterior region compared to the mandibular posterior region ($P < 0.05$). KGW2 differed between implant locations for Group 2. Throughout the study only KGW decreased significantly from baseline in Group 1. During the 3 months interval, alveolar bone levels around the implants were maintained or minimally decreased ($P > 0.05$). In the limits of this study, it can be concluded that different designs and surface modifications of the implants systems did not influence hard and soft tissue remodeling at the early healing period.

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Ref no: EUABS066864
Marginal bone remodelling in ''1-abutment/1-time'' versus conventional restorative implant procedure: a 3-year prospective study
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Background: It is well documented that two-piece implants undergo crestal bone loss within 1 year of loading in conjunction with the Biological Width establishment. However, several factors (microgap, rough/smooth surface level, etc…) influence peri-implant soft and hard tissue reactions. The aim of the present investigation is to evaluate whether the ''1 abutment-1 time'' procedure could reduce the marginal bone loss when compared with conventional procedure.
Methods: 23 Patients were included in a 3-year split-mouth design prospective study using 68 submerged Tapered Screw-Vent Zimmer (Carlsbad, USA) implants. They were both restored through conventional restoration (abutment removal during try-in) (group 1) and ''1-abutment, 1-time'' procedure (group 2) where the final pre-contoured abutment was permanently tightened at 30 Ncm at second stage surgery (3 months). Periapical X-rays at time 0, 3, 6, 12 months, 2 and 3 years calculated the vertical bone loss (mesial and distal) based on the implant length. The Student t test and Pearson correlation estimated the influence of separate parameters on marginal bone.
Results: The mean marginal bone loss was 1.4 mm (SD = 0.22) in group 1 versus 1.12 mm (SD = 0.11) in group 2, resulting in a statistically significant difference.
Conclusion: This study supports the hypothesis that the 1-abutment/1-time procedure can minimize the peri-implant hard and soft tissue loss by reducing the repetitive disturbance of the biological width.

399
Ref no: EUABS066865
Alveolar ridge preservation: clinical and micro-ct evaluation of treatment outcomes
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Aims: Alveolar Ridge Preservation (ARP) is a guided bone regeneration application to control bone resorption. The purpose of this study was to evaluate healing outcomes following ARP.
Methods: Sixteen patients needing ARP prior to implant placement at posterior sextant were included. Exclusion criteria were smoking, acute infection, and systemic health problems affecting the healing. ARP was performed with freeze dried bone allograft and collagen membrane. Impressions were taken at pre-extraction and at 4 months; bone cores were obtained at implant placement. Custom template was used to assess soft tissue contours during healing. Microcomputer tomography (Micro-CT) was used to study bone density in cores. Data analysis was by repeated measures ANOVA followed by t-test and by Pearson correlation.
Results: A ridge height change was negligible (a gain of 0.78 ± 1.85 mm in mandible and a loss of 0.86 ± 2.3 mm in maxilla); average ridge width loss of 2.7 ± 1.4 mm was observed ($P < 0.05$). In mandible, baseline attachment loss correlated with final ridge height ($r = 0.797$, $P = 0.01$). In maxilla, root diameter of extracted tooth was associated with final ridge width ($r = -0.782$, $P = 0.038$) and height ($r = -0.943$, $P = 0.001$). Micro-CT allowed residual biomaterial differentiation.
Conclusion: Within the limits of this study, it appears that in different anatomical locations different factors may determine the treatment outcome. Further studies are needed to understand limitations of ARP.

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Ref no: EUABS066911
Impact of *lactobacillus reuteri* prodentis on peri-implant health
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Background: A poor oral hygiene in patients with dental implants can result in peri-implant disease. The aim of the present study was to assess peri-implant health after taking an oral probiotic: *Lactobacillus reuteri* Prodentis.
Material and methods: A total of 228 dental implants in 36 patients were assessed. Patients received oral probiotic treatment for 28 days. Pre- and post-treatment bacterial plaque, probing depth, bleeding, modified gingival index, and mucositis were assessed.
Results: A significant reduction in bacterial plaque (from 0.65 ± 0.86 to 0.25 ± 0.53), probing depth (from 3.21 ± 1.33 to 2.92 ± 1.56), bleeding (from 38% to 19.7%), modified gingival index (from 0.83 ± 1.14 to 0.31 ± 0.64) and mucositis (from 16.5% to 3.5%) was observed.
Conclusions: Treatment with an oral probiotic, *Lactobacillus reuteri* Prodentis, resulted in a significant improvement in peri-implant health.

401
Ref no: EUABS066913

Is prosthetic restoration type for dental implants related to peri-implant disease?

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Background: Prosthetic restoration type used on dental implants may affect appropriate hygiene technique, and result in a peri-implant disease development. The aim of the present study was to assess the relationship between prosthetic restoration type used on dental implants and peri-implant disease development.
Material and methods: Thirty-six patients (228 implants) with complete dental arches rehabilitated with dental implants (19 with fixed prosthesis, 16 with overdenture using Locator®, and 14 with overdenture on bars) were assessed. Gingival recession, probing depth, bacterial plaque, bleeding, modified gingival index, and mucositis were assessed. A sample of crevicular fluid from each quadrant was obtained, and fluid volume was measured with Periotron® 8000.
Results: Gingival recession, probing depth, bleeding, and modified gingival index were higher with fixed prosthesis. Higher levels of plaque index, mucositis and crevicular fluid volume were observed with overdenture on bars.
Conclusions: Prosthetic restoration type has an impact on peri-implant health condition.

402
Ref no: EUABS066981

How effective are alveolar socket preservation techniques? a systematic review

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Aims: Due to the increasingly frequent use of dental implants to replace hopeless teeth, preservation of the buccal and lingual plates in fresh post-extraction sockets became an essential issue in order to optimize the success of implant placement. The objectives of this systematic review were to assess the effectiveness of alveolar socket preservation techniques and to analyse and compare clinical, histologic and histomorphometric results in the extraction-alone sites to those in treated sites.
Materials and methods: An electronic search was provided to identify randomized controlled clinical trial in which alveolar socket preservation techniques were proposed or tested, and bone biopsies were taken to perform histologic and histomorphometric analyses.
Results: Several approaches were reported, that included the use of resorbable or non- resorbable membranes as a barrier, and autograft or allograft or xenograft or alloplast as a bone substitute. The ridge-preservation approach using xenograft in combination with collagen membrane seems to limit the resorption of hard tissue ridge after tooth extraction compared to extraction alone.
Conclusion: For the concept of extraction socket preservation, there are clinical data supporting its potential use. Given the low number of randomized controlled clinical trials reported in the literature, the generalizability of this approach is limited at this time.

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Ref no: EUABS066090

Immediate occlusal loading of single lower molars. five-year clinical follow-up from a prospective multi-center study using tiunite implants

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First and second molars in the lower jaw are commonly missing teeth. Despite high forces in the posterior mandible, it was hypothesized that the osseconductive property of the TiUnite® surface combined with high primary stability counteract potential physiologic risk. Based on these assumptions a protocol for immediately loaded implants for single molar replacement was developed. The study includes 33 consecutive patients treated in two private dental offices. A total of 40 Brånemark System® TiUnite wide platform Mk III implants were placed. All implants were provided with provisional crowns in full centric occlusion at time of surgery. Patients were clinically and radiological followed for 5 years. One implant failed, resulting in a cumulative implant survival rate at 5 years of 97.4 %. Mean marginal bone remodeling, 0–5 years, was 1.17 mm (SD 0.90, n = 38). The 5-year follow up data did not result in biomechanical problems associated with the use of oxidized wide implants for single molar support. The potential physiological problem of higher bone loss and implant failure rate in posterior mandible was not observed in the study. Although limited in number of patients treated in accordance with the protocol described, the result encourage the use of immediately loaded single lower molars supported by Brånemark System wide platform TiUnite implants and documents the clinical advantages of this protocol.

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Ref no: EUABS066079

The influence of keratinized mucosa on the maintenance of dental implants before and after the delivery of autogenous gingival grafts

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Despite strong opinions and beliefs about the benefits of keratinized mucosa, debate continues about the necessity for a keratinized tissue zone around implants. 44 individuals previously treated with 2 or more implants and overdentures were taken into consideration. The patients were diagnosed with inadequate keratinized tissue around implants (<2 mm) at the maintenance visit and a total of 67 implants received autogenous gingival grafts (AGG). Plaque and gingival indices (PI, GI), probing depth (PD) and the width of keratinized mucosa (KM) were recorded initially, at the 1st, 3rd and 6th months following the delivery of AGGs. At the 1st, 3rd and 6th months following surgery, PI and GI scores were significantly lower ($P < 0.01$). PD values were lower at the 3rd and 6th months according to baseline ($P < 0.05$). The width of KM was significantly greater following the delivery of FGGs at the 1st, 3rd and 6th months ($P < 0.05$). Furthermore, the width of KM correlated significantly with all clinical parameters ($P < 0.05$). This significant correlation revealed that the absence of an adequate zone of keratinized mucosa is associated with higher plaque accumulation and gingival inflammation also causing pocket deepening. It may be suggested that an adequate keratinized soft tissue zone around implants, which is enhanced by AGGs, facilitates cleaning procedures for the individual, reduces plaque accumulation and prevents gingival inflammation in return.

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Ref no: EUABS066071

IL 1 β and il6 levels in peri-implant crevicular fluid before loading: a pilot study

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The purpose of this study was to compare periodontal health around natural teeth and dental implants before protetic restoration on implant. The aim of this study was to determine interleukin-1β (IL-1β), interleukin-6(IL-6) levels in peri-implant crevicular fluid(PICF)and gingival crevicular fluid(GCF)of osseointegre dental implants and natural teeth and to investigate their relationships with clinical parameters before prosthetic restoration on implants. A total of 10 endosseos root-form dental implants were clinically examined by plaque index (PI), gingival index (GI), attachment level(AL)and probing depth (PD). PICF of implants were collected by periopaper strips and IL-1β, IL-6 levels were determined by enzyme-linked immunosorbent assay. The cytokine levels in PICF and GCF were expressed as total amount and as concentrations. Clinical indices, IL-1β, IL-6 levels and PICF volume for the most part decreased during wound healing from week 1 to week 12 after implantation ($P < 0.05$). It was found that AL did not change during this period. The result of this study shows that IL-1β, IL-6 levels decreased in parallel with the clinical measurements and gingival crevicular fluid volumes until the fourth week after the implantation and that at week 12 they reached similar levels with the natural teeth and were ready to be loaded.

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Ref no: EUABS066123

Radiographic alveolar bone changes after ridge preservation with two different biomaterials

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Aim: The aim of this randomized controlled trial was to evaluate radiographically bone changes following alveolar ridge preservation with a synthetic bone substitute, Straumann Bone Ceramic®, (SBC) or a bovine xenograft, Bio-Oss® (BDX).
Materials and methods: Alveolar ridge preservation was performed in 27 patients randomized in 2 groups. In the test group (n = 14), the extraction socket was treated with SBC and a collagen barrier (Bio-Gide®), whereas, in the control group (n = 13) with BDX and the same barrier. Standardized periapical x-rays were taken at 4 time points: *b*: after tooth extraction, *t0*: immediately after socket grafting, *t16*: 16 weeks, *t32*: 32 weeks post-op. The levels of the alveolar bone crest at the mesial (Mbh), and distal (Dbh) aspects of the socket were measured at all time points. All the obtained radiographs were subtracted from the follow-up images. The gain, loss and unchanged areas in terms of grey values were tested for significant difference between the two groups.
Results: In the test group, the Mbh and Dbh showed a mean difference of 0.89 ±1.2 mm and 0.66 ± 1.8 mm respectively between *t0-t32*. In the control group, the Mbh and Dbh showed a mean difference of 0.39 ±1.3 mm and 0.72 ± 1.3 mm respectively ($P > 0.05$). Both treatments presented similar gain in grey values between *b-t0, b-t16 and b-t32*. The SBC presented less loss in grey values between *b-t32* ($P < 0.05$).
Conclusions: Both types of bone grafts equally preserved radiographic alveolar bone levels.

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Ref no: EUABS065981

Clinical radiographic and histomorphometrical analysis of maxillary sinus augmentation using synthetic substitute - 4bone sbs

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Aims: To evaluate clinically, histologically and histomorphometrically the efficiency of a synthetic bone substitute 4Bone (60% HA & 40% β-TCP) for sinus lift procedure.
Materials and methods: The lateral antrostomy technique with 4Bone was performed. A double (internal-external) collagen membrane was used in 12 non-smoking patients. Core biopsies were harvested 9 months after sinus floor augmentation. Biopsies were stained with H&E. Histomorphometrical measurements were made using the point-counting procedure. The percentage fraction of each of the following tissues: newly formed bone (NB), residual graft material (G), bone marrow and connective tissue (CT)) was calculated for each section. The osteoconductive value was evaluated using a microscope equipped with a drawing tube, calculating the contact area between the graft particles and the newly formed bone divided into the total circumferences of the graft particles.
Results: Graft particles were observed in all specimens surrounded by newly formed bone in direct connection or by soft tissue marrow. The histometrical analysis of the sections showed an average NB of 28%, G of 41% and CT of 31%. The mean osteoconductive value was 57.8%.
Conclusion: 4Bone SBS is biocompatible and osteoconductive permitting new bone formation similar to deproteinized bovine bone mineral, and allograft materials when used in conjunction with an internal sub- Schneiderian collagen membrane for sinus augmentation procedures.

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Ref no: EUABS066000

Randomised controlled clinical trial on biofilm formation on smooth versus moderately rough implants

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Background: Most current implants have a moderately rough surface (compared to the older minimally rough ''turned'' surfaces) to facilitate osseointegration.
Aim: This RCT study (with split-mouth design) examined whether this increased surface roughness influenced the subgingival plaque formation.
Material and methods: Nine fully edentulous patients received 4–6 oral implants (mandible or maxilla). Per jaw, both smooth (turned) and moderately rough (TiUnite) implants (Nobel Biocare) were alternated. Also the healing and final abutments had a similar surface. Prior to abutment connection and 3, 7, and 14 days, and 3 months later plaque samples were taken (saliva, tongue and pooled (per surface type) subgingival plaque). Samples were analysed by culture technique and PCR.
Results: During the entire period, no statistically significant differences could be detected between the minimally and moderately rough surfaces, neither in amount, nor in composition of the subgingival plaque.
Conclusion: The latter seems to indicate that the roughness of the more modern implants does not necessarily jeopardize their long-term outcome.

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Ref no: EUABS066003

Randomized controlled trial on a novel tapered implant design versus a standard tapered implant . interim one-year results

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Background: A novel tapered, variable-thread design implant (NobelActive) has been developed to provide stable tissue support and immediate function.The primary objective of this randomized controlled five-year multicenter study was to evaluate the differences in bone level between a novel implant design (NobelActive) and a standard tapered implant (NobelReplace) in immediate function.

Material and methods: 177 patients randomly allocated to three treatment groups (2 different test implant groups: NA Internal and External; and 1 control implant group: NR) received 325 implants. All implants were placed into healed sites and were immediately non-occlusally loaded.Clinical and radiographical examinations to evaluate the treatment outcome were performed at the time of implant placement and after 3, 6, 12 months and 2 years.

Results: One-year cumulative survival rates were comparable (96.6% for NA Internal; 96.3% for NA External; 97.6% for NR). Mean (SD) change in bone level was -.95 mm (1.37) for NA Internal, -.64 mm (.97) for NA External, and -.63 mm (1.18) for NR ($P = .589$; Kruskal-Wallis). Persistently stable soft tissues and a significantly increased papilla index ($P < .001$; Wilcoxon-Signed-Rank) were observed for all implant types.

Conclusions: The results show stable bone and soft tissue levels after the second year in function for this novel variable-thread design implant (NobelActive).

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Ref no: EUABS065982

Systemic and oral health status of turkish periodontal patients- a retrospective study

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Background: Periodontitis is an inflammatory disease associated with some systemic disorders such as cardiovascular disease, diabetes mellitus and respiratory diseases.
Aim: The aim of the study was to assess patient's self-reported systemic and oral health condition.
Methods: Chart reviews and interviews provided systemic and oral health status data. Randomly selected periodontal charts (n = 518) were evaluated. The following information was obtained from each patient record at time of initial examination as:, gender, age, systemic diseases, tobacco smoking status, tooth brushing habits, complaint of gingival bleeding, pain, recession, tooth mobility and halitosis.
Results: The age ranged between 9 and 87 with average age 41. Women comprised 41.1% of the sample. 37.1% of the patients had different systemic diseases. Diabetics comprised 6.7% of respondents. Hypertension was reported in 60 (11.8%) patients. Rheumatic fever was reported in 16 (3.1%) patients. Asthma was in 14 (2.8%) patients. 25.4% of patients were recorded as smoker, 2.6% of patients were formerly smokers while 72% of patients were non-smoker. Gingival bleeding was reported in 372 (71.8%) patients while recession was reported in 334 (64.5%) patients. 67.1% of patients brush their teeth routinely everyday.
Conclusion: The most prevalent systemic diseases in periodontitis patients were anemia, diabetes and heart related conditions. Also, over half the subjects suffered from poor oral health.

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Ref no: EUABS066047

Periodontal findings among guatemalan type I and II diabetics

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Prevalence, severity and extension of periodontal disease and prevalence of *A. actinomycetemcomitans* (*A.a.*) and *P. gingivalis* (*P.g.*) in Guatemalan type I and II diabetics, were assessed. A consecutive sample of 25 subjects per diabetes mellitus type was studied. Subjects who fulfilled inclusion criteria and signed the informed consent were enrolled. The clinical examination comprised registration of: absent teeth, full mouth probing pocket depth (PPD), gingival bleeding on probing (BOP), tooth mobility and furcations. Intraoral radiographs were taken. Intra- and extracrevicular plaque samples were taken, then processed for *A.a.* and *P.g.* with PCR. Prevalence of periodontal disease among Guatemalan type I and II diabetics was 76% (n = 19/25) and 88% (n = 22/25) respectively. Clinical periodontal disease severity (PPD ≥4 mm) in type I and II diabetics was 36% and 64%, respectively. 76% (n = 19/25) and 92% (n = 23/25) of type I and II diabetics, respectively had teeth affected with PPD > 3 mm. Prevalence of both periodontal pathogens was 56% and 68% among type I and II diabetics respectively; overall prevalence of *A.a.* was 44% and *P.g.* was 18%. We conclude: prevalence of periodontal disease among both groups is high; periodontal disease severity is moderate among type I diabetics and severe among diabetics type II; periodontal disease extent is low among type I diabetics and generalized among type II diabetics. Overall, prevalence of periodontal pathogens (*A.a.* and *P.g.*) is low.

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Ref no: EUABS066007

The change in periodontal conditions and caries experience in Zagreb, Croatia, after a period of 19 years (1985–2004)

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Almost 19 years ago a large dental survey concerning periodontal conditions and caries experience was conducted in the town of Zagreb. Since new data about the oral health conditions of the citizens of Zagreb were unknown a new survey was conducted. In the town of Zagreb, Croatia 1147 subjects from 6–55 and above were surveyed. The results were compared with the results of the 1985–6 survey. The WHO CPI (Community periodontal index) methods were used to survey the oral health conditions. In age groups from 6–20 we can see an increase in average numbers of healthy sextants (2.5 versus 1), and a decrease of bleeding sextants (2.5 versus 3.5), while there is an increase of sextants with deep periodontal pockets in age groups from 30–55 and above (1.5 versus 0.5). This observation could be a consequence of more retained teeth as shown by the smaller DMF scores in the 2002–4 survey.45% of the examined did not know what periodontitis was. The results show that subjects who irregularly visit dentists, less frequently brush their teeth and smoke have more deep pockets. In spite of the improved oral health conditions of the citizens in Zagreb, as compared to 19 years ago, the prevalence of periodontal diseases and caries is still very high. The results indicate that preventive programs should be improved, and that the population should be informed about periodontal disease, its economic burden, prevention and treatment possibilities.

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Ref no: EUABS066029

Longitudinal changes in periodontal disease in elderly in nursing home

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Background: Our previous study demonstrated that more than one-third of dentate elderly in nursing home in Japan had periodontitis.
Aim: To investigate longitudinal changes in periodontal disease in the untreated residents over a period of 2 years.
Methods: 104 dentate residents aged 65–98 years in 5 nursing homes in Tokyo, Japan were participated. The participants were monitored for plaque (PlI), bleeding on probing (BOP), probing pocket depths (PPD) and clinical attachment level (CAL) at

4 sites per tooth for all teeth at baseline and 2 year. During the observational period, caregivers cleaned their teeth every day.
Results: Out of the subjects examined at baseline, 36 residents lost due to the death, illness or other reasons. The mean PlI was significantly improved from 2.2 (SD 0.5) to 1.7 (SD 0.6), $P < 0.05$). The mean values of PPD and BOP were increased from 2.4 mm (SD 0.3) to 2.6 mm (SD 0.3) and from 35.4% (SD 14.6) to 36.9% (SD 18.0), respectively. The differences were not statistically significant. The mean value of CAL failed to change, from 4.1 mm (SD 1.0) to 4.1 mm (SD1.3). However, 38 % of subjects presented more than 2 mm attachment loss in multiple sites. Stepwise multiple regression analysis revealed that PPD was the significant explanatory factors for percentage of attachment loss.
Conclusions: Even if the mean values of CAL underwent only minor changes, mutiple sites of certain subjects worsened. Intensive oral hygiene provided by professionals may be necessary.

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Ref no: EUABS066409

Changes of the free gingival margin in young adults with various gingival biotypes, after supragingival debridement and oral hygiene habits improvement

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Aim: The aim of this study was to record the frequency of different gingival biotypes in Greek populations and to investigate the hypothesis that gingival dimensions changes are related to the biotype and oral hygiene habits.
Materials and methods: Eighty-seven healthy first –year students of Dentistry School at A.U.Th. were subjected to a baseline examination and re-examined 3 months later. Medical and dental history, periodontal status, intra-oral radiographs and photographs and measurements for biotype definition were recorded. Data about oral hygiene habits was collected using a questionnaire. Periodontal debridement was performed at subjects who exhibited calculus or probing depth ≥4 mm. Subjects were classified into three biotypes and data were analyzed using statistic program SPSS 15.0 with exact tests system.
Results: The debridement and amendment of oral hygiene improved the periodontal indexes. Statistical significant increase at recession, ratio of width/length of crowns of the upper incisors and width of upper keratinized gingiva was identified, but there was no statistical significant relation of these changes with biotype, except for gingival thickness 0,75- 1,25 mm, in which a negative correlation to recession changes was found.
Discussion: The attendance of the students for the next years will evince the influence of gingival biotype and tooth brushing technique in resolving or progression of recession.

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Ref no: EUABS066078

Prevalence change of periodontitis in the german oral health studies

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Background: The aim of the study was to assess the change in prevalence and extent of periodontal diseases in Germany between 1997 and 2005 based on the Third and Fourth German Oral Health Study (DMS) in a national representative sample.
Methods: For adults (35–44 years; N = 655/N = 925) and seniors (65–74 years; N = 1367/N = 1040) periodontal status was assessed including number of teeth (excluding 3rd molars), attachment loss (AL) and probing depth (PD). Due to methodological differences in both studies (halfmouth versus index teeth, 2 versus 3 sites), results were converted to hypothetical fullmouth assessments.
Results: In DMS4 adults had 1.5 teeth more than in DMS3. Prevalence of AL ≥3 mm increased from 93.0 to 96.4%. The number of moderately diseased teeth (AL 3–4 mm) increased by 2.6, while the number of teeth with AL ≥5 mm stagnated (6.0 versus 6.2). In adults, prevalence of PD ≥4 mm changed from 64.7 to 84.6%. In DMS4, 6.8 (versus 7.5) teeth were moderately (PD 4–5 mm), and 1.0 (versus 1.6) teeth severely (PD ≥ 6 mm) affected. In DMS4, seniors had on average 3.3 teeth more. Prevalence of AL ≥ 3 mm and PD ≥4 mm stagnated at 100%. In DMS4 (DMS3), 9.2 (8.4) teeth were severely affected (AL ≥ 5 mm). The number of teeth with PD 4–5 mm decreased from 8.0 to 5.9, while the number of severely diseased teeth (PD ≥ 6 mm) stagnated (1.8 versus 2.0).
Conclusions: Prevalence and extent of periodontitis are high in Germany. For adults, a stagnation on a high level was observed; for seniors a slight increase was estimated.

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Ref no: EUABS066897

Improvement of periodontal and dental health knowledge of pregnant women by a single interdisciplinary informative meeting

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The oral health of the pregnant women affects the health of their and the newborn. Aim of this study was to determine the effect of a single informative meeting with pregnant woman about periodontal and dental health during pregnancy and early childhood. The knowledge of 375 women in childbed about oral health aspects during pregnancy and childhood was assessed by a questionnaire. 149 women attended an interdisciplinary informative meeting and received brochures illustrating oral health issues and possible relationships between the oral health of mother and child (info-group). The control-group (226 women) did not participate. Data were analysed by Chi-Square tests ($P < 0.05$). Of the info-group 37.2% followed the advices and scheduled preventive dental appointments. 98.0% of the info-group considered an informative meeting as beneficial and demonstrated more knowledge about oral health aspects (e.g. periodontitis, bacterial transmission, nutrition) than the control-group ($P < 0.001$). Women of the info-group knew methods to improve their and their child's oral health. They recalled the recommended schedule of dental appointments during pregnancy and the first three years after delivery ($P < 0.001$). In contrast, 71.8% of the control-group was not aware of oral preventive concepts. A single informative meeting significantly improved the knowledge and attitude of pregnant women towards oral health risk factors.

417
Ref no: EUABS067032

Access to dental care reduces the risk of tooth loss in older subjects

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Background: The significance of access to dental care on oral conditions in older subjects is limited. We hypothesized that dental care control for aging effects on oral and periodontal conditions.

Materials and methods: 1020 randomly selected subjects between age 60 and 96 from the Swedish National Study on Aging and Care Blekinge study received comprehensive medical and dental examinations.
Results: Dentate women and men had, on average,18.4 teeth (S.D. ± 7.6), and 18.9 teeth (S.D.±7.5) ($P = 0.37$) respectively. In the youngest age group with infrequent dental visits 37% had > 20 teeth, and 73% had > 20 teeth if they had annual visits. Among old-old infrequent dental visitors 1.8% had > 20 teeth and 37% had > 20 teeth with annual visits. Across age groups, the overall % bleeding on probing was 23%. When adjusting for age, GLM univariate analysis failed to demonstrate an effect of frequency of dental visits and ABL scores ($P = 0.18$) but frequent dental visitors had significantly more teeth than infrequent visitors ($P = 0.001$).
Conclusions: Tooth loss and extent of alveolar bone loss increase with age. Frequent dental visits seem to preserve teeth but has no impact on the amounts of deposits, gingival inflammation, or alveolar bone levels.

418
Ref no: EUABS065176
The rate of equilibrium of plaque levels following professional prophylaxis
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Objective: To determine the length of time it takes for plaque levels to return to their baseline levels following a professional prophylaxis.
Method: The study was a randomised, single blind design. After obtaining informed consent and a medical history, accepted subjects used Signal UK toothpaste throughout the study. Brushing was prohibited on the morning of each test visit but subjects brushed in their normal manner at all other times. Plaque was assessed on two occasions prior to the start of the test phase using the Modified Quigley and Hein Plaque Index. At Day 0 the subjects were randomised to receive a scale and polish (test group n = 15) or no intervention (control group n = 7). Following the prophylaxis the absence of plaque deposits was confirmed. Plaque was then reassessed 1 3, 7, 14 and 21 days following baseline.
Results: Data were analysed using a repeated measure model. Table 1.mean (s.d) Day-6 Day 0 Day 1 Day 3 Day 7 Day 14 Day 21 Test 2.03(0.37) 2.00(0.35) 1.40(0.29) 1.65(0.36) 1.83(0.45) 1.88(0.48) 1,84(0.44) Control 2.25(0.48) 2.22(0.69) 2.17(0.87) 2.18(0.43) 2.10(0.73) 2.18(0.54) 2.02(0.54) Significant differences were found between the test and control groups at Day 1 and 3, showing that after intervention for the test group the plaque levels for this group rose, and were not significantly different from those of the control group by Day 7.
Conclusion: Plaque levels returned to their pre-study levels 7 days following the professional prophylaxis.

419
Ref no: EUABS065347
Determining the oral health status and oral hygiene habits of the elderly living residential homes in turkey
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Objectives: The aim of our study is to determine the periodontal/oral status, and oral hygiene habits of elderly living in residential homes.
Methods: In our study, 101 subjects (67 female, 34 male, age ≥65 years) were selected, living in residential homes in İzmir. Demographic characteristics were determined and a questionnaire (smoking/alcohol habits, systemic problems, dental treatment frequency, oral hygiene habits) applied. Community Periodontal Index (CPI), gingival recession, plaque and calculus accumulation, number of filled and decayed teeth, usage of removable/fixed dentures and tooth loss were assessed.
Results: Of the 101 subjects, 59% of them were dentate. In spite of periodontal diseases were known 84% of the dentate subjects, the prevalence of bleeding on probing was 95%, plaque accumulation was 98% and calculus accumulation was 88%. None of the subjects had healthy sextants with the score of CPI = 0. CPI = 2 was 68%, CPI = 3 was 32% among the subjects. Of the dentate subjects 27% brushes once a day, 16% brushes two/three times a day, whereas none of the subjects were using approximal tooth cleaning devices. The average number of teeth with caries was 0.97 ± 1.72 per person. The prevalence of edentulousness was 41% and need for total prosthesis was 23%.
Conclusion: The data of this study showed poor periodontal health in an elderly Turkish population living in residential homes. For elderly, protective and essential treatment procedures have to be planned better.

420
Ref no: EUABS065335
Aggressive periodontitis: epidemiology and clinical profile
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Jamila Kissa

The common features of all forms of aggressive periodontitis are: patients who, except for the presence of the periodontal infection, are otherwise clinically healthy; rapid loss of clinical attachment and bone destruction. In order to fill in the gap of statistics in Morocco concerning aggressive periodentitis and to eventually confirm the high rate of its incidence that we suspected during our daily clinical activity, we have conducted a national transversal survey of observation through a sampling. This survey shows the various aspects of this disease: The assessment of aggressive periodontitis prevalence in Morocco - The identification of the specific clinical and radiological characteristics - And eventually the identification of the risk factors and the population at risk The sample has been taken at random through a cluster sampling procedure. It included Moroccan children and young schoolgoers (primary and secondary schools) aged 10 to 18 and who are in a generally good physical condition. More than 4000 people from different provinces of the country have been a full-month clinical examination of six sites per tooth and an interview were performed. Baseline examination included evaluation of plaque, DMF, bleeding on probing, calculus, pocket depth, attachment loss. A radiological examination has been conducted to confirm suspected cases. We would like to present the preliminary findings of this national survey concerning the above – mentioned sample.

421
Ref no: EUABS065244
Awareness of periodontal health status among patients with different dental problems
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The aim of this survey was to assess the knowledge of patients about dental health and diseases,especially awareness of

periodontal diseases. 279 patients were evaluated. Evaluation included oral examination of soft and hard tissues, completion of a questionnaire. The questionnaire items included the knowledge, attitudes, awareness and behavior of patients. Also plaque and bleeding on probing indices, loss of attachment was measured at Ramfiord teeth. Patients were classified according to their major factor behind the dental visit. Thus we had four groups of participants who came us for periodontal, orthodontic, prothetic, conservative and endodontics problems. Statistical analysis was undertaken using SPSS version 13. Patients who applied to our clinic for periodontal problems were 102, for conservative and endodontic problems were 203, for orthodontic problems were 50 and for prothetic problems were 54. Our study showed that 97.1% of study patients have periodontal problems but only 36.55% of patients applied us for periodontal problems. About 39.8% of all participants perceived not having any periodontal problems. But according to clinical examination only 2.9% of patients not have any periodontal problems such as calculus, gingival bleeding, erythema, gingival recession and mobility. Our data suggested that knowledge and awareness concerning periodontal diseases is quite poor. The results of study indicate that patients' attitudes toward oral health education need to be improved.

422
Ref no: EUABS065609

The relationship between personality types and communication skills in dental hygiene students

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The ability of dental hygienists to communicate effectively with their patients may have a profound affect on the outcome of their endeavours. Evaluation of these skills and their relationship to personality types may be relevant to candidate selection, job-satisfaction and quality of patientcare.

Objectives: To assess and compare the personality types & communicationskills of a group of dental hygiene students and assess their perceptions of the communication skills.

Materials and methods: The students personality types were assessed using the 16PF (5^{th} Ed) at the beginning and end of the 2 year programme. Communication skills were measured using video taped observation of group discussions & audio taping of clinical sessions at three points. Multipletools were used to analyse this information. The patient satisfaction levels & baseline and evaluation plaque and bleeding scores were recorded.

Results: Personality traits were unchanged between tests, 75% of the group showed above average scores for extraversion. The students communication skills improved during the study. Patients satisfaction levels were high (76%-96%).

Conclusion: The dental hygiene students personality did not change during their training. The patient's satisfaction levels appear to be affected by their perception of having their feelings addressed. Levels of extraversion showed strong links with communication skills, clinical outcomes and patient satisfaction.

423
Ref no: EUABS065552

Periodontal disease among the elderly in Finland

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Objective: The aim was to describe prevalence and extent of periodontal disease and its association to sociodemographic factors among the elderly in the general population.

Material and methods: The study population consisted of 1460 persons aged 65 years or older participating in a nationally representative Health 2000 Health Examination Survey in Finland. The data for this study were collected by an interview and a clinical oral examination.

Results: Periodontal pockets of 4 mm or more were found among 67% of the participants and of 6 mm or more among 31% of the participants. Mean number of teeth with periodontal pockets of 4 mm or more was 5.4 for men and 3.6 for women and of 6 mm or more 1.3 for men and 0.7 for women. Presence of deepened periodontal pockets was associated with male gender, high education, living alone and living in rural areas.

Conclusion: This national study shows that presence of deepened periodontal pockets is common among 65 year old and older persons and is associated with male gender, high education, living alone and living in rural areas. This means high periodontal treatment need among elderly people, especially among men and those living alone and in rural areas.

424
Ref no: EUABS065553

Periodontal treatment needs in ljubljana citiziens 20 years after first examination

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The aim of our study was to evaluate the longitudinal change in periodontal treatment needs in a population of Ljubljana citizens that have been examined 20 and 10 years ago. 238 subjects being 15–65-years-old in the first survey, 25–75 years old in the second survey and being 35–85-years-old in the third survey were included in the study. Periodontal treatment needs were assessed by the Community Periodontal Index of Treatment Needs (CPITN) and we compared the results with the findings of the first and second examination. We found that all subjects need oral hygiene instruction (first survey: 97.6%, second survey: 99.3%) that 98.3% subjects aside from oral hygiene instruction, need root planning and scaling (first survey:77.7%, second survey: 93.9%) and that 47.1% subjects aside from oral hygiene instruction and root planning and scaling need also complex periodontal surgical treatment. We found a large increase of subjects that need complex periodontal surgical treatment compared to the examination 10 years (second survey: 27.3%) and 20 years (first survey: 20.3%) ago. Male subjects need periodontal surgical treatment more frequently (52.4%) than female subjects (42.1%). These findings are similar to the first and second survey. We are concluding that periodontal treatment needs among 35–85-years-old Ljubljana citizens are high and need better preventive measures and therapeutic efforts of periodontists, dentists and dental hygienists.

425
Ref no: EUABS065573

Do we influence the smoking-habits of our patients, during treatment at a specialist clinic of periodontology?

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Background: Several studies report that smoking increases the risk of periodontal disease from three to five-fold and impairs outcome of periodontal treatment in smokers compared to non-smokers.

Aims: (i) to investigate smoking prevalence in referred patients and (ii) to study our influence on smoking-habits during treatment.
Materials and methods: All 161 patients referred to a specialist clinic of periodontology during 6 months were included and answered an inquiry concerning smoking-habits before and after treatment. The patients were informed about the negative impact of smoking on oral health and were advised to quit smoking. Depending on treatment options patients were grouped into periodontitis (60.2%), peri-implantitis (8.1%) and implant (25.5%).
Results: Totally 31.7% were smokers. In the treatment groups 38.1% of those with periodontitis, 7.7% of those with peri-implantitis and 19.5% of those referred for implant were smokers. Most patients had been smoking for 15–20 years, on average 12 cigarettes/day. After treatment 45.7% of the periodontitis, 1% of the peri-implantitis and 2.9% of the implant patients had reduced their smoking.
Conclusion: The prevalence of smokers was somewhat higher among patients referred to a specialist clinic than in the general population. Most of the smokers did not change their smoking-habits. It is difficult to influence smoking-habits by information only and more efforts are therefore needed.

426
Ref no: EUABS065866

The oral health status of 5- to 18-year old children in cappadocia region

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The aim of the present study was to describe the actual oral-health status of children lived in Cappadocia Region, Turkey, aged between 5- to 18-years-old, according to gender. Totally 4337 individuals (1946 males, 2391 females) were selected randomly from different schools. The parameters used to measure oral-health status were 1) community periodontal index treatment need (CPITN), 2) dental health status (decayed,missing,filled permanent teeth-DMFT). All examinations were done by a periodontist. Chi-square and Mann-Whitney tests were used for statistical evaluations. Statistically significant gender differences were observed in some parameters of CPITN and DMFT indexes. According to statistical tests, significant correlation was found between age and CPITN scores. Caries prevalence in this population for deciduous and permanent dentition was 34.10 and 33.62%, respectively. Approximately 11.13% (494-children) have one or more missed teeth. Mean CPITN score was found to be 1.20%. Only 4.58% of the children exhibited no calculus or gingival bleeding. Gingival bleeding was observed in 70.57% of children, while 24.77% had calculus. Only 4 children have shallow pockets. In conclusion, there is an urgent need for establishing caries preventive activities for school children. The prevalence of caries among the 5–18 years-old children was not high, but their periodontal condition was unsatisfactory. More oral-health education activities should be organized for these children.

427
Ref no: EUABS065867

Associations between supragingival and subgingival bacteria and a clinical plaque index

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Background/aim: To evaluate the correlation between an extensively applied clinical plaque index and the numbers of specific bacteria supra- and subgingivally.
Materials and methods: The subject sample consisted of 58 chronic periodontitis patients at supportive treatment. Supragingival and subgingival samples from the mesial surface of four preselected teeth were collected. A total of 463 samples were analyzed with the checkerboard DNA-DNA hybridization technique for *Porphyromonas gingivalis, Tannerella forsythia, Treponema denticola, Actinomyces naeslundii and Streptococcus mitis* and the numbers of bacteria assessed with a micro-array software (Total-Lab). The Turesky modification of the Quiqley-Hein Index, the Löe and Silness Gingival Index, Probing Depth and Clinical Attachment level were also recorded. Correlations were seeked among the plaque index, absolute numbers of bacteria and other clinical indices by applying the Spearman's correlation coefficient ($P = 0.05$).
Results: For both supra- and subgingival plaque, a statistically strong correlation was observed between the Turesky modification of the Quiqley-Hein Index and all studied bacteria ($P < 0.01$). Statistically significant correlation was seen between the plaque index and clinical attachment level ($P < 0.05$).
Discussion/conclusion: A widely used clinical index of plaque appears to correlate well with important periodontal pathogens as well as with bacteria associated with periodontal health at the site level.

428
Ref no: EUABS065821

Detection and prevalence of antibiotic resistance genes in the oral cavity of greek subjects: a pilot study

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Background/aim: Data concerning the presence of antibiotic resistance genes in the oral cavity are limited. Aim of this study was the investigation of the prevalence of resistance genes concerning tetracyclines (*tetQ*, *tetM*), b-lactams (bla_{TEM}) and imidazoles (*nim*) in plaque samples of Greek subjects.
Materials and methods: Fifty-four subjects participated in the present study. Participants contributed with one pooled subgingival sample and one sample from the tongue. Samples were analyzed with Polymerase Chain Reaction for *tetQ*, *tetM*, bla_{TEM} and *nim* genes. Subjects were stratified according to age or periodontal status. Antibiotic intake during last year was also recorded. Comparisons were performed by applying non-parametric tests ($P = 0.05$).
Results: High prevalence of *tetM*, *tetQ*, and bla_{TEM} genes were detected in both tongue and subgingival samples (48.1 - 82.2%). *nim* was the only gene that was not detected. No differences were observed across genes between age groups or periodontal status. No statistical correlation was observed with presence of the bla_{TEM} gene in subjects who reported intake of b-lactams during last year.
Discussion/conclusion: Findings from the present study which indicate high prevalence of *tetM*, *tetQ* and bla_{TEM} but not *nim* resistance genes in the oral cavity, in a country with extensive antibiotic consumption, suggest that guided antimicrobial prescription for periodontal patients might reduce the risk for the dissemination of antibiotic resistance.

429
Ref no: EUABS065841

Prevalence, severity and extent of periodontal disease in indigenous of the Amazon region of Brazil

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Background: Epidemiological studies show considerable variation in prevalence, severity and extent of periodontal disease around the World. Such variations can be derived from different habits, oral hygiene,ethnical factors and social environment,among others.
Aim: This study aimed to evaluate the prevalence, severity and extent of periodontal disease in members of an indigenous population located at the Amazon region of Brazil.
Methods: The sample consisted of 182 individuals (22–61years,-mean 31.1 ± 7.7)visitors of patients undergoing medical treatment at The Indian House of Health of Boa Vista,the capital of the State of Roraima. The following clinical parameters were registered by one single calibrated examiner:probing depth(PD);clinical attachment level(CAL);tooth mobility;dichotomous plaque index(PlI) and bleeding on probing index(BOP).
Results: The findings showed that 87.9% of the subjects presented chronic periodontitis, 69.2% showing the localized form and 30.8% expressing the generalized form of chronic periodontitis. The severity of chronic periodontitis was considered mild, moderate and severe in 0%, 21.4% and 78.6% of the studied population,respectively. Only 9.9% of the subjects showed periodontal health and 2.2% gingivitis. Mean BOP and PlI indices were 49.5% ± 40.4 and 42.1% ± 35.3, respectively.
Conclusion: The results showed a high prevalence,extend and severity of chronic periodontitis in the studied population. Further studies on periodontal risk in this population are suggested.

430
Ref no: EUABS065771

A survey of Trinidadian and Tobagonian general dentists' knowledge and diagnosis of periodontal diseases

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Aims: To determine Trinidadian and Tobagonian general dentists' knowledge of periodontal diseases, diagnostic practices and need for continuing profession education (CPE) in periodontology.
Methods: In 2007, a self-administered, pre-piloted survey questionnaire was mailed out. Questions were related to knowledge of periodontal diseases and diagnosis.
Results: Of a total of 225 general dentists, 151 (66%) participated with 39% female and 61% male. Their age range was 24 to 73 yrs (mean 36 yrs). The majority had graduated in Trinidad (70%). The mean number of years in practice was 9.8 (range 1 to 42 yrs). Seventy five percent reported always screening new patients for periodontal diseases, whilst 47% reported that they always screened at recall. Ninety four percent reported plaque as being relevant or highly relevant to treatment success. Only 36% scored plaque and 21% utilized plaque scores in patient education. Sixty two percent took bitewing radiographs for patients with probing depths (PD) < 5 mm while only 46% took periapical radiographs for patients with irregular PD > 5 mm. As for the diagnosis of aggressive periodontitis, 55% thought that it occurred in patients <30 years of age, 37% that it was associated with systemic disease and 24% that subgingival calculus was frequently present.
Conclusions: These results suggest that many general dentists in Trinidad and Tobago require CPE on plaque scoring, selection of radiographs and the diagnosis of aggressive periodontitis.

431
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The role of area in the occurrence of early periodontal destruction

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Background: Periodontal etiological research frequently focuses on individual disease determinants, and only rarely have attempts been directed to investigate causes at higher levels. Area mirrors potential causes of disease such as the lack of access to health care, which may be particularly influential in the occurrence of disease. Interventions at an area level may also be easier to achieve than interventions at the individual level.
Aim: To assess the association between the occurrence of clinical attachment loss ≥ 3 mm (CAL ≥ 3) and the area of living of young individuals.
Materials and methods: An epidemiological study conducted among 9,163 Chilean high-school students. Information on 20 communes was grouped into five areas representing the public health administration of Santiago city, and gender and age-adjusted multiple logistic regression analysis was used to assess the association between the occurrence of CAL ≥ 3 and the area where the students lived.
Results: The occurrence of CAL ≥ 3 ranged between 0% (Macul commune) and 16.1% (Lo Espejo commune). The logistic regression analysis showed that subjects living in the East Area of the city were less likely to present with CAL ≥ 3 (OR = 0.59) than subjects living in the Center Area. On the other side, students living in the Southeast Area (OR = 2.64) or in the South Area of the city (1.73) were significantly more likely to present with clinical attachment loss ≥ 3 mm than were students from the Center Area.

432
Ref no: EUABS065667

Oral health status of seniors in a rural german population

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Background: The dental health status in elderly people is described in different populations. No data exist about seniors in rural East Germany. The aim of this investigation was to compare the oral health status of persons older than 65 years in Saxonian villages and to extrapolate treatment consequences.
Methods: In a dental practice and in retirement homes, 240 persons were randomly selected for this study. For group A, 133 persons between 65 and 74 years were recruited. Group B consisted of 107 persons of 75 years and older. Persons were interviewed concerning their general and dental health. Oral examination included caries prevalence, periodontal condition, and prosthetic reconstructions. Differences between groups were analyzed by non-parametric u-tests.
Results: Significant differences in DMF/T means between groups A (22.4) and B (27.2) were found due to more missing teeth in group B patients. The mean attachment loss was 4.44 ± 1.95. In group B, only a trend towards more attachment loss was noted. With increasing age, numbers of patients treated with mucosaborne dentures increased significantly. Group B seniors estimated

their oral health more satisfactory while general health was judged less well compared to group A persons.
Conclusions: In older seniors, problems of general health are more essential than those of dental health. However, regular dental check-ups are important to ensure appropriate caries, periodontal, and prosthetic treatment.

433
Ref no: EUABS064816
Effect of a non-recurring group instruction on oral hygiene for adults
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In this study the effect of a non-recurring group instruction on oral hygiene in adults was examined with 2 different staining agents (Mira-2-Ton, Fluorescin). 100 male patients (age 19–53, mean 29.6 ± 8.6) were randomly assigned to 4 groups (n = 25). Group A: oral hygiene instructions in groups of 8–9 patients, Mira-2-ton staining; group B: Mira-2-Ton staining only; group C: oral hygiene instructions in groups of 8–9 patients, fluorescin staining; group D: fluorescin staining only. Baseline (BL) and final examinations (FE) covered the following parameters: QHI, API, mod. SBI, and CPITN. All participants received a professional tooth cleaning at the end of BL, FE was performed 16 weeks after BL. Plaque indexes in groups A, and C showed a significant improvement between BL and FE ($P < 0.01$). In group A, the mean QHI changed from 2.0 ± 0.75 to 1.3 ± 0.6 (group C: 1.75 ± 0.35 to 1.0 ± 0.3). API (median) in group A: 86% to 57% (group C: 82% to 35%). Both staining reagents showed no differences in QHI ($P = 0.2$); API was improved in group C ($P < 0.01$). Groups B and D showed no significant difference between BL and FE ($P > 0.05$). The SBI slightly increased between BL and FE for all groups, significant differences between groups and staining reagents could not be determined ($P = 0.49$). CPITN did not vary between the groups ($P = 0.52$). A non-recurring group instruction in adults led to a slight improvement in plaque removal, but did not influence the degree of gingival inflammation.

434
Ref no: EUABS064907
Dental students' perception on online asynchronous periodontal based case discussions
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Periodontal workplace learning is often compromised because suitable patients with pathology at the appropriate level of students' knowledge are lacking.
Aim: To assess students' opinions on online periodontal case-based discussions.
Material and methods: Online asynchronous discussion forum was introduced based on multiple cases with periodontal treatment needs. Cases were adapted to the appropriate level of the students' knowledge as thought in the theoretical course periodontology. They focussed on anamnesis, clinical condition, radiographs and full mouth periodontal status. Students were divided into groups. Weekly new input was posted online. Each participant had to post at least 2 messages in attribution to solve the problem and concluded with a final treatment plan. Periodontists reviewed the discussion and provided feedback. A life discussion showing the performed treatment finalized the session. A survey was given to 89 students to assess opinions on computer usage, relation with theoretical course, preparation for clinical practice, workload and overall satisfaction. Answers were scaled from negative to positive (1–5).
Results: Average scores: use of computers 4.54, relation with theoretical course 4.34, preparation for clinical practice 4.26. On average 3.6 hours weekly were spent and the overall satisfaction was 79.9%.
Conclusion: Online discussions of periodontal cases are useful, although future research must still prove the effect on learning results.

435
Ref no: EUABS064764
Five-year follow-up of periodontal disease as related to magnesium deficiency
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Background: In the Study of Health in Pomerania (SHIP), subjects with an adequate magnesium supply had a lower risk of periodontal diseases and tooth loss than those with low magnesium levels. We conducted a 5-year follow-up monitoring to determine whether the baseline magnesium levels had a long-term effect on periodontal outcomes.
Methods: Of 4310 participants diagnosed for periodontitis in the baseline study, 3300 (75%) examined for progression or regression of their periodontal state in the course of five years. We related the outcome variables of attachment loss to baseline characteristics, especially serum magnesium and calcium concentrations, as well as to confounding variables as socioeconomic state, smoking, and diabetes.
Results: The progression of periodontitis was determined by the ratio magnesium/calcium in a dose-dependent manner. Mean attachment loss increased by 0.2 mm in the lowest tertil of the magnesium/calcium ratio, by 0.1 mm in the middle tertile and remained unchanged in the highest ($P < 0.001$). Corresponding figures for percent attachment loss >4 mm were 5%, 4%, and 2% in the respective Mg/Ca tertils ($P = 0.012$). Main reasons for sub-optimal magnesium levels were diabetes and being female.
Conclusions: An adequate magnesium supply to maintain the magnesium to calcium balance may be a protective factor to counteract periodontal progression.

436
Ref no: EUABS064767
Tooth loss and cognitive impairment
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Objectives: Chronic subclinical inflammation may elevate the risk of cognitive impairment. Periodontitis is associated with subclinical inflammation and accounts in part for tooth loss. The hypothesis was tested that periodontitis and tooth loss as a proxy of chronic periodontitis is associated with cognitive impairment in the elderly.
Material and methods: The population-based Study of Health in Pomerania comprises 1336 subjects (60–79 years). Cognitive impairment was assessed with the Mini-Mental Status Examination (MMSE). Linear regression analyses were adjusted for potential confounders.
Results: A decreased number of teeth was associated with lower MMSE scores in females ($P < 0.0001$) and males ($P = 0.0199$) in age-adjusted models. In the fully adjusted models tooth loss

was associated with cognitive impairment in females ($P = 0.0141$) but not in males ($P = 0.7005$).
Conclusions: A significant association between tooth loss and cognitive impairment was found in females that was not accounted for by potential confounders.

437
Ref no: EUABS064710
Attitudes and practices of dental hygienists treating hiv patients in haart era
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Background: Literature reports highlighted the presence of discriminatory episodes towards HIV positive individuals on behalf of dental care workers. The purpose of this study was to assess hygienists' attitude when treating HIV infected individuals in HAART era.
Material and methods: A national observational study was carried out on all the members of an Italian hygienist association (Unione Nazionale Igienisti Dentali - UNID). An anonymous questionnaire was mailed to 1,247 hygienists: the first section investigated demographic data; the second section the relationship between the hygienists and HIV infected persons, to identify the presence of discriminatory behavior and understand the motives; the third and fourth sections investigated hygienists' scientific knowledge of HIV–related problems and the precautions normally used in the office to prevent cross infections.
Results: Out of the 1,247 questionnaires that were delivered to hygienists, 287 of them (23%) were completed and returned within a 6 month period. Of the 287 hygienists who participated, 17 (5.9%) admitted having denied treatment to HIV infected individuals.
Conclusions: Our findings highlight the existence of episodes of discrimination by some hygienists towards HIV infected individuals. From clinical point of view, this discriminatory behavior may expose the dental health care workers and their patients to a greater risk of cross infection.

438
Ref no: EUABS064369
A comparison between attitudes of malaysian dentists and periodontists in smoking cessation interventions
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Objectives: To compare attitudes of Malaysian government dentists (GDs) and periodontists with regards to i) beliefs and practices to patient's smoking cessation interventions (SCI) and ii) knowledge on smoking effects on oral and periodontal health.
Methodology: Self-administered postal questionnaires were sent to all Malaysian periodontists and GDs from four Malaysian states. Data collected was analyzed using chi-square test.
Results: Eighty-two percent GDs and 56% periodontists responded. 88.9% periodontists and 19.1% GDs routinely recorded patient's smoking status at first visit ($P < 0.001$). More periodontists (83.3%) as compared to GDs (34.7%) counsel patients who smoke on SCI ($P < 0.001$). In techniques and tools for SCI, 64.7% periodontists and 11.3% GDs followed-up SCI with patients ($P < 0.05$). More periodontists (33.3%) compared to GDs (4.2%) described themselves as being very committed to patients' SCI ($P < 0.001$). Limitations faced by GDs in SCI were due to insufficient time (82.6%) and lack of counseling skills (69.9%) ($P < 0.005$). 50.0% periodontists and 23.7% GDs ($P < 0.05$) as well as 35% younger graduates ($P < 0.005$) did not agree that smoking increases gingivitis.
Conclusion: Periodontists routinely record smoking status at first visit, counsel, follow-up patients and feel very committed in patients' SCI. Limitations faced by GDs, were insufficient time and lack of counseling skills. More periodontists and younger graduates stated that gingivitis decreased with smoking.

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Ref no: EUABS064685
Oral health attitudes and behaviour among dental students in Turkey
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Aim: To determine the differences in oral health attitudes and behaviour between preclinical and clinical dental students in Turkey.
Subjects and methods: The HUDBI questionnaire was distributed among 1022 dental students.
Results: The response rate was 75%. Significantly higher (P = 0.00) preclinical students, compared with clinical ones, worry about colour of their teeth, are bothered by the colour of their gums, put off going to the dentist until they have a toothache; think that their teeth are getting worse despite their daily brushing, it is impossible to prevent gum disease with toothbrushing alone, and they cannot help having false teeth when they are old. The preclinical students also significantly (P = 0.00) more frequently agree on that their gums tend to bleed when they brush their teeth, they have never been taught professionally how to brush, and they don't feel they have brushed well unless with strong strokes. However, the clinical students who brush each of their teeth carefully, think that they can clean their teeth without using toothpaste, have had their dentist tell them that they brush very well, have used a dye to see how clean their teeth are was higher ($P = 0.00$) than preclinical ones. The HU-DBI score of clinical students (7.5 ± 1.9) was significantly ($P = 0.00$) higher than preclinical ones (6.0 ± 1.9).
Conclusion: Dental students need comprehensive preventive dentistry courses in their early preclinical years to change and to improve their self-care regimes.

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Ref no: EUABS063777
Diagnosis and antibiotic treatment of chronic periodontitis in the southern Estonia
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Aim: The research was focused on determination of the involvement of dental profession in the diagnosis and treatment of periodontitis. We analyzed prescribed systemic medicine specter and the susceptibility patterns of anaerobes isolated from clinical materials and compared it to the susceptibility patterns of periodontitis isolates.
Methods: The source data contained prescriptions for chronic periodontitis extracted from the database of Estonian Health Insurance Fund, and information about the samples from the Tartu Univ. Clinics.
Results: The prescription of antibiotics was following: broad-spectrum penicillin's 40.7%, metronidazole 19.5%, linkosamides 24.8%, and β-lactam/ β-lactamase inhibitor combinations 10.3%.

The prescriptions of systemic antibiotics were in positive correlation with performed microbiological analyses. A total of 1059 strains of anaerobic bacteria (*Bacteroides spp*. 44.5%, *Prevotella spp*. 22.7%, *Peptostreptococcus spp*. 13.6%, *Fusobacterium spp*.12.3%) were isolated from clinical materials. The frequency of beta-lactamase production and resistance to benzylpenicillin was relatively high, but beta-lactam and beta-lactamase inhibitor combinations were effective against almost all anaerobic isolates.
Conclusions: Present study shows that the number of dental profession involved in diagnosing and treating periodontitis increases. The isolated anaerobes were susceptible to the majority of antimicrobial agents tested.

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Aggressive periodontitis (AGP) and low memory B cells – a state of immunodeficiency?

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The aim was to elucidate a connection between periodontal condition in patients with AgP and their state of immunodeficiency.10 females (18–46 years) were included in the study. 18 ml of peripheral blood were collected to analyse (FACS) the composition of peripheral B cells (IgM, IgD, CD19, CD21, CD27, CD38), the level of serum IgM, IgG, IgA and their subclasses and the production of IFNγ and IL-4 by $CD4^+$ and $CD8^+$ T lymphocytes (intracellular cytokine staining). The production of IFNγ, IL-4, IL-10, IL-1β, IL-8 and RANTES (PBMC) upon stimulation with LPS, *E. coli*, tetanus toxoid, pneumococcal cell wall polysaccharides and mumps virus lysate (ELISPOT) as well as B cells from 8 patients (CD40) and their IgG and IgA production were analysed. The frequency of infections and need for antibiotics were asked. The results were: reduction of switched memory B cells (IgM^-, IgD^-, $CD27^+$, 9/10 patients), normal numbers of naïve, IgM^+ memory, transitional and activated B cells, normal Serum levels of IgM, IgG, IgA and subclasses, normal amounts of secreted IgG and IgA, lowered amounts of IL-4 in $CD4^+$ (9/10 patients) and $CD8^+$ T lymphocytes (8/10 patients), highly elevated IL-8 responses to LPS and mumps virus lysate in all patients, severely upregulated production of IL-1β upon stimulation with LPS and tetanus toxoid (6/8 patients).The elevated levels of IL-1β and IL-8 and the lowering of IL-4 are able to trigger a pro-inflammtory circle that attracts lymphocytes to local pouches of AgP.

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Ref no: EUABS063929

Prevalence and severity of periodontal disease among Iraqi twin population

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The aims of this study were to determine the prevalence and severity of periodontal disease for four clinical parameters plaque index, gingival index, periodontal pocket depth and attachment loss among twins, and to compare between monozygous and dizygous twins, and to evaluate the degree to which monozygous and dizygous twins are concordant for four clinical parameters. Sample consisted of 75 pairs of twins reared together; these samples were selected from different cities of Iraq. The examination is done by using a graduated Williams's periodontal probe, on portable chair, with using artificial light. The clinical examination include recording plaque index, gingival index, probing pocket depth and attachment loss. The results of the present study have been shown that no significant differences were present between monozygous and dizygous twins in plaque index, gingival index. Significant differences was present in periodontal pocket depth between monozygous and dizygous groups, in monozygous were higher than in dizygous twins.Non significant difference was present between monozygous and dizygous twins in attachment loss. Results from this study have demonstrated that the degrees of concordance for monozygous were higher than in dizygous twins for all the four clinical parameters, there is significance differences present between monozygous and dizygous twins. These findings provide evidence that genetic factors make an important contribution for periodontal disease.

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Ref no: EUABS063936

Halitosis in the population of the city of Bern: an epidemiological study evaluating self-reported and clinical data

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Purpose: The present study evaluates the prevalence of halitosis in the population of the city of Bern, Switzerland, using a standardized questionnaire and clinical examination.
Patients and methods: First, 2000 randomly selected inhabitants of the city of Bern were asked to participate in the study. Of these, 419 (21%) agreed to participate. A standardized questionnaire was filled out by all participants. In the clinical examination, ''objective'' values for halitosis were gathered through two different organoleptic assessments and the measurement of volatile sulphur compounds (VSC). Additionally, the tongue coating and the periodontal screening index (PSI) were evaluated for each participant.
Results: The questionnaire revealed that 32% of all subjects sometimes or often experienced halitosis. Smoking, stress, regular consumption of meat, and tongue cleaning were significantly correlated to the feeling of suffering from halitosis. The organoleptic evaluation (grade 0–5) identified 48 persons (11.5%) with grade 3 and higher. Regarding VSC measurements, 117 subjects (28%) had readings of 75 ppb and higher. Tongue coating and PSI were significantly influencing factors for higher organoleptic scores, tongue coating for higher VSC values.
Conclusion: For one third of the population of the city of Bern, halitosis seems to pose an important oral health problem. Only a weak correlation between self-reported halitosis and either organoleptic or VSC measurements could be detected.

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Ref no: EUABS063963

Effect of CPAP treatment on periodontal parameters

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Obstructive sleep apnea (OSA) is caused by the repeated obstruction episodes of the upper airway. Airflow is absent despite breathing efforts. Patients with OSA can be treated with a mask through which continuous positive airway pressure is provided. This form of treatment is called continuous positive airway pressure (CPAP), and is the most common effective nonsurgical treatment of sleep apnea. The purpose of this study was to evaluate the gingival conditions in these patients. Probing pocket depth,

plaque index, gingival index and recession/gingival overgrowth values of eleven male patients with OSA were recorded before and one month after CPAP treatment. Differences were analyzed with Wilcoxon signed ranks test. Upper anterior labial and palatinal mean gingival index values were significantly reduced from baseline (1.13 ± 0.4 versus 0.82 ± 0.47 and 1.13 ± 0.4 versus 0.77 ± 0.31) ($P < 0.05$). Our results demonstrated that CPAP treatment improved gingival index without any change in plaque index values.

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Ref no: EUABS064270

Aggressive periodontitis and low memory B cells – a state of immunodeficiency?

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Aim: To study the possible role of immunodeficiency in patients with aggressive periodontitis.
Methods: Ten females (18–46 years) were included in the study. Peripheral blood was collected to analyse the composition of B cells (FACS), serum IgM, IgG, IgA and their subclasses and the production of IFNγ and IL-4 by T lymphocytes (intracellular cytokine staining). The production of IFNγ, IL-4, IL-10, IL-1β, IL-8 and RANTES (PBMC) upon stimulation with LPS and other antigens (ELISPOT) as well as IgG and IgA production of stimulated B cells from 8 patients (CD40 system) were analysed. The frequency of infections and need for antibiotics were asked.
Results: Reduced switched memory B cells in 9 patients, with normal numbers of naïve, IgM^+ memory, transitional and activated B cells, normal levels of immunoglobulins and subclasses, normal amounts of secreted IgG and IgA, lowered amounts of IL-4 in $CD4^+$ (9 patients) and $CD8^+$ T lymphocytes (8 patients), highly elevated IL-8 responses to LPS and mumps virus lysate in all patients, severely up-regulated production of IL-1β upon stimulation with LPS and tetanus toxoid (6 patients).
Conclusion: Lowered numbers of switched memory B cells–characteristics of common variable immunodeficiency syndrome (CVID) – are unlikely to influence immunoglobulin serum levels or clinical anamnesis of our patients. Elevated levels of IL-1β and IL-8 and lowering of IL-4 are more likely to attract lymphocytes to local pockets and to trigger aggressive periodontitis.

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Ref no: EUABS064302

Effect of non-surgical periodontal therapy on metabolic control in patients with type II diabetes mellitus

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The aim of the present study was to investigate the effect of non surgical periodontal treatment on metabolic control in patients with type 2 diabetes mellitus. 40 patients with type 2 DM (Mean HBA1c = 8.72, mean age = 50.29 years with chronic periodontitis) were recruited and randomly assigned into two groups. The treatment group received full-mouth scaling and root planning whereas the control group received no periodontal treatment. Plaque index(PI),Gingival index(GI),Probing depth(PD),Attachment levels(ALs), Fasting plasma glucose (FPG), Glycated hemoglobin (HbA1c), Cholesterol (C), Triglyceride (TG), HDL and LDL were recorded at baseline and 3rd months following the non surgical periodontal therapy. Data were analyzed using t tests. Statistically significant changes could be demonstrated for FPG, HBA1C and all clinical parameters, in the test group. ($P = 0.006$, 0.003, and 0.0, respectively). HbA1c levels in the test group decreased significantly, whereas the control group showed a slight but insignificant increase for this parameter. FPG, GI, PD and ALs increased significantly in control group. ($P = 0.016$, 0.0 and 0.004, respectively). Changes in FPG and HbA1c were significantly different in test group compared with controls ($P = 0.00$ and 0.003, respectively). The results of our study showed that non-surgical periodontal treatment was associated with improved glycaemic control in type 2 patients and could be undertaken along with the standard measures for the diabetic patient care.

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Ref no: EUABS064127

Detection of periodontal pathogens with PCR from subgingival plaque – comparison of two sampling strategies

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Objective: Comparison of detection frequency of periodontal pathogens in patients with aggressive or severe chronic periodontitis using pooled plaque samples from the deepest pockets per quadrant and per sextant.
Methods: In 50 patients with aggressive ($n = 8$) or chronic periodontitis ($n = 42$), subgingival plaque was sampled from the deepest pockets per quadrant (MT4) and per sextant (MT6). Plaque samples were taken using two sterile paper points simultaneously. One paper point from each pocket was pooled with the three other paper points of the pockets (MT4). Subsequently, the remaining 4 paper points were pooled with two paper points from the deepest pockets from the two remaining sextants (MT6). The content of each vial was analysed with PCR (Hain microIDent®, Hain Lifescience, Nehren, Germany) for *Aggregatibacter actinomycetemcomitans* (AA), *Tannerella forsythia* (TF), *Porphyromonas gingivalis* (PG), and *Treponema denticola* (TD). Detection frequency was compared using the Wilcoxon–Test.
Results: The detection frequency of AA (MT4: 12%; MT6: 16%), PG (MT4: 78%; MT6: 80%) and TF (MT4: 88%; MT6: 94%) was higher with MT6 than with MT4. Only for TD (MT4: 92%; MT6: 88%) the detection frequency was higher with MT4. These outcomes were statistically not significant.
Conclusion: The detection frequency of AA, PG and TF was statistically insignificant higher with the sampling method MT6 compared with MT4. This study was funded by Hain Lifescience, Nehren, Germany.

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Ref no: EUABS064087

Serum CRP is elevated in aggressive periodontitis

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Aim: Analysis of serum CRP level and leukocyte counts in periodontally healthy probands (Pro), patients with untreated aggressive (AgP) and chronic (ChP) periodontitis.
Methods: Pro (probing depth [ST] < 3.5 mm or < 5 mm without bleeding [BOP], BOP < 10%) ChP (PD≥ 3.5 mm and attachment loss (AL)≥ 5 mm at > 30% of sites; age > 35 years) and AgP (clinically healthy; PD≥ 3.5 mm at > 30% of sites, radiographic bone loss≥ 50% at 2 teeth; age≤ 35 years) were examined clinically (gingivitis, plaque index, PD, AL, BOP) and blood was

sampled of which CRP level (detection limit: 0.01 mg/dl) and leukocyte counts were assessed.
Results: 30 Pro (16 female, 8 smokers), 28 ChP (12 female, 7 smokers) and 14 AgP (10 female, 6 smokers) were analyzed. CRP was different in all 3 groups (CRP: Pro: 0.10 ± 0.12; ChP: 0.12 ± 0.07; AgP: 0.39 ± 0.51 mg/dl [ANOVA: $P < 0.001$]), whereas leukocyte counts were similar.
Conclusion: Serum CRP is significantly elevated in AgP as compared to periodontally healthy probands and ChP. This study was supported by the German Society for Periodontology (DGP) and the German Society of Dental, Oral, and Maxillofacial Medicine (DGZMK).

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Ref no: EUABS064610
Elevated platelet and leukocyte response to oral bacteria in periodontitis
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Background: Periodontitis is associated with an increased risk for cardiovascular diseases. Given the frequent bacteremias in periodontitis patients, we hypothesized that platelets and/or leukocytes from periodontitis patients are more sensitive to stimulation by periodontal pathogens, than cells from controls.
Methods: Flow cytometry analysis was performed to quantify activation of platelets and leukocytes from periodontitis patients ($n = 19$) and controls ($n = 18$), with and without stimulation by oral bacteria. Phagocytosis was assessed by using GFP-expressing *Aggregatibacter actinomycetemcomitans* (*Aa*).
Results: All species of oral bacteria tested had the capacity to activate neutrophils and monocytes; this was similar in patients and controls. In response to some species of oral bacteria, platelets from patients showed increased exposure of P-selectin ($P = 0.027$) and increased formation of platelet-monocyte complexes ($P = 0.040$). Platelet–leukocyte complexes phagocytosed more GFP–Aa than platelet-free leukocytes (for neutrophils and monocytes, in both patients and controls $P < 0.001$).
Conclusions: In periodontitis, increased platelet response to oral bacteria is paralleled by increased formation of platelet-leukocyte complexes with elevated capacity of bacterial clearance. We speculate that activated platelets and leukocytes in periodontitis might contribute to elevated atherothrombotic activity, and subsequently, to an increased risk for cardiovascular events.

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Ref no: EUABS064582
Treatment of periodontitis with scaling and/or root planing during pregnancy and its effect on preterm birth rate: a meta-analysis
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Objective: Examine whether treatment of periodontal disease during pregnancy with scaling and/or root planing reduces preterm birth incidence.
Design: Systematic review and meta-analysis of randomly controlled trials assessing treatment with scaling and/or root planing against no treatment during pregnancy. **Data sources** Medline, Cochrane Library and ISI Web of Science through November 2008 without language restriction.
Results: Seven randomized controlled trials were considered eligible. Two thousand six hundred sixty three (2663) pregnant women were allocated to periodontal disease treatment with scaling and/or root planning or no treatment. Treatment resulted in significantly lower preterm birth rate OR 0.55 (95% CI 0.35–0.86, $P = 0.008$); reduction of low birth weight infants was of borderline statistical significance OR 0.48 (95%CI 0.23–1.00, $P = 0.049$), while no difference was found for spontaneous abortion/stillbirth OR 0.73 (95%CI 0.41–1.31, $P = 0.292$). Patients with a lower rate of previous preterm birth or low birth weight infants and patients with less severe periodontal disease, as defined by probing depth or bleeding on probing site, were more likely to benefit from treatment.
Conclusions: Treatment of periodontal disease during pregnancy with scaling and/or root planing is associated with a significant reduction of preterm birth. Results from ongoing trials will clarify whether treatment with scaling and/or root planning during pregnancy should be recommended.

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Ref no: EUABS064622
The relationship between periodontal treatment and circulating levels of C-reactive protein and interleukin-6
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Background: Periodontitis may have a modulating role in systemic disease. One of the explanatory mechanisms is the concept of periodontitis having effects by the systemic dissemination C-reactive protein (C-rp) and Interleukin-6 (IL-6).
Purpose: The effect of two episodes of non-surgical periodontal treatment, on smoker and never smoker patients with moderate to severe periodontal disease on circulating levels of C-rp and IL-6. Materials and Method: Twenty subjects (aged 18 and above) diagnosed with moderate to severe chronic periodontitis and who conformed to the inclusion criteria were recruited .At baseline a full medical, dental and social history was obtained in addition to clinical periodontal assessment. Non surgical periodontal therapy was carried out in two consecutive days. Venous blood samples were taken at baseline and one hour post periodontal therapy on both the treatment visits. IL- 6 and C-rp was assayed using commercially available test kits as one batch.
Results: There were statistically significant increases in levels of circulating IL-6 ($P = 0.0001$) and C-rp ($P = 0.001$) from baseline to 24 hours post therapy and the level of increase was more marked in the never smokers compared to current smokers.
Conclusion: Within the limitations of this study, two episodes of nonsurgical periodontal therapy carried out on two consecutive days on patients with moderate to severe untreated chronic periodontitis led to an elevation of circulating levels of IL-6 and C-rp.

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Ref no: EUABS064357
The biological effects of non-surgical periodontal therapy on tumor necrosis factor-alpha levels in diabetics and healthy individuals
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Background: Diabetes mellitus and periodontitis are chronic infections which involve inflammatory cytokines like tumor necrosis factor-α. To date, there are minimal studies to show if periodontal therapy will reduce the systemic level of TNF-α in diabetics with chronic periodontitis.

Aims: To investigate the association of TNF-α with the extent and treatment of periodontal disease in diabetics and non-diabetics; and to compare the effects of intensive and conventional periodontal therapy.
Materials and methods: This was a randomized single-blind clinical trial. 40 subjects were divided into diabetics and healthy groups and then subsequently randomized to receive either an intensive or conventional non-surgical periodontal therapy. All subjects were examined at baseline and 3 months. Each visit included a full-mouth periodontal examination and taking of fasting venous blood sample.
Results: Both diabetics and non-diabetics showed significant reduction in the amount of TNF-α (> 8.1 ng/l) and IL-6 (> 9.7 ng/l). TNF-α had a significant positive correlation with supragingival calculus, IL-6 and IL-1β. Both intensive and conventional periodontal therapies were able to produce similar periodontal improvements.
Conclusion: This study showed the beneficial effects of non-surgical periodontal therapy in reducing serum pro-inflammatory cytokines (TNF-α) and improving the periodontal health of diabetics and non-diabetics. Diabetics had similar healing response as non-diabetics.

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Ref no: EUABS064324
Evaluation of relationship between periodontal diseases and plasma fibrinogen
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Background: Fibrinogen is one of the acute-phase proteins whose levels are elevated during periodontal disease. The purpose of this study was evaluation of relationship between periodontal disease and plasma fibrinogen level.
Materials and methods: In this study, 30 patients with periodontitis compared to 30 periodontal healthy subjects (27 men and 33 women). The studied periodontal parameters included PPD, CAL and BOP. Furthermore, age, sex, education, oral health condition and smoking were studied. To determine the amount of fibrinogen patients were referred to the lab.
Results: After the statistical analysis of data, the results were as follow: 1) The amount of fibrinogen in the test group (312/24 mg/dl) was significantly higher than the control group (282/32 mg/dl). 2) With the increase of CAL, the amount of fibrinogen also increased. 3) The amount of fibrinogen was higher in people with higher BOP. 4) With increase in the depth of pocket, the amount of fibrinogen is increased too, but this increase was not significant. 5) Education, oral health condition showed a reverse proportion with the plasma fibrinogen.
Conclusion: Periodontal disease can increase the amount of plasma fibrinogen which might be due to their infective characteristics.

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Ref no: EUABS064463
Periodontal treatment in stages 3/4 chronic kidney disease patients with severe periodontitis
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The aim of this cross-sectional study was to assess the effect of periodontal treatment on plasma levels of C- reactive protein (CRP) and on the progression of glomerular filtration rate (GFR) in stages 3/4 chronic kidney disease (CKD) patients with severe periodontitis. 21 patients (15 men, 6 women, mean age = 61.7 ± 9) enrolled for treatment at an output CKD clinic were selected for the study. Periodontal examination included: (1) plaque index, (2) bleeding on probing (BOP), (3) probing pocket depth (PPD) and (4) probing attachment loss (PAL). The inclusion criteria were: (a) patients treated at least for 6 months at this clinic, (b) calculated GFR higher than 20 and lower than 60 mm/min/1.73 m^2 and (c) at least 4 sites with PPD≥ 6 mm and PAL≥ 5 mm. Non surgical periodontal therapy was performed. Patients were recalled 3 months after periodontal therapy for reassessment of the periodontal parameters and to repeat the blood examination. Paired *t*-test and Wilcoxon rank test were used to compare parametric and non-parametric data, respectively. Mean % of sites with plaque, BOP, PPD≥ 6 mm and PAL≥ 6mm significantly reduced 3 months after periodontal treatment. Mean values of CRP decreased ($P = 0.09$) and the mean value of GFR increased from 41.6 (± 13.2) to 44.7 (± 16.4) ml/min/1.73 m^2, after periodontal treatment in patients with severe periodontitis ($P < 0.05$). In conclusion, periodontal treatment increased GFR in stages 3/4 CKD patients with severe periodontitis.

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Ref no: EUABS064540
Serum IL-10 concentration in relation to the extent of periodontal disease
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Aim: Our aim was to study the association between the serum level of the anti-inflammatory cytokine IL-10, and the extent of periodontal disease.
Material and methods: A total of 171 subjects (aged 42 ± 13 years) participated. Of these 80 were diagnosed with type 1 diabetes mellitus. Probing pocket depth (PPD) and attachment level (AL) were examined clinically and alveolar bone level (BL) was measured on ortopantomographs. IL-10 level in serum was measured using an ELISA assay. The associations between serum IL-10 level (the outcome variable) and the extent of periodontal disease (% of sites with PPD≥ 4 mm, AL≥ 4 mm and BL≥ 4 mm) were analyzed using multivariate regression analyses.
Results: The mean serum level of IL-10 (± SD) in subjects presenting no sites with PPD≥4 mm was 18.4 ± 13.3 pg/ml and for those with no AL≥4 mm 17.2 ± 10.1 pg/ml. Subjects presenting frequent PPD≥ 4 mm (> 32% of sites) and AL≥ 4 mm (> 20% of sites) had mean IL-10 levels of 13.7 ± 8.3 pg/ml and 11.6 ± 4.6 pg/ml, respectively. After adjusting for age, gender, BMI, smoking and diabetes, a statistically significant association was found between IL-10 serum concentration and the extent of PPD≥4 mm ($P = 0.009$), AL≥ 4 mm ($P = 0.002$) and BL≥ 4 mm ($P < 0.001$).
Conclusion: An inverse dose-dependent effect of the percentage of periodontally affected sites on serum IL-10 concentration in the present subjects is indicative of a protective role of IL-10 in periodontal disease.

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Ref no: EUABS064544
Salivary cytokines: IL-1 β, IL-4 and TNF-α in patients with associated periodontitis and rheumatic arthritis
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Aim: Cytokines, produced by host cell, play an important role in the pathogenesis of both rheumatic arthritis (RA) and chronic

periodontitis (CP). This study was conducted to evaluate salivary interleukin (IL)-1-beta (β), IL-4 and tumour necrosis factor-alpha (TNF-α) concentrations in patients with associated generalized chronic periodontitis (GCP) and seropositive (+) or seronegative (-) RA.

Material and Methods: Two groups of patients associated with GCP and RA, age 27–53 were established: 21 $GCPRA^+$ patients (group 1), 16 $GCPRA^-$ patients (group 2). Sixteen individuals healthy were served as control. Unstimulated whole saliva samples from study subjects were collected, aliquoted, then frozen until assayed. The cytokines concentrations were determined by the quantitative sandwich enzyme-linked immunosorbent assay technique. For each patient, clinical parameters were recorded and radiographs were obtained.

Results: A significant increase in the IL-1-β, IL-4 and TNF-α concentration existed in the samples obtained from the two groups of patients compared to the control subjects ($P < 0.05$).

Conclusions: In summary, patients with severe GCP are associated with RA^+; in contrast, patients with early GCP are associated with RA^- that has not been previously reported. Therefore, IL-1-β, IL-4 and TNF-α may be relevant in the progression of both CP and RA. In addition, increased cytokines concentrations are closely associated with the patients' status of periodontal disease.

457
Ref no: EUABS064486

The expression and analysis of serum IL-19 in patients with chronic obstructive pulmonary disease and periodontitis

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Objective: To compare the concentration of serum IL-19 in patients with COPD (Chronic Obstructive Pulmonary Disease) and chronic periodontitis: probe into the relationship of periodontal disease and COPD.

Methods: Fifty-one patients with COPD, sixty-one patients with periodontitis, ninety-seven patients with both COPD and periodontitis and twenty-two healthy people were included in the study. The blood serum IL-19 level was detected by ABC-ELISA.

Results: After adjustment for gender, age and pack years, the differences in IL-19 expression were significant between both periodontitis group and non-periodontitis group, COPD group and non-COPD group ($P < 0.05$). The group suffering from both two diseases did not express higher serum IL-19 than the groups which periodontitis or COPD existing alone.

Conclusion: Serum IL-19 level increased in both periodontitis patients and COPD patients, and IL-19 might associate with the pathogenesis of periodontitis and COPD.

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Ref no: EUABS064490

Influence of PPARg2 Pro12Ala polymorphism on maternal periodontal disease and preterm birth

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Background: Although recent studies suggest the association between maternal periodontal disease and the risk of preterm birth, the information available is controversial. Peroxisome proliferator-activated receptor-gamma2 (PPARg2) is a member of the nuclear hormone receptor superfamily and a ligand-dependent transcription factor. PPARg2 plays a role in the regulation of lipid, inhibits the activation of transcription factors, and was reported to have a repressive role for periodontal disease. Recently, genetic polymorphism of PPARg2 that causes an amino acid substitution, located in exon B (Pro12Ala) was reported to reduce ability to transactivate responsive promoters. In this study, we tested whether the PPARg2 Pro12Ala polymorphism was associated with periodontal disease and/or preterm birth.

Methods: Genomic DNA was isolated from venous blood of Japanese pregnant woman (term birth: 72, preterm birth: 58). Pro12Ala was determined by PCR-RFLP analysis. Within 5 days after labor, clinical periodontal parameters were evaluated and periodontopathic bacteria from subgingival plaque were detected by species-specific PCR.

Results: PPARg2 Ala allele was associated with the severity of periodontal disease (BOP, CAL, PD, GI) ($P < 0.05$). However, there was no association between preterm birth and prevalence or severity of periodontal disease.

Discussion: Our study suggested that the Pro12Ala polymorphism might be a risk marker of periodontal disease in Japanese pregnant women.

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Ref no: EUABS064725

Up-regulated cathelicidin serum levels in generalized aggressive periodontitis

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Objective: Periodontal infections have been associated with the initiation and progression of atherosclerosis. Cationic antimicrobial peptides (AMPs) such as human β-defensin-2, -3 (hBD-2, -3) as well as cathelicidin (LL-37) are components of the innate host immune response which are expressed against bacterial infection and consequent inflammation, and therefore might be protective against systemic effects by periodontal pathogens. The present study investigates AMP protein expression in the serum of generalized aggressive periodontitis (GAgP) patients compared to controls.

Study design: Serum from 31 GAgP patients as well as from 42 healthy controls was analyzed for hBD-2, hBD-3, LL-37 by ELISA. In addition, CRP, lipid levels as well as expression of the chemotactic cytokine IL-8 was measured.

Results: In the serum of GAgP patients significantly ($P < 0.001$) higher levels of LL-37 were found (13.87 ± 19.62 ng/ml) compared to controls (8.93 ± 6.23 ng/ml). No differences were found in the expression of hBD-2 und -3. Significantly higher levels of CRP, triglycerides, total cholesterol and LDL-cholesterol and significantly lower serum levels of HDL-cholesterol were measured in GAgP patients. Conclusions Present data demonstrate higher protein expression of cathelicidin in the serum of GAgP patients compared to controls. Whether higher AMP levels influence the risk of atherosclerosis warrants further studies, Supported by DFG GK 325, habilitation stipend, Charité to N.P.

460
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Spinal abscess in advanced periodontitis patients – report of 6 cases

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Objective: Report of 6 advanced periodontitis patients with spinal ($n = 6$) abscess.

Method: In 6 patients (3 female, 3 male) with advanced periodontitis and multiple systemic diseases spinal pathology was diagnosed by magnetic resonance imaging or computer tomography. To confirm the diagnosis a microbiological and histological sample was taken during surgery. One week after surgery subgingival bacteria and clinical parameters were evaluated. The microbiological analysis was performed using real-time PCR and radiologic examination was based on existing radiographs.
Results: Clinical and radiographic examination showed advanced horizontal bone loss and deep periodontal pockets in all patients. Only in one patient *Porphyromonas gingivalis, Micromonas micros, Prevotella intermedia, Dialister pneumosintes, Campylobacter rectus* and *Aggregatibacter actinomycetemcomitans* were detectable in high concentrations in the abscess region. 3 patients could be rehabilitated after surgery considering their medical history. Unfortunately 3 patients died at a later date.
Conclusion: In the examined patients periodontal infection seems to be a rare cause of spinal infection.

461
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Transforming growth factor-β1 gene expression and cyclosporine a – induced gingival overgrowth

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The relationship between cyclosporine A (CsA) – induced gingival overgrowth (GO) and transforming growth factor – beta1 (TGF-β1) is not fully explained. TGF- β1 is known as a key fibrotic cytokine. The results of investigations on influence of CsA treatment on TGF-β1 levels are equivocal. Low plasma TGF-β1 concentration is probably the risk factor of GO in transplant patients.
Aims: The aim of this study was to evaluate the influence of different immunosuppressive treatment modalities on TGF-β1 gene expression and the relationship of the expression with GO in renal transplant recipients.
Material and methods: The study included 66 CsA-treated renal transplant patients (35 with and 31 without GO) and 30 tacrolimus treated transplant patients (without GO). TGF-β1 mRNA expression was measured using real-time quantitative PCR assay.
Results: The level of TGF-β1 gene expression was insignificantly, by 8% lower in CsA-treated group compared to tacrolimus group and significantly lower in the group with GO (0.949 ± 1.28) compared to patients without GO (1.955 ± 3.94) in CsA-treated recipients. The features describing GO as the incidence, degree (from 0 to 4) and extent (from 30% to 100% dental units), showed higher value in patients with the lower TGF-β1 gene expression.
Conclusion: Low level of TGF-β1 gene expression related to CsA treatment might be considered as a real risk factor for gingival overgrowth.

462
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The IL-11 and IL-17 levels in rheumatoid arthritis patients

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The impaired ratio of Interleukin (IL)-11: IL-17 in chronic periodontitis (CP) patients was shown in our previous study. In this study, we aim to investigate the levels of IL-11, IL-17 and their ratio in Gingival Crevicular Fluid (GCF) of rheumatoid arthritis (RA) patients compared to CP patients. CP (n = 40), RA (n = 30) and healthy controls (HC, n = 20) were included. CP and RA group were divided into two groups (a and b) according to gingival pocket/sulcus depths (PD) (a: PD≤ 3 mm; b: PD≥ 4 mm). For each patient, clinical parameter values were recorded. The GCF samples were evaluated by ELISA for IL-11 and IL-17 levels. The clinical parameter values, the cytokines' total amounts, concentrations and ratio were evaluated. The total amount and concentration of IL-17 were higher in RA-a group than CP-a group ($P < 0.0125$). The total amount of IL-11 and IL-17 were found significantly higher in the RA-b group than the CP-b group ($P < 0.0125$). The total amount of IL-17 was significantly lower in HC group compared with both RA groups ($P < 0.0125$). The cytokine ratios were significantly higher in RA-b group than the CP-b group ($P < 0.0125$) and in HC group than the RA-a group ($P < 0.0125$). None of the clinical parameter values presented significant correlations with the cytokines' total amounts, concentrations and ratios ($P > 0.05$). The balance of the anti-inflammatory cytokine IL-11 and pro-inflammatory cytokine IL-17 might play an important role in periodontal pathogenesis of RA patients.

463
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Evaluating the association between periodontitis and the presence of PF4/Heparin-complex antibodies

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Background: Platelet factor 4 (PF4), a chemokine released from platelets during activation, can complex with negatively charged molecules. The prototype reaction is the formation of PF4/Heparin (Hep) complexes. Hep treated patients can develop antibodies (ABs) against these complexes activating blood clotting and provoking thrombotic complications. These ABs were also observed in non-Hep treated patients. The trigger for this natural ABs is unknown. We hypothesize, that periodontal infection/inflammation may be involved in platelet activation, increased PF4 release with consecutive induction of PF4-complex ABs.
Methods: PF4/Hep-complex ABs (ELISA) were determined in 937 blood donors aged 40–59. A matched (age, gender, smoking, education) case-control study with 40 pairs was conducted. Periodontal status (probing depth (PD) and attachment loss (AL)) was assessed on 4 sites, half mouth. Periodontitis was defined via tertiles (mild, moderate, severe) for mean PD and AL. The association between periodontal status and AB-status was analysed with conditional logistic regression adjusting for matching variables.
Results: Positive AB-status was significantly associated with periodontitis, with risk increasing for severe mean PD (OR = 5.68 [95% CI 2.17–14.84]), and severe (OR = 3.95 [95% CI 1.59–9.82]) and moderate (OR = 4.60 [95% CI, 1.86–11.40]) mean AL.
Conclusion: Periodontitis is associated with presence of natural anti-PF4/Hep ABs. This may increase the risk for cardiovascular disease.

464
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Evaluating the association between periodontitis and the presence of PF4/Heparin-complex antibodies

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465
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Periodontal situation and genetic risk for periodontitis in patients with rheumatic diseases – first results

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This study evaluated the periodontal situation and the genetic risk for periodontitis in patients with rheumatic diseases. 71 patients (30 female, 41 male, age 48.9 ± 8.5; first diagnosed 7.9 ± 8.7 years ago (max: 46 years; min: 0.5 year)) suffering from a rheumatic disease (rheumatic arthritis: 66; M. Bechterew: 5) were examined. Dental examination covered DMF-T, PSI, and smears of the buccal mucous membrane for genetic risk determination (IL1–Polymorphismen; Genotyp-Grad 1–4; GenoType® PST®plus; Hain Lifescience, Germany). Mean DMF-T was found at 16.9 ± 6.2 (DT: 0.6 ± 1.2; MT: 6.4 ± 6.4; FT: 10.0 ± 4.9). 66 patients had more than 7 teeth, 1 was edentulous, and none was periodontally healthy (PSI 0). 18 patients showed a max. PSI score of 1 or 2 (max. PSI score of 3:19; max. PSI score of 4: 33). 25 patients were categorized genotyp 1 (no increased genetic risk). 16 resp. 8 patients were genotyp 2 (increased genetic risk) or 3 (strongly increased genetic risk). 22 patients had a reduced genetic suppression of inflammation (grade 4). 8 patients with PSI score 1, and 2 were categorized genotype 1, 6 were genotype 2 or 3, 4 were genotype 4. Patients with PSI score 3 or 4 had the following genotypes 1: $n = 17$; 2 or 3: $n = 18$; 4: $n = 17$; the edentulous patient was genotype 4. The majority of patients examined had an increased need for periodontal treatment and an increased genetic risk for periodontitis. No final evaluation for a possible association between genotype and periodontal diagnosis could be made.

466
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Immunophenotype T cell lymphocyte in patients with associated periodontitis and rheumatic arthritis

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Aim: The relationship between rheumatic arthritis and the progression of chronic periodontitis is controversial. The aim of the present study was to analyse the phenotypic properties of peripheral blood T cell in patients with associated generalized chronic periodontitis (GCP) and seropositive (+) or seronegative (-) RA.

Material and methods: Two groups of patients associated with GCP and RA, age 27–53 were established: 21 $GCPRA^+$ patients (group 1), 16 $GCPRA^-$ patients (group 2). Sixteen individuals healthy were served as control. From all the subjects' peripheral blood was collected. Immunohistochemistry was performed using monoclonal antibodies against CD4 and CD8 antigens. For each patient, clinical parameters were recorded and radiographs were obtained.

Results: A significant decrease in the CD4+/CD8+ ratio existed in the samples obtained from the two groups of patients compared to the control subjects ($P < 0.05$). Conclusions: The results of this study provide further evidence of a significant association between periodontitis and RA. In summary, patients with severe GCP are associated with RA^+, in contrast, patients with early GCP are associated with RA^- that has not been previously reported. In addition, the mechanism of how T-cell function contributes to increase the severity of periodontal breakdown in $GCPRA^-$ and $GCPRA^+$ patients needs to be investigated further.

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Periodontal disease status in patients with renal impairment in chronic hemodialysis (IRCH) and healthy patients – cross-sectional study

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Background: The maintenance of oral health in chronic renal insufficient patients (CRF) on dialysis may be complex, given the prevalence of systemic diseases. These patients seem to be predisposed to a variety of dental problems such as periodontal disease, in enamel defects, premature tooth loss and dry mouth.

Aim: The aim of this cross-sectional study was to determine whether there are differences between patients with renal impairment in chronic hemodialysis and patients who do not suffer from this kidney condition on the prevalence of periodontal disease. At a later stage relate the results about the severity of PD with pharmacotherapy prescribed in the group IRCH.

Material and methods: We included 101 subjects in the study, 50 attending consultations of Medicine and Dentistry and 51 patients IRCH, which held a dialysis clinic. For the collection of data was conducted the following tests: CPOD, depth of probing and plaque index, applied to periodontal disease index.

Results: The IRCH group showed higher PD in moderate level (3–6 mm), in all places of teeth index: DV (105), V (42), MV (99), DL (130), L (66), ML (111), compared with the PCD group, which the frequencies of moderate PD were: DV (26), V (4), MV (20), DL (49), L (25); ML (29). Also severe PD has been more frequencies in IRCH group.

Conclusion: It was found that there is higher prevalence of PD and lower prevalence of decayed teeth in group IRCH. However, there is need for more studies to confirm the prevalence found.

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Is periodontal disease a risk factor for preterm low-birth weight?

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The periodontal disease has been shown to be associated with premature birth and restriction of fetal growth. The aim of our study was to determine the relationship between periodontal disease (PD) and preterm low-birth weight (PLBW). Women that gave birth at the Prishtina University OB/GYN Department were examined for periodontal assessment and obstetrical data were collected from their delivery history. The clinical assessment of PD was based on the modification of the criteria established by Machtei, by measuring probing pocket depth and clinical attachment level, thus forming the group with PD and the group without PD. Women with confirmed the risk factors for PLBW were excluded. The determination of PLBW was based on the WHO criteria. The prevalence of periodontal disease of 200 parturients was 28.5%, with prevalence of preterm birth 20% and of low-birth weight 20.5%. After adjustment for birth weight and gestational age, the PD prevalence was 42.4% in the PD group, and 20.4% in the no-PD group. The correlation between PD and PLBW tested with chi-square test showed statistical significance ($P < 0.01$). Odds ratio showed that women with PD are at risk 2.88 times more to have PLBW than women with healthy periodontium. Mean birth weight and gestational age were significantly lower, respectively shorter, in the group of women with PD compared to women without PD. Results of this study showed that periodontal disease might be considered as a risk factor for preterm low-birth weight

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Clinical evaluation and comparison of periodontal status in women with premature and full term delivery

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Introduction: According to many studies, periodontal disease can be a risk factor for preterm birth (PB).A case-control study was carried out to examine if periodontal disease could be a risk factor for adverse pregnancy outcome.
Material and methods: Case group consisted of 44 women with PB & PB was defined if a woman had premature rupture of membrane (PROM) & delivery before the 37th of gestational week.Control women consisted of 44 women who had delivery after the 37th of gestational week.Postpartum women without any systemic diseases were examined for periodontal indices(CPI) & pocket depth within 1–3 days after delivery. CPI included bleeding, gingival, plaque & calculus indices .Demographic & pregnancy outcome were also collected. Women were examined for known risk factors of PB & those who had them or had Hx of antibiotic usage or periodontal Tx at previous 2 months were excluded.
Results: No evidence of significant association was found between PB & periodontal disease during pregnancy. Plaque index was higher in case than control group (P-value = 0.009).
Conclusion and discussion: The results of this study indicate that there is no association between periodontal health of pregnant women and improvment of pregnancy outcome .As the prevalence of chronic periodontitis in this group of patients (17–35 years) is not very high, so low prevalence of periodontitis in both groups is exapected, thus there could not be any adverse effect on pregnancy outcome.

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Gingival manifestations of the menopause

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Background: The sex hormones may affect the health state of the woman starting from puberty, continuing during pregnancy, until after menopause. Due to variation of hormonal levels, certain local and general pathological changes may occur. The sex hormones may influence periodontal health – producing, for example, gingivitis – and reduce the resistance to dental plaque.
Objective: Defining the correlations between periodontal changes and the beginning of menopausal period, in the presence of HRT (hormone replacement therapy) and osteoporosis or not.
Methods: A number of female patients, aging 45–66, were both clinically and para-clinically investigated, recording microscopic and macroscopic aspects of the gingiva. Hematoxilin–eozin colorations were used to develop epithelial morphology.
Results: Association between menopause and osteoporosis lead to involutive aspects of the periodontium, in the absence of the HRT.
Conclusions: Fluctuating levels of sex hormones may have direct and indirect effects on histological balance of the oral epithelium. During menopause, due to reduced levels of estrogen and progesterone an oral discomfort may occur explained by the altered architecture of the gingival epithelium.

471
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The periodontal status of pre-dialysis chronic kidney disease and maintenance dialysis patients

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Background: Periodontitis contributes to generalized inflammation and development of systemic diseases. Its extent in maintenance haemodialysis (HD) patients is disputable and not known in continuous ambulatory peritoneal dialysis (CAPD) and pre-dialysis chronic kidney disease (CKD) patients.
Methods: 106 patients (35 on HD; 33 on CAPD and 38 pre-dialysis CKD) from north-eastern Poland were enrolled. Gingival index (GI), papillary bleeding index (PBI), plaque index (PI), loss of clinical attachment level (CAL), and community periodontal index of treatment needs (CPITN) were determined according to WHO recommendations.
Results: Average values of the indices in HD, CAPD, pre-dialysis CKD, advanced periodontitis and general population subjects were: GI–1.37, 0.95, 1, 2, and 1; PBI–1.45, 0, 0, 2.20, and 1; PI–2.05, 1.59, 1, 2, and 1; and CAL loss–5.11, 3.47, 2.50, 4.68, and 1.40 mm, respectively. CPITN, analyzed separately as community periodontal index and periodontal treatment needs, further indicated a high severity of periodontitis in all renal failure groups as compared to general population subjects. The disease was most advanced in maintenance HD patients – comparably to full-symptomatic form of periodontitis; then it was successively diminished in CAPD and pre-dialysis CKD subjects.
Conclusions: Periodontal disease is prevalent, severe and under-recognized in renal failure patients. Prophylaxis and early dental treatment should be intensified in these subjects.

472
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Change in whole blood count from patients with generalized aggressive periodontitis after non-surgical therapy

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Aim: Periodontal bacteria are known to invade the systemic circulation. The purpose of this study was to examine and compare the systemic effect of a non-surgical therapy on whole blood count in generalized aggressive periodontitis (GAP) patients and healthy controls (C).
Materials and methods: Ten GAP patients (mean age: 27.6 years) and ten periodontal healthy C (mean age: 24.6 years) were included in this study. All subjects were otherwise healthy and non smoker. Ten GAP patients received scaling and root planing under local anaesthesia and were clinically monitored every 2 months for 6 months. The clinical parameters, including probing depth (PD), bleeding on probing (BOP), and attachment level (AL) and mobility were recorded at baseline, 2 and 6 months after treatment. Accompanying clinical evaluation blood samples were taken to analyse the whole blood counts. For statistical analysis non-parametric tests were used.
Results: At baseline, whole blood counts revealed leukocytosis with neutrophilia in the GAP patients. Following periodontal treatment white blood cell (WBC) counts and neutrophil counts decreased significantly in GAP patients. Baseline WBC counts were higher in GAP patients compared to periodontal healthy C.
Conlusions: Low grade systemic inflammation and bacteremia occur in periodontal disease. The results indicate that non-surgical therapeutical intervention may have a systemic effect on the blood count in GAP patients.

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Periodontal disease is associated with decreased endothelial function

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Background: Severe periodontitis may be associated with increased cardiovascular risk. In this study, we investigated the association between periodontitis and endothelial dysfunction measured by flow-mediated dilatation (FMD). A decreased FMD indicates an early stage of atherosclerosis.
Methods: The study population comprised 1285 probands (643 males) aged 25–85 years recruited from the 5-year-follow-up of the Study of Health in Pomerania. Measurements of FMD were performed in the supine position using standardized ultrasound techniques. Periodontal status was assessed by tertiles of mean attachment loss (AL; mild-moderate-severe) and mean pocket depth (PD; mild-moderate-severe). Analyses were adjusted for age, sex, smoking status, education, body mass index, and diastolic and systolic blood pressure.
Results: With increasing AL categories, adjusted mean FMD values decreased from 5.85 to 4.62% ($P < 0.05$). In sex-stratified analyses, the inverse association between severe AL and FMD attained statistical significance only in women ($P < 0.05$). Moderate and severe PD had lower FMD values relative to mild PD (5.36 versus 5.20 versus 4.78%; $P < 0.05$, PTrend < 0.001).
Conclusions: Accumulated (AL), but also acute (PD) periodontitis was inversely associated with endothelial dysfunction. Our results contribute to the current discussion on the risk association between periodontitis and cardiovascular diseases (CVD), and support the importance of periodontitis already at an early stage of CVD.

474
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Possible relationship between plasma fatty acids profile and periodontitis in men

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Background: The circulating levels of plasma fatty acids may be considered an important cardiovascular biomarker.Periodontitis is a chronic, inflammatory, destructive disease that affects the supporting tissues of the teeth and is associated with enhanced concentration of inflammatory markers. The aim of this investigation was to explore if periodontitis influences over plasma fatty acids in men.
Material and methods: A total of 27 subjects (periodontitis = 19; control = 8) were included in this study.Periodontitis was diagnosed as the presence of ≥ 2 teeth with clinical loss attachment ≥ 6 mm and ≥ 1 sites with probing depth ≥ 5 mm.Those participants not fulfilling these criteria were included in the control group.Blood samples were collected and total plasma lipids were extracted into hexane/isopropanol following addition of tridecanoyl acid as internal standard.Gas-liquid chromatography was used to analyze the fatty acids profile.Mann–Whitney test was used to analyze differences between groups.
Results: Total amount of fatty acids, saturated fatty acids, and n-6 polyunsaturated fatty acids were significantly higher in periodontitis group compared with the control group. Monounsaturated fatty acids were not signifincantly different.
Conclusion: Men appear to be susceptible to a putative influence of periodontitis over plasma fatty acids profile, with higher atherogenic risk.

475
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Reverse association between serum HDL and the extent of periodontal disease

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Aim: This study was carried out to analyze the association between serum lipid levels and the extent of periodontal disease.
Material and methods: A total of 172 subjects participated; 80 of them had type 1 diabetes mellitus. The levels of serum high-density lipoprotein (HDL), low-density lipoprotein (LDL) and triglyserides (TRIGLY) were analyzed. Probing pocket depth (PPD), bleeding on probing (BOP), attachment level (AL) and alveolar bone level (BL) were measured. The study population was divided into subgroups by the extent of periodontal disease and comparisons of serum lipid levels were made between the subgroups. The associations between serum lipid levels and the extent of periodontal disease were analyzed by multivariate regression analyses.
Results: Serum lipid levels in subjects with no PPD≥ 4 mm and in those in the highest tertile of sites with PPD≥ 4 mm were as follows: HDL; 1.8 ± 0.5 mmol/l versus 1.4 ± 0.4 mmol/l, LDL; 2.8 ± 1.1 mmol/l versus 2.4 ± 0.8 mmol/l and TRIGLY 1.2 ± 0.7 mmol/l versus1.7 ± 0.9 mmol/l. After adjusting for age, gender, smoking, BMI and diabetes, significant reverse association was found between serum HDL level and the extent of BOP ($P = 0.001$), PPD≥4 mm ($P = 0.001$), AL≥ 4 mm

($P = 0.047$) and BL≥ 4 mm ($P = 0.004$). Serum LDL and TRIGLY levels were not associated with the extent of periodontal disease.
Conclusion: Our results suggest that serum HDL cholesterol may have protective role in periodontitis. This finding needs to be confirmed in larger prospective studies.

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Association of interleukin-2 and interleukin-4 gene polymorphisms with chronic periodontitis in a Brazilian amazon population
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Background and aims: Cytokine gene polymorphisms (SNP) may influence the susceptibility and progression of periodontitis. Two important cytokine genes, interleukin (IL)-2 and IL-4 recently were associated with chronic periodontitis. Correlation of genetic SNP with stable characteristics of periodontal disease may provide critical information for identifying molecular biomarkers to be incorporated into individual risk profiles and also to establish new treatment strategies. The aim of this study was to associate the G-330T IL -2 and C-590T IL-4 gene polymorphisms with chronic periodontitis.
Material and methods: DNA was obtained from blood cells. The cases consisted of 51 patients with chronic periodontitis and were compared to 68 control subjects. The SNP were analyzed by polymerase chain reaction, agarose gel electrophoresis, and DNA sequencing. Distributions of single alleles, genotypes, and haplotypes were compared by chi-square test.
Results: While no significant differences between cases and controls were found in allele and genotype frequencies of IL-2. We found significant differences ($P < 0.01$) in the allele and genotype of IL-4, the haplotype T (-590) and genotype -590 T/T was significantly more frequent in controls (odds ratio 0.5).
Discussion and conclusion: The results suggest that the high-production IL-4 haplotype (T) was associated with a decreased risk for chronic periodontitis, whereas the IL-2 polymorphisms were similarly distributed among cases and controls.

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Ref no: EUABS065628
Relationship between periodontal condition in pregnant women and body size of their newborns
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Background and aims: The aim of the present study was to examine the relationship between maternal periodontal disease and body size of newborns.
Materials and methods: After controlling traditional risk factors for premature child birth and low birth weight, 180 mothers were selected: 17 were periodontally healthy, 77 had gingivitis, 72 had mild periodontitis and 14 suffered from severe periodontitis. The mothers and their newborns formed the study population. The body size consisting of weight, height, and head and chest circumference, were taken from newborns' hospital files.
Results: A decrease in the newborns' body size was observed as the mothers' periodontal disease severity increased. Birth weight, height, and head and chest circumference of babies born of mothers with severe periodontal disease were significantly lower than those who were born of mothers with healthy periodontal condition, gingivitis and mild periodontal disease ($P = 0.006$, $P = 0.016$, $P = 0.000$ and $P = 0.000$, respectively).
Conclusion: There was considerable association between periodontal disease in pregnant women and their newborns' body size, but this preliminary finding needs to be confirmed in more extensive studies.
Key words: newborn, periodontal disease, body size, preterm low birth weight.

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Ref no: EUABS065837
The relationship between periodontitis and preterm low birthweight
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Background: In the last two decades, the scientific community has demonstrated a growing interest in determining whether periodontal diseases is associated with pregnancy complications because adverse pregnancy outcomes still present a major public health problem worldwide.
Design: We report a cross-sectional pilot study to investigate the relationship between periodontal diseases and preterm low birthweight (PLBW) in pregnant women from Seville, who come to University Hospital from November 2007 to November 2008. Subjects completed a questionnaire and underwent full-mouth periodontal examinations at enrollment (prior to 32 week gestational age).Main outcome measures: plaque and bleeding scores, pocket probing depth and loss of attachment. Pregnancy outcome data was collected prospectively, including gestational age and birth weight at delivery. Periodontitis was defined as the presence of at least four teeth with one or more sites with probing depth ≥ 4 mm and clinical attachment loss ≥ 3 mm. A PLBW case was defined if women had delivery before the 37th gestational week and the newborn's weight was ≤ 2500 g.
Results: Data were collected for 165 subjects. The Mann–Whitney U test indicated that there were no significant relationships between the presence of periodontal disease and PLBW.
Conclusion: As noted by Holbrook 2004, Moore 2004, Farrell 2006 and Meurman 2006, this study failed to show an association between poor dental health and pregnancy in this population.

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Ref no: EUABS065812
The GCF prostaglandin E2 and IL 1 beta levels in post-menopausal hormone therapy receiving chronic periodontitis patients
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Background and aim: The aim of this study is evaluating the effect of postmenopausal hormone therapy in a group of postmenopausal women, on periodontal therapy outcomes by means of gingival crevicular fluid prostaglandin E2 (PGE2) and interleukin 1 beta (IL1β) levels.
Material and methods: Test group ($n = 11$) received conjugated estrogene and medroxyprogesteron, control ($n = 12$) did not receive any hormone therapy. All subjects had the same periodontal treatment. Gingival crevicular fluid (GCF) PGE2 and

IL1β levels, serum estrogen level, bone mineral density obtained at the beginning and 6 months after treatment.
Results: PGE2 and IL1β levels did not show significant decrease in any of the groups. Serum estrogen level increased in the test group, while bone mineral density decreased in the control. When intragroup comparisons were considered, we did not observe additional benefit of postmenopausal hormone treatment over the periodontal therapy outcomes.
Conclusion: Postmenopausal chronic periodontitis patients who are receiving hormone therapy may not be affected by this medication, concerning the GCF PGE2 and IL1 β levels after periodontal treatment.

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Ref no: EUABS065857
Effect of pregnancy on salivary proteinases
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Background: Our longitudinal study was aiming to monitor salivary proteinase levels and possible changes during pregnancy and post-partum.
Methods: Saliva samples were collected from 30 periodontally healthy pregnant women 5 times (once per each trimester, 4–6 weeks after delivery, and after lactation), and, as their controls, from 24 non-pregnant women 3 times (once per subsequent month). Salivary elastase and myeloperoxidase (MPO) levels were assessed by ELISA, matrix metalloproteinase (MMP)-8 levels by an immunofluorometric assay, and MMP-2 and MMP-9 levels and activities by gelatin zymography.
Results: Elastase concentrations maintained stable during the follow-up, while MPO concentrations increased significantly ($P < 0.0001$) after delivery. During pregnancy, MMP-8 concentrations were significantly lower than post-partum concentrations, being lowest during the 2nd trimester and highest after delivery. In pregnant women, the highest MMP-2 and MMP-9 levels were found in saliva after lactation.
Conclusion: Salivary proteinase and MPO levels are reduced during pregnancy.

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Cytokines in genetic susceptibility to periodontal disease in people with diabetes: a candidate gene approach
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Aim: To investigate if SNP's in inflammatory genes (IL6 & IL18) were associated with chronic periodontal disease (PD) susceptibility in diabetes mellitus (DM) patients.
Material and methods: 368 type I & II DM subjects included. PD diagnosis was performed using the Basic Periodontal Examination (BPE). IL6 (-174, -572, -6331) & IL18 (- 11015, -9731, -5848, -105 and -8855) SNP's were determined by PCR. Statistics: PD parameters were analyzed by ANOVA or paired t-test, while categorical data by X2 or Mc Nemar test. SPSS (v.15) with significance set at $P < 0.05$ was used. Multiple logistic regression analysis tested the possible association between genetic markers and PD diagnosis (Co-variates used: age, gender, ethnicity & smoking status). Subgroup analyses: according to race and smoking status. Haplotype analysis was performed with Thesias software.
Results: A trend for BPE scores (3 & 4) association with IL6 SNP frequencies did not reach statistical significance [SNP -174 in Type II DM ($P = 0.109$) and SNP -6331 in Type IDM ($P = 0.062$)]. This reached statistical significance for SNP -174 in T2DM (P 0.026) when BPE = 4 (severe PD) were compared to BPE = 0–3 subjects. Homozygosity for -174C was associated with a substantially higher frequency of BPE = 4 scores (OR = 12.6, 95%CI 2.5–64.0, $P = 0.002$) independently of age, gender, smoking & weight differences.
Conclusions: A mild association of IL6 -174G > C genotype with severe PD in type II DM patients was found, but replications are needed in larger studies.

482
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Relationship between gestational diabetes mellitus and periodontal diseases
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Background: The association between periodontal diseases and diabetes mellitus has been recognized in the dental literature for several decades.The recent accumulating evidence of a relationship between periodontal infections and certain systemic diseases has renewed interest in this association.However, there are no comparable published studies evaluating this relationship in subjects with gestational diabetes mellitus (GDM).
Materials and methods: We conducted a cross-sectional prospective pilot study to investigate the relationship between periodontal diseases and GDM in pregnant women from Seville, who came to University Hospital from November 2007 to November 2008.The subjects completed a questionnaire and underwent full-mouth periodontal examinations at enrollment (prior to 32 week gestational age).Main outcome measures: plaque and bleeding scores, pocket probing depth and loss of attachment. Hemoglobin A_{1C} level and C-reactive protein (CRP) were collected prospectively.Hemoglobin A_{1C} reflects the mean blood glucose concentration over the preceding 1–3 months and CRP is a marker of systemic inflammation.Periodontitis was defined as the presence of at least four teeth with one or more sites with probing depth ≥ 4 mm and clinical attachment loss ≥ 3 mm.
Results: Data were collected from 165 subjects.A Mann–Whitney U test and a Student's *t*-test were carried out in which N.D.S. were found.
Conclusion: Thus, this study failed to show an association between periodontal diseases and GDM.

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Evaluation of levels of IFN-G, TNF-A and TGF-B in serum and cgf of control and periodontal disease patients before and after periodontal treatment
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Patients with periodontal disease have increased inflammatory cytokines in serum and crevicular gingival fluid (CGF).The present study aims to assess the relation between clinical parameters and concentrations of IFN-g, TNF-a e TGF-b within serum and CGF from periodontitis sites and, subsequently, after treatment of the periodontitis sites.40 subjects were divided into 2 groups

based on gingival index (GI), pocket probing depth and clinical attachment loss: healthy (HP) and chronic periodontitis (CP). Serum and CGF samples collected from each patient were quantified for cytokines using the enzymatic immunosorbent assay. The highest concentration of IFN-g was obtained from CP group in serum and CGF compared to HP group ($P < 0.05$). Interesting, the mean concentration of IFN-g in CGF increased significantly after 7 days of periodontal treatment. The mean of TGF-b concentrations in CGF for CP were significantly increased when compared to HP ($P < 0.05$), however this difference was not observed in the serum ($P > 0.05$). The levels of TNF-a from serum and CGF in HP and CP groups did not showed statistical difference.The mean concentration of IFN-g and TGF-b was increased in patients with periodontal disease suggesting that cytokines were associated with cronic inflammatory process.Our results suggest that the periodontal treatment may transitory increase the levels of the IFN-g.Studies will be conducted to evaluate the levels of cytokines after 60 and 90 days of periodontal treatment.

484
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The relationship between periodontitis and preterm low birthweight

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Background: In the last two decades, the scientific community has demonstrated a growing interest in determining whether periodontal diseases are associated with pregnancy complications. Adverse pregnancy outcomes still present a major public health problem worldwide.
Design: We report a cross-sectional pilot study to investigate the relationship between periodontal diseases and preterm low birthweight (PLBW) in pregnant women from Seville, who come to University Hospital from November 2007 to November 2008. Subjects completed a questionnaire and underwent full-mouth periodontal examinations at enrollment (prior to 32 week gestational age). Main outcome measures: plaque and bleeding scores, pocket probing depth and loss of attachment. Pregnancy outcome data was collected prospectively, including gestational age and birth weight at delivery. Periodontitis was defined as the presence of at least four teeth with one or more sites with probing depth ≥ 4 mm and clinical attachment loss ≥ 3 mm. A PLBW case was defined if women had delivery before the 37th gestational week and the newborn's weight was ≤ 2500 g.
Results: Data were collected from 165 subjects. The Mann–Whitney U test indicated that there were no significant relationships between the presence of periodontal disease and PLBW.
Conclusion: As noted by Holbrook 2004, Moore 2004, Farrell 2006 and Meurman 2006, this study failed to show an association between poor dental health and pregnancy in this population.

485
Ref no: EUABS065575

The influence of home oral hygiene habits on inflammatory state markers

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Aim of the work was to evaluate the influence of scaling and home oral hygiene on fibrinogen and CRP concentrations in patients with coronary disease and chronic periodontitis (CP). 3 subgroups: group I – 16 persons with coronary disease and CP; group II – 19 generally healthy persons with CP; group III (control) – 19 persons without coronary disease, without CP, were studied. At the baseline, after 1 week and 3 months after scaling and oral hygiene instructions, periodontal examination was performed. Standard clinical parameters were evaluated. Seral titers of CRP and fibrinogen were also measured. Statistically significant plaque index reduction was observed between 1st and 2nd examination (group I: 72.41% versus 22.34%; group II: 66.12% versus 34.00%; group III: 52.56% versus 23.25%). After 3 months it remained at similar level, but in group III it raised significantly (30.89%; 40.75% and 30.58%, respectively), still being lower than in 1st examination though. Bleeding index reveals similar tendency in all groups studied. Pocket depth analysis shows steady significant reduction in group II (2.40 mm versus 2.19 mm versus 1.75 mm), also in this group significant differences in mean clinical attachment loss were observed between 2nd and 3rd and between 1st and 3rd examination. Decrease in CRP and fibrinogen levels was also observed, but was not significant. This work was supported by Colgate Palmolive.

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Periodontal status and preterm low birth weights: a pilot study

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Aims: To assess the effect of periodontal status to pre-term low birth weight (PLBW) infants in selected population in Malaysia.
Material and methods: This was a prospective cohort study using convenience sampling methods involving volunteer participation on a multi-ethnic population. A sample of 73 healthy pregnant women between 28 and 36 gestation weeks from five antenatal clinics in Selangor and Perak were recruited. Both Interviewer-Administered Questionnaire and Clinical Periodontal Examination, which included Plaque Index, Gingival Index, Papillary Bleeding Index, probing pocket depth and probing attachment loss on 16 teeth were conducted. Pregnancy outcome data which included gestational age at delivery, birth weight of delivered baby and delivery complications were collected after the delivery.
Results: Thirty-seven pregnant women were diagnosed with periodontal disease (minimum 2 teeth with ≥ 5 mm periodontal pockets and ≥ 3 mm attachment loss) and 36 without periodontal disease. Of those with periodontal disease, 10.8% had preterm delivery and 8.1% had low birth weight infants. None of the periodontal disease variables means or periodontal disease status associated significantly with either of the two groups.
Conclusion: In this study, periodontal disease was not shown to be a risk factor for pre-term delivery or low birth weight infants. Study supported byVote F 0309/2007B.

487
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The extent of periodontal disease associated with serum TNF-α level

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Background and objective: TNF-α has an important role in regulating and amplifying the inflammatory response. We analyzed the association between serum TNF-α level and the extent of periodontal disease.
Material and methods: A total of 92 subjects participated; of these 62 had moderate to severe chronic periodontitis and 30 were periodontally healthy. Serum TNF-α level was analyzed

using an ELISA assay. TNF-α-308 genotype (AG + AA versus GG) was defined using PCR. Probing pocket depth (PPD) and attachment level (AL) were examined clinically and alveolar bone level (BL) was measured on ortopantomographs. The associations between serum TNF-α levels and the extent of periodontal disease (% of affected sites) were analyzed using multivariate regression analysis.

Results: Serum TNF-α levels were significantly higher in subjects with chronic periodontitis when compared to the levels in periodontally healthy control subjects (19.6 ± 16.6 ng/ml versus 9.1 ± 8.7 ng/ml, $P = 0.001$). TNF-α-308 genotype had no significant influence on serum TNF-α level. After adjusting for age, gender, smoking and BMI the extent of PPD≥ 4 mm, AL≥ 4 mm and BL≥ 6 mm turned out to be significant determinants for serum TNF-α level ($P = 0.008$, 0.003, 0.030, respectively).

Conclusion: The significant association between serum TNF-α level and the extent of periodontal disease supports previous findings that regardless of the local character of periodontal disease, it can evoke systemic inflammatory resnponse.

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Ref no: EUABS065570

Effect of periodontal treatment on metabolic control in diabetic patients: systematic review, meta-analysis and perspectives

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Background: Research findings indicate that periodontal disease may favour the incidence or aggravation of diabetes and its complications. We conducted a systematic review and meta-analysis of the effect of periodontal therapy on glycaemic control in diabetic patients.

Materials and methods: We followed the QUOROM statement for conducting meta-ananysis of clinical trials. No language restriction was applied. Published and unpublished studies were identified via 7 electronic databases, handsearching, and contacting authors.

Results: 25 studies were included for systematic review. Nine randomised or quasi-randomised controlled trials were combined in a meta-analysis, concerning a total of 485 patients. We found that periodontal treatment could lead to a significant, 0.79% (95% CI 0.19–1.40), reduction in HbA1c level.

Discussion and perspectives: This systematic review suggests that treatment of periodontal disease could be an interesting part of the overall management of the diabetic patient. However, quality assessment revealed that existing studies on the topic differed greatly in quality, making the results questionable. The findings from this meta-analysis were used to plan the first multicenter, randomised controlled trial conducted on a European population. The DIAPERIO trial is actually recruting patients.

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Ref no: EUABS065613

Possible relationship between insulin resistance and periodontitis in men

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Background: Insulin resistance (IS) is a condition that can lead to an eventual hyperglycaemia causing a deleterious effect over the vasculature. Currently, there is scarcity of reports about the relationship between IS measured by indices, such as HOMA or QUICKI, and periodontitis. In addition, some studies have demonstrated that men appear more susceptible to IS. Our objective was to demonstrate any difference in insulin resistance between men with and without periodontitis.

Material and methods: A total of 27 subjects (periodontitis = 19; control = 8) were included. Established periodontitis was diagnosed as the presence of ≥ 2 teeth with clinical loss attachment ≥ 6 mm and ≥ 1 sites with probing depth ≥ 5 mm. Those participants not fulfilling these criteria were included in the control group. Blood samples were collected and serum glucose and insulin were determined using an automatic analyser. HOMA–IR and QUICKI indices were calculated. Mann–Whitney test was used to analyze the differences.

Results: Higher mean values for glucose, insulin and HOMA–IR, as well as lower QUICKI values, were found in periodontitis group compared to controls (No SD). However, a tendency for higher fasting insulin values was evident in periodontitis subgroup ($P = 0.071$).

Conclusion: Men appear to be susceptible to a putative influence of periodontitis over insulin resistance. Further studies are warranted to elucidate the relationship between both conditions from a gender basis.

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Ref no: EUABS065407

Induction of proatherogenic change by oral infection of Porphyromonas gingivalis in mice

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Individuals with severe chronic periodontitis have a significantly increased risk of developing cardiovascular disease. However, underlying mechanisms have not been fully elucidated. The aim of the present study was to determine whether oral infection of *Porphyromonas gingivalis* (*P.gingivalis*) could induce atherogenic changes in mice. C57BL/6 J mice were infected with live *P. gingivalis* W83 (10^9 CFU in 100 ml of PBS with 2% carboxymethylcellulose) orally using feeding needle. Infection was repeated ten times at 3-days intervals. After 2 days of last infection, tissues and sera were obtained. Bone resorption was assessed by X-ray micro-CT. Serum hs-CRP and IL-6 was measured by ELISA. Gene expression profiles of aorta and liver were analyzed by DNA micro array and quantitative real-time PCR. The Experimental group demonstrated significantly higher serum hs-CRP and IL-6 compared with the control group in addition to an elevated alveolar bone resorption. Gene expression analysis revealed that periodontal infection up-regulated the expression of several genes involved in the atherogenesis in the aorta and the liver. Furthermore, several genes associated with regulation of blood pressure and insulin resistance were down-regulated. Periodontal infection does affect pro-atherogenic change in various tissues through modulating the gene expression profiles suggesting causal association between periodontitis and systemic diseases, Supported by JSPS grant (19390536).

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Periodontal status of HIV–infected patients undergoing antiretroviral therapy compared to HIV–therapy naive patients

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After implementation of the highly active antiretroviral therapy (HAART) (1996) morbidity and mortality of HIV-infected patients dropped dramatically. Aim of this study was to analyze differences in periodontal disease between untreated HIV-infected

patients and treated patients with a viral load below the limit of detection (40 cop/ml). 57 HIV-infected patients were examined (age 21–60 years; mean 41.7 ± 7.2). Patients undergoing HAART (n = 36, Gr.1) and untreated patients (n = 21, Gr.2) were examined for probing depth (PD), periodontal recession (PR), clinical attachment level (CAL), papilla bleeding index (PBI), periodontal screening index (PSI) and DMF-T. Data about age, duration of infection, CD-4 cell count and viral load were analysed (SPSS 15, Wilcoxon–Test; $P < 0.05$). Periodontitis was diagnosed in 68.8% (Gr.1; treated) respectively 76.8% (Gr.2; untreated). There were no significant differences for the means PSI (Gr.1: 2.7 ± 0.84; Gr.2: 2.9 ± 0.70), CAL (Gr.1: 3.6 ± 1.96 mm; Gr.2: 3.2 ± 1.70 mm) and DMF-T (Gr.1: 16.46 ± 6.63; Gr.2:14.57 ± 5.75). The mean for PBI was almost twice as high in Gr.2 (1.02 ± 0.59) compared to Gr.1 (0.58 ± 0.40). Despite the fact that Gr.2 has a shorter duration of HIV-infection and a lower mean age it showed a higher level of periodontal inflammation. The CD-4 cell count in Gr.1 was 627.5 ± 316.3 µl and in Gr.2: 500.5 ± 241.4 µl. The viral load in Gr.2 was 50636 ± 68382 cop/ml. A periodontal diagnosis and therapy is recommended independent of an indication for HAART.

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Ref no: EUABS065264

Effects of bisphosphonate on periodontal tissues in postmenopausal women with chronic periodontitis

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The aims of this study were to evaluate the effects of initial periodontal treatment (IPT) and bisphosphonate on bone mineral density (BMD), clinical parameters, serum and gingival crevicular fluid (GCF) osteocalcin and type I collagen C telopeptide (TCCT) levels in women with postmenopausal osteoporosis and chronic periodontitis. Twenty patients were divided into the B(-) group-received IPT only and the B(+) group-received IPT and systemic bisphosphonate. Clinical periodontal parameters were measured, GCF and serum samples were collected before and 6 months after IPT. ELISA was performed to measure the markers. Clinical evaluation revealed significant improvements in all parameters of both groups ($P \leq 0.01$). Intergroup comparisons revealed statistically significant difference for sulcus bleeding index ($P \leq 0.05$). BMD levels decreased in the B(-) and increased in the B(+) group ($P \leq 0.01$), with no difference between groups ($P \leq 0.01$). GCF osteocalcin and TCCT levels were decreased in the B(+) group but increased in the B(-) group, with no difference between the groups. Serum TCCT level decreased in the B(+) group and intergroup difference was significant ($P \leq 0.05$). The findings of this study implicates that bisphosphonate treatment decreases systemic bone resorption and has a positive but not significant effect on periodontitis associated alveolar bone resorption.

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Ref no: EUABS065364

Evaluation of gingival crevicular fluid osteoprotegerin levels and effects of phase 1 periodontal treatment in menopausal and premenopausal patients

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Systemic conditions may affect host susceptibility, disease progression and severity.Low estrogen (E2) levels are associated with increased bone resorption. Osteoprotegerin (OPG), a secretory glycoprotein, acts as decoy receptor for receptor activator of kappa-b ligand which is essential for osteoclastogenesis. Aim of this study was to evaluate gingival crevicular fluid (GCF) OPG levels and effects of periodontal phase1 therapy in menopausal and premenopausal patients. Forty-four systemically healthy patients were recruited and divided into 4 equal groups: Premenopausal patients with chronic periodontitis (P) and gingivitis (G), menopausal patients with P (PM) and gingivitis (GM). BMD and serum E2 levels were measured. Before and after phase1 periodontal therapy plaque index, gingival index, pocket depth and clinical attachment levels were recorded and GCF samples were collected. GCF–OPG levels were detected by ELISA. Repeated measurement ANOVA and Spearman correlation tests were used for statistical analysis. Clinical parameters showed significant improvements after treatment ($P < 0.001$). GCF–OPG levels showed considerable increase after treatment ($P \geq 0.05$). Periodontitis groups' OPG levels were lower than gingivitis groups ($P \geq 0.05$). The current data suggested that periodontal phase1 therapy resulted with increased GCF OPG levels; however, within the limits of this study, those alterations were statistically insignificant and independent from E2 and BMD.

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Ref no: EUABS065148

Relation between the periodontal disease and rheumatoid arthritis in a sample of the Portuguese population

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Background and aim: The purpose of this study was to evaluate the existence of a relation between the periodontal disease and the rheumatoid arthritis.

Material and methods: The study included 52 volunteers, divided by 2 groups, each of them composed by 26 members, the first group was diagnosed with Rheumatoid Arthritis (20 women and 6 men) and the members' ages were comprised between 35 and 72 years old, the second group (20 women and 6 men) was healthy and had ages comprised between 34 and 69 years old. Clinical periodontal exams were realized, including dental plaque index, hemorrhagic index, probing depth, gingival recession, amount of teeth, with the purpose of evaluate the periodontal diagnosis. The data were introduced into the SPSS® computer program and analyzed using the qui-square test ($\rho < 0.05$).

Results: The patients with rheumatoid arthritis possess a lower quantity of teeth, showing a higher prevalence of dental plaque as well as higher gingival recession frequency, when compared with the healthy group. The periodontal diagnosis revealed a difference in the prevalence of the periodontal disease, among the diagnosed group (100%) and the control group (80.7%), and in the severity of the disease itself.

Conclusion: The obtained results, for the population used in the study, revealed that individuals with rheumatoid arthritis have 1.24 times more probability of having periodontal disease when compared with people that dont share the same condition.

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Ref no: EUABS065197

Higher prevalence of chronic periodontitis in patients with resistant arterial hypertension: a case-control study

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Background: Arterial hypertension is nowadays known as having an inflammatory component. Since periodontitis is considered a

low grade chronic inflammatory disease, it may be associated with cardiovascular diseases, including arterial hypertension. This study aimed to evaluate the association between periodontitis and resistant arterial hypertension.

Methods: 137 patients were examined. 70 patients (mean age of 55.2 years ± 9.2) were included in the case group and 67 non-hypertensive subjects (mean age of 50.0 ± 7.2) served as a control group. Periodontal clinical examination included plaque index, bleeding on probing, probing pocket depth (PPD) and probing attachment level (PAL). Patients with at least 5 sites with PAL ^{3} 6 mm were considered as severe periodontitis and with at least 30% of the sites with PAL ^{3} 4 mm generalized chronic periodontitis.

Results: The mean (± SD) number and % of sites with PAL ^{3}6 mm were 11 (± 14) and 16.6 (± 14) in the case group, and 5.7 (± 9.5) and 5.8 (± 9.7) in the control group ($P < 0.05$). The mean (± SD) % of sites with PAL > 4 mm was 37 (± 29.6) in the case group and 21.2 (± 20) in the control group ($P < 0.05$). The significant associations with arterial hypertension were severe periodontitis (OR = 4.04, 95% CI: 1.92; 8.49) and generalized chronic periodontitis (OR = 2.18, 95% CI: 1.04; 4.56).

Conclusion: Severe and generalized chronic periodontitis were more prevalent in patients with resistant arterial hypertension in this sample.

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Ref no: EUABS065198

Diabetes type 1 and 2 are both associated with periodontal disease and tooth loss in the study of health in Pomerania (SHIP)

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Background: Previous literature evaluating the association between diabetes and periodontitis had focused on either Diabetes type 1 (DM-1) or Diabetes type 2 (DM-2). The aim of this study was to determine whether DM-1 and DM-2 are associated with increased periodontal disease and tooth loss compared to non-diabetic subjects in appropriate age groups.

Methods: DM-1 subjects were retrieved from the Centre of Diabetes in Pomerania; DM-2 and non-diabetic subjects were recruited from the population-based Study of Health in Pomerania (SHIP). The study population comprised 145 DM-1 and 2647 non-diabetic subjects aged 20–59 years, and 182 DM-2 and 1314 non-diabetic subjects aged 50–81 years. Periodontal disease was assessed by attachment loss (AL) and tooth loss.

Results: Multivariable analyses revealed a significant association between DM-1 ($P < 0.001$) as well as DM-2 ($P < 0.01$) and mean AL after adjustment. The effect of DM-1 on mean AL was significantly higher in females than in males, whereas for DM-2 the effect was comparable in both genders. DM-1 and the number of missing teeth were also significantly associated after adjustment ($P < 0.001$). The association between DM-2 and the number of missing teeth did not attain statistical significance after full adjustment ($P = 0.25$).

Conclusion: Our study confirmed an association between DM-1, DM-2 and increased risk of periodontitis and tooth loss. Therefore, management and prevention of periodontitis should be a standard in care of diabetics.

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Ref no: EUABS067035

Association of periodontal disease and coronary heart disease

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Aim: The aim was to examine periodontal status of patients with Coronary heart disease (CHD) diagnosed by angiographic methods.

Materials and methods: 75 Patients with coronary catheterization were recruited from V. de la Salud Hospital, Toledo.46 with coronary disease (Study group SG) and 29 without disease (Control group CG). Conventional cardiovascular risk factors were not statistically significant between groups. Plaque index (PI), probing depth (PD) and bleeding on probing (BOP) were explored. Blood samples were taken for measurements of serum total cholesterol (TC), triglycerids (TG), high density lipoproteim cholesterol (HDL-CL) low densitiylipoprotein cholesterol (LDL-CL), and (PCR).

Results: SG patients showed worse periodontal results than CG (PI $P < 0.01$; mean PD $P < 0.05$; sites of PD≥ 4 mm $P = 0.87$; BOP $P = 0.6$). We also found blood PCR higher levels in study group ($P > 0.02$). We didn't found statistical differences between groups in TC, TG, HDL-CL and LDL-CL blood measurements.

Conclusion: The results indicate pathological periodontal clinical status of patients with angiografic demonstrated CHD. Later prospective randomized studies will determine whether periodontal disease is a risk factor of CHD and a possible clinically meaningful reduction in heart disease from the prevention or treatment of periodontal disease.

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Ref no: EUABS066996

Association of periodontal disease and acute coronary syndrome

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Background: Mounting evidence from epidemiological studies suggests a link between periodontitis and cardiovascular disease. acute coronary syndrome (ACS) is among the leading causes of death worldwide. The aim of the present study was to examine the association between periodontitis and ACS.

Materials and methods: A case-control study is underway at the Cardiology Department of Hippokration Hospital, in Athens. The study sample included 100 patients with a diagnosis of ACS and 50 control subjects with atherosclerosis-free coronary vessels confirmed by coronary angiography. Periodontal examination included the following clinical parameters: 1) Probing Depth (PD), 2) Clinical Attachment Level (CAL), 3) Gingival Bleeding Index (GBI).

Results: The mean age in the ACS group was 64.4 ± 13.9 years while in the control group was 65.1 ± 10.9 years ($P = 0.77$). There was a statistically significant difference in the mean CAL between ACS and control groups($P < 0.01$):5.7 mm(95%CI: 4.9–6.4 mm) versus 1.7 mm (95%CI: 0.6–2.8 mm).Moreover there was a statistically significant difference in the mean PD ($P < 0.01$) between the two groups:ACS 4.9 mm(95%CI: 4.7–5.0 mm) and control 3.3 mm (95%CI: 3.1–3.6 mm). Mean GBI also differed significantly between ACS and control groups($P < 0.01$) 94.1%(95%CI: 91.9%–96.2%) versus 45.2%(95%CI:42.1–48.2).

Conclusions: ACS patients have significantly worse periodontal conditions compared to control subjects, suggesting a positive association between periodontitis and ACS. Supported by Colgate-Palmolive, Europe.

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Changes of serum lipid levels in patients with periodontitis

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Nowadays the discussion over the correlation of periodontitis and cardiovascular diseases (CVD) is still ongoing. Some of previous *in vitro* studies have reported proatherogenic changes in lipid metabolism induced by periodontal bacteria; however, clinical evidences have been found to be controversy. Goal of present case-control study was to determine the lipid levels of serum in patients with advanced periodontitis. 38 patients (age 35 ± 5) with severe periodontitis were selected into the study and were compared with age- and sex-matched healthy control group. The serum was isolated from peripheral blood and levels of triglyceride, total cholesterol, LDL, HDL and LDL/HDL-ratio were measured. Our results showed that in the group of periodontitis patients the serum HDL concentration was decreased ($P < 0.001$), whereby triglyceride level and LDL/HDL–ratio were increased significantly ($P < 0.03$ and $P < 0.001$, respectively) compared to healthy subjects. No significant differences in the levels of LDL and total cholesterol of periodontitis patients and periodontal healthy subjects were found. Summarizing, our data suggest that chronic periodontal inflammation is associated with shifting the lipid metabolism in terms of increasing the risk for development and progression of cardiovascular diseases.

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Immunoreactivity to bacteria-associated molecular patterns (BAMPs) in periodontitis

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We recently showed that live biofilm bacteria release free-soluble BAMPs and that the soluble material stimulates immune reactions. Subgingival biofilm in periodontitis may act as a continuing source of BAMPs to systemic spread. Our aim was to study systemic and periodontal status in relation to antibody levels against selected BAMPs of periodontal species. Sera from periodontitis patients (PER) with or without acute coronary syndrome (ACS) and healthy subjects were analyzed for IgG levels against 10 LPS and OMP preparations from A. actinomycetemcomitans and P.gingivalis. Data on CRP and periodontal status were included from all, whereas blood lipids, glucose (FBG) and leukocyte counts (WBC) from patients only. Regarding all subjects, no correlation was seen between antibody levels against AaLPS mix and single-serotype antigens. Antibody levels against AaLPS mix, but not against AaOMP mix, correlated positively to CRP, CAL, PD, PlI and GI, whereas those against PgOMP mix to HDL-C and CAL. In PER + ACS group, 75% had antibody levels against AaLPS serotype b above median. Levels against serotypes a, b and d correlated positively to LDL-C. In PER-ACS group, a positive correlation was found between levels against AaLPS serotype f and LDL-C, and between those against PgLPS and FBG. Relationships found between antibody levels against various BAMPs and oral/systemic status depended on antigen preparation, which may be worth considering when studying immunoreactivity in periodontitis.

501
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Levels of IL-6 and CRP in patients with stable chronic obstructive pulmonary disease (COPD) and chronic periodontitis

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Chronic periodontitis (CP) is defined as an inflammatory disease of the supporting tissues of the teeth caused by spesific oral bacteria. Oral bacteria may contionusly stimulate periodontal tissues to release cytokines such as Interleukin-6 (IL-6) and C Reactive Protein (CRP). It's possible the cytokines orginating from the gingival crevicular fluid (GCF), enter into the saliva,which then contaminate distal respiratory epithelium.These cytokines may stimulate respiratory epithelial cells to release other cytokines to recruit inflammatory cells to the site. It making more susceptible to infection by respiratory pathogens. Chronic obstructive pulmonary disease (COPD) is a condition in which there is chronic obstruction to airflow and abnormal inflammatory response in the lung. The aim of this study was to investigate a possible relationship between oral hygiene and progression/severity of COPD and to compare CRP and IL-6 levels in GCF, saliva and bronchoalveolar lavage (BAL) in patients with CP and stable COPD.In total 38 patients were included in this study; 9 COPD patients with CP, 9 periodontal healthy COPD patients, 10 systemic healthy patients with CP and 10 systemic healthy controls. Total CRP, IL-6 amounts in GCF, saliva and BAL were higher in COPD patients with CP than in those with oral healty or in systemic healthy persons. The findings of this study suggested that periodontal disease could be implicated as a contributing factor to the progress of COPD.

502
Ref no: EUABS066949

Interrelationship between diabetes and periodontal disease: the role of IL-6, TNF-α and iNOS activities in diabetic rats with periodontitis

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Periodontal diseases and diabetes mellitus are closely associated with many similarities in pathobiology. The purpose of this study was to evaluate the role of inducible nitric oxide (iNOS) activity, tumor necrosis factor-alpha (TNF-α) and interleukin-6 (IL-6) on the pathogenesis of both diseases. Thirty-four male rats were divided into 4 groups; designated as ligature-induced periodontitis (*n*: 9), streptozotocin (STZ)-diabetic alone (*n*: 10), STZ-diabetic with periodontitis (*n*: 10) and sham control (*n*: 5). Immunohistochemical analysis was performed for all samples. No significant ($P < 0.05$) changes were found in diabetes alone and sham control groups. Expression of iNOS and IL-6 in STZ-diabetic with periodontitis group was higher than the others ($P < 0.001$). There was also a correlation between positive total cell number of iNOS and IL-6 levels in this group. The levels of iNOS and TNF-α expression was greater where abundant inflammatory cells (+++) in ligature-induced periodontitis and STZ-diabetic with periodontitis groups ($P > 0.001$). This study suggests that iNOS and IL-6 production could be important in

the pathogenesis of periodontal disease in diabetics. Type 2 diabetes may play an important role in the onset and progression of periodontal disease. Further studies are needed to clarify the interrelationship between periodontitis and diabetes.

503
Ref no: EUABS066968

Influence of maternal periodontal disease in decreasing average birth weight: a linear regression analysis

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Aim: To evaluate the possible linear dependent relationship between birth weight and maternal periodontitis.
Material and methods: Thousand two hundred and six (1206) women were examined in the immediate postpartum, in a Belo Horizonte's Hospital (Brazil) using two different and widespread periodontitis diagnostic definition: definition 1 (Lopez et al. 2002), presence of 4 or more teeth with at least 1 site with probing depth (PD) of ≥ 4 mm and clinical attachment loss (CAL) of ≥ 3 mm; and definition 2 (Hujoel et al. 2006), at least a site with PS ≥ 4 mm. Considering that birth weight is a continuous variable, for each periodontal definition, an analysis of linear regression was realized, adjusting for other confounding variables such as age, marital status, education, consumption of tobacco, alcohol or illicit drugs, diabetes, hypertension, prenatal visits, primiparity, previous preterm birth, previous abortions, genitourinary infection, as well as for possible interactions.
Results: In the final adjusted models, the average decrease in birth weight was associated to periodontitis (definition 1: $P = 0.024$, $R^2_{adj} = 0.089$; definition 2: $P < 0.001$, $R^2_{adj} = 0.091$) as well as to extremes of age, genitourinary infection in women with non stable unions, previous preterm birth, and primiparity, particularly when few prenatal visits were realized.
Conclusion: Maternal periodontitis was determined to be associated to a decrease of birth weight, being the definition 2 the one that exhibited the clearest statistic association.

504
Ref no: EUABS066916

Immunoreactivity to bacteria-associated molecular patterns (BAMPs) in periodontitis

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We recently showed that live biofilm bacteria release free-soluble BAMPs and that the soluble material stimulates immune reactions. Subgingival biofilm in periodontitis may act as a continuing source of BAMPs to systemic spread. Our aim was to study systemic and periodontal status in relation to antibody levels against selected BAMPs of periodontal species. Sera from periodontitis patients (PER) with or without acute coronary syndrome (ACS) and healthy subjects were analyzed for IgG levels against 10 LPS and OMP preparations from A. actinomycetemcomitans and *P. gingivalis*. Data on CRP and periodontal status were included from all, whereas blood lipids, glucose (FBG) and leukocyte counts (WBC) from patients only. Regarding all subjects, no correlation was seen between antibody levels against AaLPS mix and single-serotype antigens. Antibody levels against AaLPS mix, but not against AaOMP mix, correlated positively to CRP, CAL, PD, PlI and GI, whereas those against PgOMP mix to HDL-C and CAL. In PER + ACS group, 75% had antibody levels against AaLPS serotype b above median. Levels against serotypes a, b and d correlated positively to LDL-C. In PER-ACS group, a positive correlation was found between levels against AaLPS serotype f and LDL-C, and between those against PgLPS and FBG. Relationships found between antibody levels against various BAMPs and oral/systemic status depended on antigen preparation, which may be worth considering when studying immunoreactivity in periodontitis.

505
Ref no: EUABS066933

The effect of phase I treatment on reduction of serum cholesterol and triglyceride in patients with chronic periodontitis and hyperlipidemia

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The association between periodontal infections and systemic diseases like coronary heart disease, myocardial infarction, preterm pregnancy, low weight delivery, rheumatoid arthritis, and hyperlipidemia has been shown. In limited researches, the effect of periodontal treatments on systemic diseases has been studied. The aim of this research was evaluating the effect of phase I treatment on the level of serum cholesterol and triglyceride in patients with chronic periodontitis and hypercholesterolemia.
Methods: In 30 patients with chronic periodontitis and known hyperlipidemia, cholesterol and triglyceride were measured. Patients with grade 3 and 4 of CPITN index were considered as periodontitis patients. Then periodontal treatment including scaling, root planning and oral hygiene instructions were done to them. One month after treatment, cholesterol and triglyceride again were measured.
Results: Phase I treatment caused significant reduction of mean cholesterol (315.7 mg/dl–301.04 mg/dl) and triglyceride (209.75 mg/dl–201.37 mg/dl) levels.
Discussion: The results of this research emphasis on the importance of periodontal treatments in patients with systemic diseases.

506
Ref no: EUABS066084

Periodontal changes during pregnancy – clinical observations

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Background: Due to high circulating levels of sex hormones, pregnancy increases the susceptibility to periodontal inflammation.
Aim: Recording of periodontal modifications during pregnancy.
Materials and methods: Twelve generally healthy, non-smoking pregnant subjects were recruited and examined in the first, second and third pregnancy trimesters and at 3 months post-partum. At each visit, visible plaque index (VPI), bleeding on probing (BOP), clinical attachment level (CAL) and probing pocket depth (PPD) were measured from six sites per tooth.
Results: During the follow-up the overall percentage of cases with BOP in the first, second, third trimesters of pregnancy and at 3 months post-partum were: 33%, 91%, 75% and respectively 25%. The percentage of women with PPD≥ 4 mm reached 66% in the second trimester and decreased to 8.3% post-partum. There were no changes in the CAL during the observation period.

Conclusions: BOP and PPD increased from the first to the third trimesters, independent on plaque, with a severity peak in the second trimester and decreased post-partum. Based on these results, periodontal changes during pregnancy are reversible, as pregnancy gingivitis does not lead to periodontitis.

507

Ref no: EUABS066076

The effect of non-surgical periodontal therapy on plasma inflammatory markers and glycemic control in type 2 diabetic patients with periodontitis

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Background: The purpose of this study was to evaluate the changes in plasma levels of inflammatory biomarkers and glycated hemoglobin (HbA1c) after non-surgical periodontal therapy.
Methods: Thirteen subjects with periodontitis and type 2 DM with mildly elevated HbA1c (≥ 7 but $< 9\%$) and severely elevated ($\geq 9\%$) were treated with full-mouth scaling and root planing and given oral hygiene motivation. Plasma levels of interleukin (IL)-10, RANTES and polymorphonuclear (PMN) elastase/α1-proteinase inhibitor (α1-PI) were measured by enzyme-linked immunosorbent assay at baseline and 30 days and 90 days after treatment.
Results: The clinical parameters revealed a statistical significant decrease at the 1 and 3 months reexaminations. The reduction in probing depth was 1.93 mm and clinical attachment level was 0.46 mm after 3 months ($P < 0.01$). The difference in HbA1c levels after 3 months was 0.7% ($P < 0.05$). RANTES, IL-10 and α1-PI levels were decrease both at 1 and 3 month evaluations but no significant differences were observed.
Conclusions: The result of this study revealed that periodontal therapy in patients with type 2 DM had positive effects on metabolic control of diabetes. Plasma inflammatory markers were not changed significantly during the study period. This might be also due to diet which was not controlled in our study. Therefore, larger sample size and controlled diet is necessary in the future studies.

508

Ref no: EUABS066323

The effect of non-surgical periodontal therapy on the glycemic control of type 2 diabetic patients: a randomized clinical trial

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Aim: To determine the effect of non-surgical periodontal therapy (SRP) over a 6 month period, on the glycemic control of type 2 diabetics.
Materials and methods: Study population comprised of 60 diabetics with moderate to advanced periodontitis, randomly divided into 2 groups. Patients were examined 4 times (baseline, 6 weeks, 3 & 6 months). Treatment group (TG) received SRP at baseline, and control group (CG) at the 6 month visit. Both groups received oral hygiene instructions and CG also received prophylaxis at baseline. Periodontal parameters including probing depth, clinical attachment level and bleeding on probing were recorded. Blood samples were collected at each visit to determine HbA1c levels. 53 patients completed the study.
Results: The two groups did not differ in HbA1c levels at baseline: 7.98% (SD 0.83) & 7.57% (SD 0.84), for the TG & CG respectively. Mean HbA1c at 6 weeks, 3 & 6 months for the TG were 7.18% (SD 0.78), 7.10% (SD 0.77) & 7.02% (SD 0.95), while the corresponding values for the CG were 7.44% (SD 0.89), 7.27 (SD 0.44) & 7.38% (SD 0.99). Unadjusted analyses showed significant difference ($P < 0.05$) from baseline to all 3 recall visits for the TG, while no significant difference was found for the CG.
Conclusion: The present study suggests a favorable effect of periodontal therapy on glycemic control of type 2 diabetics. This project is co-funded by the European national fund and national resources (EPEAEK 2 PYTHAGORAS).

509

Ref no: EUABS066124

0.2% Chlorhexidine reduces ventilator-associated pneumonia in respiratory ICU patients

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Aim: To investigate whether oral hygiene care with 0.2% chlorhexidine digluconate is effective in preventing ventilator-associated pneumonia (VAP) in intubated intensive care unit (ICU) patients.
Methods: Over 12 months, 45 patients consecutively admitted to ICU at Chest Diseases Department were randomised into 2 groups; either receiving from nursing staff twice daily 0.2% chlorhexidine digluconate as part of mouth rinsing, and teeth, cheeks, tongue, and endotracheal tube cleaning regimes (CHX group) or receiving standard oral care in terms of wiping oral surfaces with saline wetted gauze (Control group). Clinical periodontal parameters including probing pocket depth, bleeding on probing, and plaque indices were recorded within 24 hour of admission and once every week until discharge from ICU or death. Quantitative culture examination of lower respiratory tract samples was used for VAP diagnosis. Data were tested statistically by parametric tests.
Results: Incidence of VAP in CHX and Control group was 13.6% and 52.2%, respectively ($P = 0.011$). There were no significant differences in age or clinical periodontal measurements between study groups ($P > 0.05$). Aetiology of VAP was documented in 33.3% of 45 patients and *A. baumannii* accounted for the majority of isolates.
Conclusion: These findings suggest that oral hygiene care with 0.2% chlorhexidine digluconate is effective in preventing VAP in intubated ICU patients. Further studies are required to develop strict prevention protocols.

510

Ref no: EUABS066132

Detection of periodontal bacteria in atheromatous plaques by nested-PCR

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Background: Despite the growing evidence regarding the detection of periodontal pathogens in atheromatous plaques, conflicting results have been published in the literature, which may be due to differences in laboratory procedures. Hence, the aim of this investigation was to assess the presence of periodontal bacteria (Pg, Aa, Td, Pi, Tf, Ec, Cr, Fn, Pm and An) in atheromatous plaques by using a strict protocol for laboratory analysis.

Materials and methods: Twenty-six patients scheduled for endarterectomy provided atheromatous plaques that were scraped, homogenized and from which, DNA was extracted. In order to obtain a representative concentration of amplicons, four amplifications of the bacterial 16S rRNA sequence were carried out for each sample with universal eubacteria primers by PCR. Nested-PCR with specific primers for the target bacteria was performed next. PCR products were electrophoresed in agarose gel. Positive samples were sequenced to confirm the obtained results.
Results: All the analysed samples were positive for at least one target bacterial species. The simultaneous presence of various bacterial species within the same specimen was a common observation. The prevalence of *Pg, Aa, Td, Pi, Tf, Ec, Cr, Fn, Pm* and An was 96.15%, 84.62%, 0%, 11.54%, 88.77%, 53.85%, 3.85%, 53.85%, 3.85% and 0%, respectively.
Conclusion: The detection of periodontal bacteria in atheromatous plaques has been confirmed with the use of a strict microbiological protocol.

511
Ref no: EUABS066156
The relationship between bone mineral density and periodontal clinical parameters in men with hypogonadism
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Background: Results of several studies suggest that osteoporosis may be a predisposing factor for periodontal tissue destruction. Hypogonadism in men is mainly characterized by low testosterone levels and severe osteoporosis. The aim of this study was to evaluate the association between bone mineral density and periodontal status in men with hypogonadism.
Methods: Fifty three subjects with hypogonadism were selected randomly. Systemic bone mineral density (BMD) was measured at the spine, hip and whole body by dual-energy X-ray absorbtiometry and periodontal indices were recorded including plaque index, gingival index, bleeding on probing, probing depths and clinical attachment levels. Correlation analyses were conducted to determine the association between BMD and clinical parameters.
Results: Statistically significant negative correlations were found between pocket depth, clinical attachment levels and Neck T score, Neck Z score, total BMC, total BMD, total score, Wards BMC, Wards T and Z score ($P < 0.05$).
Conclusion: Our results provide the evidence of association among bone mineral density, pocket depth and clinical attachment level. It may be suggested that osteoporosis may be a risk factor for periodontal disease.

512
Ref no: EUABS066019
Decreased levels of IL-4 in inflamed gingiva from inflammatory bowel disease patients with periodontitis
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We previously showed that Inflammatory Bowel Disease (IBD) patients are more susceptible to periodontitis. Our aim was to compare the levels of IL-1ß, IL-4, IL-12p70, INF-γ and IL-18 in the gingival crevicular fluid (GCF) from inflamed shallow and deep periodontal sites of 30 IBD patients (15 Crohn's disease patients: CD, 15 ulcerative colitis patients: UC) with otherwise 15 systemically healthy controls. As a secondary aim, we analyzed the serum concentration of the same cytokines mentioned in those individuals. All subjects were diagnosed with chronic untreated periodontitis. GCF was sampled from four shallow and four deep periodontal sites from each patient. The cytokines were analyzed using a commercially available Lincoplex and ELISA kits. IL-4 was lower in the GCF from the IBD group compared to controls in both the shallow and deep sites. IL-18 was lower in GCF from shallow pockets of CD ($P = 0.02$) patients when compared to controls. In deep sites, IL-6 was higher in the UC ($P = 0.028$) group compared to controls. In serum, both CD ($P = 0.011$) and UC ($P = 0.019$) had higher concentration of IL-18 than controls. IBD patients showed a shortage of IL-4 in inflamed gingival pockets compared to controls regardless of the degree of periodontal destruction. The reason of more pronounced periodontal disease in IBD patients compared to systemically healthy controls could be caused by an imbalance between pro- and anti-inflammatory cytokines in the inflamed periodontium.

513
Ref no: EUABS066024
Exploring the relationships between sense of hopelessness, worry, self-rated oral health status and behavior in a Romanian adult population
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Background: The purpose of this study was to examine the impact of psychological states, self-rated oral health and oral health behavior on hopelessness.
Methods: A cross-sectional study design was used. Data were collected between September and November 2006. The sample consisted of 233 Romanian adults (mean age 47.3 years; 65.6% women; 65.8% married). The questionnaire included information about demographic, psychological, self-reported oral health, and oral health related behavior items.
Results: 'Hopeless' participants were more likely to self-evaluate their dental health as poor/very poor ($P < 0.001$), to be less satisfied by the appearance of their teeth ($P < 0.05$), to report more non-treated caries ($P < 0.01$), to brush their teeth less than twice ($P < 0.01$), and never use mouthrinse ($P < 0.05$). Logistic regression analysis showed that 'hopeless' participants were apt to have lower educational level, less frequently brush their, have higher financial problems as the reason for not visiting the dentist, and report higher anxiety (Odds Ratio = 5.4, 4.2, 2.6, 12.6, respectively). Forty seven of 64 'hopeless' participants (73.4%) and 90 of 112 'non-hopeless' ones (80.4%) were correctly predicted by the above 4 variables.
Conclusions: The results support the view that impaired oral health and financial problem have an increased risk for hopelessness.

514
Ref no: EUABS066013
Antioxidants and periodontitis in men
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Background: Antioxidants are chemical compound capable to interfere in oxidative reactions, scavenging free radicals, and thus, to reduce the oxidative stress induced in any disease. Periodontitis is a chronic, inflammatory, destructive disease that affects the supporting tissues of the teeth and is associated with enhanced

concentration of inflammatory markers. The aim of this investigation was to explore if periodontitis influences over plasma antioxidant profile in men.
Material and methods: A total of 27 male subjects (periodontitis = 19; control = 8) were included in this study. Established periodontitis was diagnosed as the presence of ≥ 2 teeth with clinical loss attachment ≥ 6 mm and ≥ 1 sites with probing depth ≥ 5 mm. Those participants not fulfilling these criteria were included in the control group. Blood samples were collected and oxidized coenzyme Q, reduced coenzyme Q, total coenzyme Q total and vitamin E were analyzed by HPLC-EC. Mann–Whitney test was used to analyze differences between groups.
Results: Plasma vitamin E levels did not show differences between both groups, but significant differences were found for oxidized coenzyme Q, being the highest values found for the periodontitis group.
Conclusion: Periodontitis is related to an increased oxidized coenzyme Q level in men, which might be considered as a net increase of the oxidation process.

515
Ref no: EUABS066065

The influence of periodontal therapy on plasma rantes, PMN elastase/ (α1-PI) and IL-10 levels in diabetes mellitus patients with gingivitis

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Background: The aim of this study was to investigate whether periodontal therapy could affect the glycemic control and plasma inflammatory markers of type 2 diabetes mellitus (DM) patients with gingivitis.
Methods: Blood samples were collected at baseline, 1st and 3st months after periodontal therapy from 12 DM patients with gingival inflammation and poor oral hygiene (mean age: 45.5 ± 4.2). Patients received full mouth scaling with ultrasonic and manual instruments and oral hygiene motivation. Plasma levels of RANTES, interleukin (IL)-10, polymorphonuclear (PMN) elastase/α1-proteinase inhibitor (α1-PI) were measured by enzyme-linked immunosorbent assay at the same time periods.
Results: α1-PI plasma levels decreased significantly ($P < 0.01$). Mean plasma levels were 100.54 ng/ml before treatment and 54.183 ng/ml 3 months after periodontal therapy. Subjects had significant reduction in mean hemoglobin A1c (HbA1c) from 9.29% to 8%. RANTES and IL-10 plasma levels reduced after the therapy but the significant difference was not observed.
Conclusions: α1-PI levels in plasma can show the activity of granulocytes during inflammatory response. Therefore, eliminating the gingival inflammation might result with reduction in the plasma PMN elastase/(α1-PI) levels and improvement in glycemic control. The effect of periodontal therapy on plasma inflammatory markers of DM patients with gingival inflammation will require further studies that will have to include much larger sample sizes.

516
Ref no: EUABS065974

Periodontal disease as a risk factor of carotid artery atherosclerosis

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Aims: The carotid plaque severity has been associated with increased risk of cardiovascular disease. Our aims were to investigate the association between carotid artery atherosclerosis and periodontal status as well as to estimate the role of inflammatory markers and dyslipidemia in periodontal disease and carotid artery atherosclerosis.
Materials and methods: A total of 60 non-smoker participants (32 females in 28 males), aged 58 ± 8 years, were included in the study.Periodontal clinical examination included probing depths, recessions, attachment levels, plaque record and bleeding on probing score. The common carotid arteries and bulbi were evaluated ultrasonographically in all participants to determine the IMT, site of plaques, and stenosis grade. The hs-CRP, total cholesterol, LDL, HDL and trigliceride levels were determined in blood samples from every participant.
Results: Positive correlation between probing depth and IMT was found at common carotid artery and bulbi sites. In addition, hs-CRP and atherogenic index correlated positively with probing depth in all plaque groups. Groups of calcified and lipid plaques exhibited deeper pockets in comparison to control group ($P < 0.05$). The deepest periodontal pockets were recorded in calcified plaque group.
Conclusions: The results of our study suggest periodontal disease as a possible risk factor of carotid artery atherosclerosis which might predict the cerebrovascular ischemic events.

Clinical tips and cases – Periodontology

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Ref no: EUABS066006

The orthodontic extrusion as a treatment alternative to surgical elongation in patients treated with bisphosphonates

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The osteonecrosis of jaws induced by bisphosphonates (BP) is a condition well-known today. It is rarely spontaneous and develops most frequently as a result of extraction or dentoalveolar surgery. The purpose of this work is to report the case of a patient treated for osteoporosis by oral BP. By relating all steps of coronary elongation of the 45 orthodontic extrusion, realised before fixed restoration. The radiologic follow-up after 1 year showed a good healing of bone and mucosa. The BP inhibits osteoclasts and bone turnover essential to healing bone as well as keratinocytes needed to repair mucosa. The extrusion orthodontic is a short-term treatment how avoids bone exposure after tooth extraction and nonsurgical restoration of biological space preventing osteonecrosis of jaws. This approach proposes an alternative treatment to prevent this osteonecrosis.

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Ref no: EUABS065934

A pilot study to evaluate a platelet-rich fibrin (PRF) membrane as an alternative to tissue from the palate

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Background: Platelet-rich fibrin (PRF) belongs to a new generation of platelet concentrates, with simplified processing and without biochemical blood handling.This study evaluated the safety and effectiveness of a PRF membrane combined with a coronally repositioned flap surgery and compared this procedure to a free connective tissue graft with a coronally repositioned flap surgery in a treatment of gingival recession defects.
Methods: Four patients with gingival recessions localized in the maxillary anterior and premolar regions were included in the study. Patients reported esthetic concerns and root hypersensitivity.The clinical examination of the maxillary buccal regions revealed that gingival recessions were of class I Miller defects and exposure of root surfaces were to be due to abrasion.Root coverage were surgically achieved with PRF membrane combined with a coronally repositioned flap surgery (eight teeth) and free connective tissue graft with a coronally repositioned flap (four teeth).
Results: After 3 months, in PRF membrane combined with a coronally repositioned flap and connective tissue graft with a coronally repositioned flap groups, the mean gain of clinical attachment were 3 mm and 3 mm, the mean root coverage were 74% and 71%, respectively.
Conclusion: Within the limits of this study, the results demonstrated that PRF membrane combined with a coronally repositioned flap procedure is safe and effective in a treatment of class I Miller gingival recession defects.

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Ref no: EUABS065969

Immobilisation of free gingival graft by n-butyl cyanoacrylate: 12-months results of 5 cases

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Aim: Trauma caused by sutures affect the eventual width of the newly formed keratinized tissue following free gingival graft procedures. Moreover, suturing a free gingival graft is the most time-consuming stage of this surgical intervention. This report presents long-term follow-up of 5 cases of free gingival graft application where increasing width of attached gingiva was aimed and grafts were immobilised by n-butyl cyanoacrylate.
Methods: The recipient bed was prepared by incising existing mucogingival junction with a number 15 blade to the desired depth. A partial thickness flap was reflected leaving periosteum on bone. Flap was displaced apically and immobilised by periostal sutures. A graft was dissected from the palatal mucosa. The graft was immediately transferred to the recipient bed. Gentle pressure was applied for 5 minutes and n-butyl cyanoacrylate was placed in a drop-wise manner on the graft borders. Excess drops were removed.
Results: The postoperative healing was uneventful in all cases. Significant gain in attached gingiva dimensions was achieved and preserved during 12 months follow-up period.
Conclusion: These results indicate that n-butyl cyanoacrylate is effective as a tissue adhesive in free gingival graft procedures which is less time-consuming than suture application. Comparative studies are suggested to evaluate the clinical efficacy of using n-butyl cyanoacrylate in mucogingival surgery.

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Ref no: EUABS066062

Gingival overgrowth in a patient with nager syndrome

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Nager Syndrome is a rare, hereditary, congenital acrofacial dysostosis with various malformations. In this case report periodontal therapy approach and 30 month follow up of a 17 year old male patient, diagnosed as Nager Syndrome, who has diffuse, mild gingival overgrowths at the upper and lower jaws, induced with orthodontic brackets will be presented. Intraoral examination showed plaque accumulation due to inadequate mechanical plaque removal induced by physical and mental disabilities and orthodontic bracets. Periodontal therapy including oral hygiene instructions, initial periodontal therapy and gingivectomy operations were performed. Histologic evaluation revealed pseudoepithelial, edematous hyperplasia in epithelial tissue and dense lymphocyte, leukocytes, plasma cell infiltration, distrophic calcifications and a significant increase in collagen matrix in connective tissue. After the surgery, the maintenance was quite rigid and for 12 months inspite the bad oral hygiene no recurrence was observed. But as the treatment time was prolonged patient cooperation decreased and plaque accumulation increased and recurrence was observed at the 18th month. After the orthodontic treatment was accomplished and patient cooperation was promoted some reduction of the recurrence was observed. Since

there is no information about the gingival manifestations of Nager Syndrome the patient was kept under strict maintenance program to control the disease progression.

521
Ref no: EUABS066018

Post surgical manteinance after coronally advanced flap: a protocol for the dental hygienist

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The post surgical period after a multiple coronally advanced flap is critical for the good result of the surgery. The aim of this poster is to propose a post surgical maintenance protocol for the hygienist after this periodontal plastic surgery, allowing the patient to achieve good plaque control and to improve the keratinization of the soft tissue. The manteinance protocol after mucogingival surgery that we are proposing is to control the patient with professional polishing 2, 4 and 6 weeks after surgery; then every month for the first 3 months after surgery; finally every 3 months for the first year. Patients are instructed to avoid toothbrushing in the surgical area for 4 weeks, rinsing with chlorexidine at 0.12% (Curasept) alone for one minute twice a day; from the fourth week the patient should start brushing with a roll tecnique with an ultrasoft toothbrush (Meridol pink) for 3 months and then with a soft toothbrush (Meridol green) subsenquently for the first year. The interdental flossing can restart on the third month. The first requirement for the complete healing is to avoid any external tension during the first two weeks, because the mucogingival flap is vulnerable to disruption by mechanical forces. The tensile strength for damaging the flap is quite low for the first time and increase more about 15 days after surgery; therefore wound stability as well as plaque control is very important during the early phases of the wound healing.

522
Ref no: EUABS066020

The use of KTP laser for the treatment of severe-generalized-chronic periodontitis: results, outcomes and 2 years follow up

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Only recently KTP laser has been used in the dental practice. Mainly it was used for dental bleaching. The scientific data and clinical evidence regarding the application of KTP laser on periodontal tissues is limited. The aim of this study is to evaluate the results and outcomes of periodontal treatment using KTP laser in addition to cause-related therapy. To date we have performed 200 cases with severe-generalized-chronic periodontitis. There was no need for any periodontal surgical intervention. Pain score compared to classical treatment was minimal and there was no other complication. The healing process of the periodontal tissues was excellent in terms of gingival inflammation, pocket depth, attachment level, mobility, furcation involvement. At 2 years follow up, the results are maintained with no recurrences and no need for further treatment. All the patients were compliant with the 4–6 months re-evaluation and supportive periodontal treatment. KTP laser appeared to be an efficient and indispensable, complementary method to the cause related periodontal treatment.

523
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Rare benign tumours of oral cavity: capillary hemangioma: a case report with a 2-year follow up

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Hemangioma is a relatively common benign proliferation of blood vessels that primarily develops during childhood. Two main forms of hemangioma recognized: capillary and cavernous. The capillary form presents as a flat area consisting of numerous small capillaries. Cavernous hemangioma appears as an elevated lesion of a deep red color, and consists of large dilated sinuses filled with blood. The purpose of the study was to report the case of a capillary hemangioma in a patient and to describe the successful treatment of this case. The patient was a 19 year old female who presented herself to the Atatürk University, faculty of dentistry, department of periodontology, with the complaint of bleeding and slowly enlarging mass on the upper right molar region. The lesion was diagnosed as capillary hemangioma after clinical examination and biopsy. Treatment consisted of scaling, root planning and surgical excision. Four months after surgery healing was occurred and 2 years later area of the lesion appeared completely normal as clinically. The surface is highly keratinized and no further growth was evidenced during the 2 year of follow-up. Early detection and biopsy is necessary to determine the clinical behavior of the tumor and potential dentoalveolar complications.

524
Ref no: EUABS066121

Nitric oxide in gingival tissue of type II diabetic patients with periodontal disease

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Nitric oxide (NO) a toxic free radical with multiple biological fuctions, including inhibition of neutrophil chemotaxis, adhesion to endothelium and upregulation of tumor necrosis factor alpha is generated by oxidative deamination of L-arginine by nitric oxide synthase.Periodontal disease is often a chronic complication of diabetes mellitus (DM), with evidence of incerased gingival inflammation, deeper periodontal periodontal pockets, and greater clinical attachment and bone loss.Increased NO concentrations were demostrated in sera of patients with type I DM and persistent microalbuminuria. The aim of our study was to evaluate expression of NO in gingivae of type II diabetic patients presenting with periodontal disease and to correlate the level of NO with chronic periodontal disease. Gingival tissues were obtained from diabetic patients diagnosed with chronic periodontitis, chronic peridontitis without diabetes mellitus, diabetes mellitus without periodontitis and healthy individulas. Fixed and embeded tissue sections were stained with hematoxylin-eosin and antibodies aganist INOS.There was significant differences among groups in cells stained with INOS, the highest cell stained with INOS in periodontally involved type II diabetic patients.We found that NO is significantly associated with inflammation and clinical attachment and bone loss in periodontal disease and Type II DM.

525
Ref no: EUABS066539
Supportive periodontal therapy in Langherans cell histocytosis: a case report
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Langherans cell histocytosis (LCH) is a general term encompassing a group of rare diseases characterized by an abnormal proliferation of cells similar to the Langherans cells of epidermis. The etiology of the disease remains poorly understood. It is unclear whether LCH is a malignant clonal disorder or the result of an inflammatory response to aberrant cytokine expression or a virus. The proliferation of Langherans cells may involve many body systems such as skeleton, lungs, hypothalamus/posterior pituitary gland, skin/mucous membranes, lymphnodes, spleen, liver. Skeletal involvement is frequent and presents with well defined, radiolucent defects mainly in the skull, ribs and proximal femur. LCH commonly involves the head and neck regions as well. Intraoral involvement is frequent and in some cases the oral cavity can be the only site affected. Periodontal tissue involvement can resemble periodontal disease and be initially misdiagnosed as aggressive periodontitis. Gingival bleeding, edema, recession, deep probing depth and root exposure in the molar region, tooth migration and mobility, expecially in the molar area as well as gingival necrosis can be observed. The aim of this presentation is to describe the case of a young adult patient affected by LCH involving the mouth and in particular the periodontal tissues, and provides practical insights on supportive periodontal therapy (SPT): plaque removal instructions, debridment techniques, optimal recall interval.

526
Ref no: EUABS066297
Clinical application of acellular dermal matrix (ADM) in periodontal plastic surgery
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Introduction: Freeze-dried Acellular Dermal Matrix (ADM) allograft (Alloderm®), originally used for full-thickness burn wounds, was recently introduced as an alternative to the autogenous soft tissue grafts. Nowadays, ADM is using in multiple clinical situations such as root coverage, for increasing the width of attached gingival in teeth or implants, for augmenting ridge defects in aesthetic restorative areas and for obtaining primary closure in Guided Bone Regeneration procedures.
Objective: To show a description of the management and behaviour of ADM through a periodontal plastic surgery case series.
Materials and methods: Authors treated 7 patients in two groups: 1) edentulous ridge augmentation (2 patients) through an interpositional graft in order to increase the buco-palatal volume to create an adequate emergence profile in pontic areas and; 2) multiple root coverage (5 patients) treated through a coronal repositioned flap (Zucchelli technique) in combination with ADM. It will be presented a representative case of each treatment group (technique and follow-up).
Discussion and conclusion: ADM may be considered a valid alternative to autogenous soft tissue graft in cases of root coverage and augmentation of ridge defects in order to avoid a second surgical site.

527
Ref no: EUABS066168
Giant cell granuloma of the maxilla with immune dysfunction
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Backround: Giant cell granuloma is a benign lesion of the jaws with unknown etiology. This patient report describes a recurrent giant cell granuloma involving of the maxilla together with some of the immune dysfunction.
Methods: A 46-year- old female patient presented to the department of Periodontology with a swelling on the right side of the maxilla since 3 months. Initial treatment of lesion was surgically excised under local anesthesia. Histopathologic examination revealed numerous multinucleated giant cells. When recurrence was detected three mouths later, lesion was excised with peripheral ostectomy. The medical diagnosis was made based on the laboratory findings by the immunologist.
Results: Peripheral giant cell granuloma was diagnosed on the basis of clinical and histopathological findings. Immune dysfunction was revealed to immonological findings, in particular the deficiency of CD15 and phagocytic capability in patient's granulocytes was lower than normal range %45, and CCR2 expressing monocyte percentage was higher than that of healthy controls.
Conclusions: It may be speculated that increased expression levels of CCR2 in monocytes may be responsible recruitment of these cells in granulomatous tissue producing its ligand (MCP1-3). It is suggested that monocytes moving from the circulation into of inflammation contribute to granuloma formation. Some of the immune dysfunction may be contribute to the etiology of reparative granulomatous lesions in the oral mucosa.

528
Ref no: EUABS066169
Oral lesions seen with neutropenia associated with Parvovirus B19: a case report
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Parvovirus B19 the only member of the Parvoviridae family, infects and lyses erythroid progenitor cells in the bone-marrow which are the precursors for red-blood- cells. *Pseudomonas aeruginosa* sepsis rarely occurs in healthy children. Candidiasis is the most common oral fungal infection. It's usually caused by *Candida albicans*.Predisposing factors are local (poor oral hygiene, xerostomia,) and systemic (broad spectrum antibiotics,immunosupresive drugs,,neutropenia,cellular immunodeficiency) A 6 years old child referred to our clinic by department of pediatrics with the complaint of severe candidiasis characterized by creamy-white, slightly elevated, removable plaques on her palate, buccal mucosa and dorsum of tongue. After clinic, hematologic, microbiologic tests, parvovirus B19 and pseudomonas aeruginosa infection associated with parvovirus is found.Related with parvovirus; neutropenia was developed.As a consequence of neutropenia severe candidasis occured in patient's oral cavity. Adjunct to her treatment at department of pediatrics, oral hygiene is supplied and the debridement of lesions made by CHX solution every day. Thus the quality of her life is increased.After a week recall oral mucosa was completely normal as clinically. In this type of cases the systemic therapy has to be supported with dental therapy.
Keywords: parvovirus B19, *Pseudomonas aeruginosa*, *Candida albicans*, neutropenia, dental therapy

529
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Free gingival graft: does it still find a place in periodontal plastic surgery?

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Objectives: Free gingival grafts have been widely used in the treatment of certain muco-gingival problems. Because of its reduced predictability in covering gingival recessions and other associated problems, some advanced techniques, associated with more predictable outcomes were developed. In the present paper we would want to underline some clinical situations in which free gingival graft has advantages over other muco-gingival techniques such as: gingival recessions in anterior zone for which a repositioned flap risks to produce radicular denudation in the donor area, gingival recessions in anterior inferior areas associated with a thin gingiva and the need to enhance the dimensions of alveolar ridge associated with decreased vestibular deepth.
Methods: Three clinical cases are presented in order to sustain the choice of the free gingival grafts in the above mentioned clinical situations. There are revealed the patients' chief complains, the clinical and radiographic parameters and the decision on the surgical procedure. Also, a brief surgical protocol is presented, mentioning the particularities for each case.
Results: The results are presented in terms of the evolution of the clinical parameters, but also in improved aesthetics and function. Post-operative evolution was recorded.
Conclusions: The positive results obtained and the lack of complications recommends the free gingival graft to be used in the above mentioned clinical situations.

530
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Interdisciplinary approach in aggressive periodontitis: from diagnosis to treatment in some clinical cases

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Objectives: Aggressive periodontitis may have devastating effects on oral functions including aesthetics. The treatment of advanced periodontal destructions presents a significant challenge for the periodontist in part due to the difficulty to manage the local inflammation because differences in interindividual response, but also because the difficulty to compensate the lost tissues. The present paper reveals some complex therapeutically approaches including interdisciplinary collaboration in three cases of advanced disease.
Methods: The methodology of diagnosis and the justification of the treatment plan are exposed for three patients, aged between 25 and 40 years. There are also mentioned the brief aspects concerning clinical treatment protocols we used.
Results: The results considered in terms of clinical and radiological parameters revealed evident decrease of local inflammation, the reduction of probing depth and teeth mobility, radiological evidences of periodontal stability and regeneration. The satisfactory aesthetic outcome is obvious.
Conclusions: An interdisciplinary treatment is usually needed in aggressive forms of periodontal disease, but the order of the specific therapies depends on clinical presentation. Even if the management of local infection, inflammation and the impaired functions was obtained for the three patients, the positive long term outcome must to be proved.

531
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Splinting system in aggressive periodontitis associated with dental fluorosis: a compromise by extracted tooth?

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Dental fluorosis is hypoplasy or hypomineralisation of enamel or dentine due to chronic ingestion of excessive quantity of fluorides up to 2 mg/l during period of dental development. It can appear according to its severity by unaesthetics brown colourings. In Senegal an area up to 21000 km^2 of surface for 1.5 million inhabitants is site of hyperfluoration of drink water. Fluorine contents exceed 9.5 mg/l in certain parts of this zone of endemic fluorosis. Dental fluorosis in Senegal (global prevalence > 1%) constitutes as well as periodontal diseases a problem of public health notably aggressive periodontitis which estimated prevalence is 4.4%. These affections can involve unaesthetics or functional disorders because of tooth mobility, migrations or dental dyschromies. One of the criteria of success in aesthetic restorations is based on choice of teeth colour, but how to do with advanced stage of dental fluorosis? Two clinical cases of splinting using extracted maxillary incisives because of aggressive periodontits are described in two young Senegalese females 23 and 25 years old presenting dental fluorosis. Extracted teeth were prepared and splinted using metal strands drowned in photopolymerized composite. Splinting systems have shown good clinical stability at 3 years post-operative. Easiness of the procedure with good clinical results and satisfaction of patients make it an alternative for clinician and acceptable compromise for patient with unfavourable economic status.

532
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The laser supported periodontal treatment of hemophilia b patient in puberty: a case report

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The purpose of this report is to present the use of CO2 laser in the treatment of Hemophilia B patient having decreased factor IX with excessive gingival overgrowth (GO). In the presented case, the patient was 13 years old male having Hemophilia B, presented with spontaneous gingival bleeding and excessive GO. After the consultation with the hematology department and the elevation of his factor IX level up to 100% by supplementation of factor IX, the initial periodontal therapy including scaling/root planing was performed at three consecutive appointments. Following the limited resolution of gingival inflammation, the gingival enlargements were removed by gingivectomy and gingivoplasty procedures. Although the patient's factor IX level was elevated to normal levels, the excessive bleeding occurred during and after the surgical procedures. Therefore, 2 W CO2 laser in pulse mode was used to control bleeding. After the operation, patient was observed every week for 4 weeks. Then, he was put on 2 months recall appointments. Eighteen months post surgical appointment demonstrated perfect tissue contours with no complication and recurrent GO. Even though the oral complications related to Hemophilia B were rare, there is a possibility to encounter them in puberty with poor oral hygiene. In the treatment of such patients, laser-supported periodontal surgical procedures would be the treatment of choice in controlling excessive gingival bleeding and excellent tissue recontouring.

533
Ref no: EUABS066107
Eruption cyst associated with hereditary gingival fibromatosis: a case report
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Hereditary gingival fibromatosis (HGF) is a rare gingival enlargement seen as an isolated feature or part of a syndrome. Eruption cysts are benign cysts that appear on the mucosa of a tooth with delayed eruption. This case report describes clinical features and periodontal treatment of a 16-year-old boy with HGF. In addition to severe gingival enlargement covering two thirds of teeth, delayed eruptions were observed on seven teeth with an eruption cyst on upper left canine. He has hypertrichosis and finger/ear abnormalities. Initial periodontal therapy comprising oral hygiene instructions, scaling and root planing was performed. As the first surgical step, an incision on the gingiva overlying the incisal edge of the canine tooth was made, drainage of the cyst fluid was provided and a thin surgical drain was placed into the cyst cavity for continuous drainage. The drain was removed 1 week after and the exposition of incisal edge of the canine became apparent. As the second surgical step, full mouth mucoperiosteal flap operations were performed to remove excessive gingival tissues and to expose unerupted teeth to the oral cavity. Postoperative recovery was uneventful. Then the patient was directed to the orthodontics clinic to align and occlude his permanent teeth. Since HGF may cause severe functional and esthetic problems and delayed tooth eruption, managing the eruption cyst and performing the periodontal operations were the right choice for successful treatment approach.

534
Ref no: EUABS066118
Early treatment of cemento-ossifying fibroma: regenerative approach
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We describe the early treatment of a relatively rare tumour classified among the fibro-osseous lesions with the unknown etiology, a cemento-ossifying fibroma that developed on the upper first molar region, associated with diestema between the involved teeth in a 17 years old female patient. No detectable abnormality between teeth # 15 and # 16 was found in radiographic examination. It was round in shape and 15 mm in diameter. The lesion was removed including the surrounding healthy tissue. The involved bony tissue was also removed with the steel burs. The residual bony defect, probing 15 mm in depth was filled with bovine-derived bone graft, and the free gingival graft obtained from the palate was used to cover the region. The pathology was reported as cemento-ossifying fibroma. The recovery was uneventful and no recurrence was detected clinically or radiologically at 1 year follow-up with improved periodontal parameters. Although cemento-ossifying fibroma is a benign tumor of the mouth, sometimes the lesions could be extremely invasive involving the neighboring anatomical regions such as maxillary sinus and orbital area. Therefore, early diagnosis and the complete removal of the lesion are crucial in the successful treatment. In the presented case, the lesion was completely removed and the underlying bony defect was augmented with predictable regenerative outcome.

535
Ref no: EUABS066941
Hereditary hemorrhagic telangiectasia (HHT) affecting the gingiva: a case report
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Hereditary hemorrhagic telangiectasia (HHT) or Rendu–Osler–Weber disease is a rare autosomal dominant disorder characterized by recurrent epistaxis, telangiectasia on the fingers, lips, oral mucosa, visceral arteriovenous malformations and positive family history.

Aim: We report a case of HHT which presented with a very few lesions in the oral cavity.

Case presentation: A 37-year-old woman was seeking periodontal care because of frequent bleeding of the maxillary gingiva. Past medical history revealed that at the age of 16 because of a gastric haemorrhage she was diagnosed with a HHT. At clinical examination it was discovered one angiomatoid lesion on the vestibular gingival margin of tooth 22 and a red spot on the midline hard palate, opposite to the premolars. The gingival lesion was biopsied and the histological examination showed a capillary-venous malformation consistent with a diagnosis of HHT.

Conclusion: Gingival manifestations of HHT may include hemorrhagic vesicles, papules, nodules, and ulcers which are commonly treated for cosmetic reasons. It is important to recognize HHT as early as possible to prevent complications. It has been proposed that to reduce their risks of dental bacteraemias, dental hygiene measures and use of antibiotic prophylaxis should be implemented prior to dental or surgical procedures. Finally periodontists may play a key role in identifying patients with HHT and in referring them and their family members for genetic counselling.

536
Ref no: EUABS066938
Treatment of severe periodontitis – orthodontico-periodontal considerations
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Aim: Loose of attachment in severe periodontitis is associated with ocluzal disorders and can represent the cause for secondary dental migration. Quite often the regain of the disturbed functions caused by the fixed orthodontic treatment is needed, but only after the implementation of some periodontal regeneration techniques.

Material and method: We studied five patients with severe aggressive generalized periodontitis. After the initial treatment and the reevaluation of the intraosseus lesions, we applied enamel proteins (Emdogain) after creating an access flap. Orthodontic treatment started after 4–6 months taking into consideration the precautions needed for the affected periodontium.

Results and conclusions: Orthodontic movement of the teeth in the new regenerated tissue, revealed good results from clinical and radiological point of view, with a 4.3 mm mean value for the regain of attachment of the lesions with 2–3 bone walls, a decrease of periodontal pockets with 3 mm, but also a post surgical recessions with 0.8 mm mean value.

537
Ref no: EUABS066846

Primary extra-nodal non-hodgkin's lymphoma of the gingiva

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Introduction: Oral non-Hodgkin's lymphomas (NHL) are uncommon and those affecting the gingiva are even rarer.
Aim: We present a case of NHL of the gingiva which was misdiagnosed and treated as an inflammatory lesion.
History: A 46-year-old woman consulted his dentist for a painful swelling adjacent to tooth 45 and 46 which was diagnosed as an abscess. The patient was then treated by non-surgical and antibiotic therapies. Since the swelling increased, he extracted tooth 45 and 46 and performed the curettage of the socket without submitting the material for histopathological analysis. The lesion however increased in size and the patient starts also to complain about a persistent foreign body sensation in the throat. He was then referred to our clinic.
Results: Clinical examination showed a right mandibular firm and ulcerated mass extending from tooth 44 to the retromolar trigone. Radiography sowed a slight resorption of the alveolar ridge. An incisional biopsy revealed a large B-cell NHL. Thorough workup did not reveal other lesions. The patient was treated with a standard chemotherapy protocol that allowed complete regression of the disease.
Conclusion: Primary NHL of the gingiva can be misdiagnosed as a trivial inflammatory lesion. A biopsy is mandatory in those cases where symptoms do not subside after specific treatments. Early diagnosis may avoid disease progression and improve the prognosis.

538
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Clinical and microbiological benefits of systemic metronidazole and amoxicillin in the treatment of generealized aggressive periodontitis

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This double-blind, placebo-controlled clinical trial evaluated the effects of scaling and root planing (SRP) alone or in combination with metronidazole (MTZ) and amoxicillin (AMX) in the treatment of subjects with generalized aggressive periodontitis (GAgP). 30 GAgP subjects were randomly assigned to receive SRP alone or combined with MTZ (400 mg) and AMX (500 mg) t.i.d. for 14 days. All subjects rinsed with a 0.12% chlorhexidine solution 2x day for 2 months. Clinical and microbiological examinations were performed at baseline and 3 months post-therapy. Subgingival samples were individually analyzed by checkerboard DNA-DNA hybridization. All clinical parameters improved in both groups at 3 months. However, subjects receiving adjunctive antibiotics exhibited the greatest improvements in mean full-mouth probing depth and clinical attachment level, as well as in deep sites. The most beneficial changes in the subgingival microbial profile were also observed in the antibiotic-treated subjects, who showed significant reductions in mean counts and proportion of the 3 red complex pathogens, and the greatest increase in proportions of host-compatible species. In addition, the SRP + MTZ + AMX therapy significantly reduced levels of *A. actinomycetemcomitans* in deep sites, as opposed to SRP alone. Significant advantages are observed in clinical parameters and in the composition of the subgingival microbiota when MTZ + AMX are associated with SRP in the treatment of subjects with GAgP.

539
Ref no: EUABS066908

Diagnostic attitude in gingival abrasion lesion produced by traumatic brush

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Background: Control of bacterial plaque is very important in periodontal treatment. Brushing is the most effective method to control it, but if it is done incorrectly it can cause lesions on soft tissues such gingival abrasion and gingival recession, and on hard tissues such erosion, abrasion, abfraccion and hipersensitivity. The aim of this clinical case is to indentify gingival abrasion and make it defferential diagnosis from other diseases than can affect gingiva.
Case report: Clinical case is about a 33 years old patient diagnosed of moderate generalized agressive periodotitis. After a mantainance sesion, pacient developed at gingiva ulcerations on upper molars, recession on 2.6, hiperkeratosis on inferior molars and Stllman's cleft on inferior premolars. We made differential diagnosis with other patologies than can give similar lesions (necrotizing ulcerative gingivitis, gingivostomatitis herpetic, herpes zoster, lichen planus, penphigoid, penphigus, erythema multiforme and leukemia) and we came to the conclusion that it was gingival abrasion produced by traumatic brush.
Conclusions: In this kind of lesion is very important to take in accont importance of a detailed medical and odontological history. It is necessary to make differential diagnosis with other patologies that can produce similar lesions. If we suspect of gingival abrasion we have to change higyene habits and follow lesions. In 10–15 days it has to disapear. If it go on, additional tests will be necessary.

540
Ref no: EUABS066880

Chronic periodontitis associated to palato-radicular groove at the federal university of Bahia: a clinical report

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Background: Higher prevalence rates of palato-radicular grooves (PRG) have been reported in one study in Brazil 9.3% (lateral incisor 11.1%, central incisor 6.9%) by Albaricci et al. (2008) compared to global findings by Everett & Kramer (1972), Kogon, (1986) and Assaf & Roller (1992), which showed rates of 3.0%, 4.6% and 2 to 5%, respectively. Teeth featuring PRG are on risk for the development of periodontitis because of a higher bacterial plaque accumulation than PRG free teeth. In deep PRG, communications with the pulp chamber might cause combined periodontal-endodontic lesions. The aim of this clinical report is to present a case of localized severe periodontitis associated to PRG seen at the Federal University of Bahia – Brazil.
Material and methods: One systemically healthy, non-smoker female, 37 years age, presented periodontal probing depth of 6 mm associated to bleeding on probing at the palatal surface of the left maxillary lateral incisor. A PRG could be detected by means of visual inspection. There was no gingival recession at the buccal or palatal sites of this tooth. The diagnosis of severe

localized periodontitis associated to the local factor of PRG was established and treated by means of non-surgical periodontal therapy.
Conclusion: This clinical report highlights the importance of the awareness of PRG on maxillary incisors for the establishment of a correct diagnosis and a successful periodontal therapy.

541
Ref no: EUABS066883

Esthetic crown lengthening to treat increased gingival display associated with incomplete passive eruption

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Background: With the increasing importance in our society of esthetics, patients with incomplete passive eruption (IPE) may seek out treatments to improve their appearance. There are multiple etiologies associated with increased gingival display. Clinicians must identify the cause of this condition in order to determine the appropriate therapy. The purpose of this poster is to describe the clinical condition known as IPE in order to differentiate this diagnosis from other entities associated increased gingival display. In addition, a review of surgical techniques and outcomes for clinical cases treated with these procedures are presented.
Materials and methods: Four patients that attended to the Periodontal Clinic at Tufts University seeking for treatment to improve their esthetic appearance are presented. Management with resection of hard and soft tissue was utilized to achieve therapeutics goals of Esthetics and Health.
Results: Evaluation after the surgical procedures resulted in a decrease of gingival display and improved esthetic appearance. Patients reported minimal post op discomfort and no increased sensitivity.
Conclusions: Periodontal surgical therapy by means of gingival flap and osseous recontouring is a predictable procedure to improve the esthetics of patient diagnosed with IPE. Appropriate diagnosis of the etiology of the excessive gingival display is of key important in these cases.

542
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Effect of interleukin-1 on secretion of interleukin-1b and pro-MMP-1 by human gingival fibroblasts stimulated *in vitro* by *E. coli* lipopolysaccharide

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Aim: To evaluate interleukin-1b and pro-MMP-1 secretion by human gingival fibroblasts after stimulation *in vitro* by *E. coli* LPS, depending on IL-1 genotype.
Material and methods: Buccal swabs were taken from 19 periodontally healthy adults presenting for tooth extraction to establish IL-1 genotype using GenoType^{O} PST. Gingival tissue was taken from extraction sites and fibroblast cultures established in RPMI 1640 medium. At 5th passage, cultures were stimulated for 24 hours with 100 mg/ml *E. coli* LPS or left unstimulated. IL-1b and pro-MMP-1 levels in the medium were evaluated by ELISA.
Results: Mean IL-1β levels were higher in test cultures (9.7 pg/ml/10^6 cells) than controls (5.02 pg/ml/10^6 cells; $P < 0.05$). No differences were seen between IL-1 genotypes for test or control cultures and in pro-MMP-1 levels between test and control cultures, or between IL-1 genotypes. Stimulation coefficients didn't differ significantly between IL-1(+) (mean 3.06) and IL-1(-) groups (3.94). Significant correlation was found between IL-1b secreted by test cells and by control cells (R = 0.51) and between stimulation coefficients for IL-1b and stimulation coefficients for pro-MMP-1 (R = 0.66).
Conclusion: Secretion of IL-1β and pro-MMP-1 by both LPS gingival fibroblasts shows wide individual variation, and does not significantly depend on IL-1 genotype. Certain individuals were identified exhibiting a marked increase in both IL-1b and pro-MMP-1 following stimulation compared to control cultures.

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Ref no: EUABS065322

Primary malignant melanoma of the maxillary gingiva: a case report

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Backround: Malignant melanoma of the oral cavity is extremely rare, accounting for 0.2%–8% of all melanomas. Primary gingival malignant melanoma is associated with poor prognosis. We present the clinopathological findings of a case.
Material and method: A 64-year-old woman presented with a hyperplastic-pigmented lesion which located on the right vestibular maxillary gingiva adjacent to the first molar-incisors area.
Results: A tender submandibular lymph node was also palpated on the ipsilateral side. Radiographically, no involvement of the underlying bone was detected. Under local anesthesia an excisional biopsy was taken from the lesion. The diagnosis of primary malignant melanoma of the gingiva was established after standard microscopic and immunohistochemical analysis, which revealed the neoplastic cells to be positive for HMB-45 and S100 protein. A computerized tomography scan on the neck, liver, and lungs revealed no further evidence of disease. A partial right maxillectomy with radical neck dissection was planned.
Conclusion: In malignant melanoma of the gingiva, survival rates may be increased by early diagnosis and treatment. The dentist must carefully examine periodontal tissues, and pigmented lesions should be biopsied.

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Ref no: EUABS065350

The efficacy of two manual toothbrushes on plaque removal: can modified bass technique make an additional effect?

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Objectives: To compare the cleaning efficacy of two different types of manual toothbrushes and the additional effect of Modified Bass Technique (MBT).
Material and methods: Sixty one periodontally healthy subjects were included to the study. MBT was instructed 20 of the 40 subjects and other 20 subjects brushed without any technique. Subjects were randomly divided into 4 groups: Group1: Manual brush, Group2: Manual brush + MBT, Group3: Manual micro pulse brush, Group4: Manual micro pulse brush + MBT. In the second phase, 21 subjects performed brushing using both brushes in a split mouth approach without any technique. Subjects were abstained from oral hygiene procedures for 48 hours and on the following day, baseline plaque and bleeding scores were recorded. All subjects brushed twice a day and the measurements were repeated at the end of the first week.

Results: All groups mean plaque scores were significantly reduced from 3.39 to 2.08 in group1, 3.18 to 1.90 in group2, 2.77 to 1.99 in group3, and 3.39 to 1.79 in group4. All groups bleeding scores were significantly decreased at the first week ($P = 0.001$). Plaque removing efficacy of different types of brushes and the techniques were similar ($P > 0.05$).
Conclusions: Within the limitations of this study, plaque removing efficacy were not depends on brush designs, different brushing techniques and the individual discrepancies that are thought to be effective on plaque removing efficacy. (Brushes are supported by P&G Oral-B Turkey distributor)

545
Ref no: EUABS065348

Evaluation of an oral preventive protocol in children with acute lymphoblastic leukemia: case series

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Aim: The systemic consequence of immunosuppressive therapy induces many oral and dental complications. The aim of the present case series was to investigate the effectiveness of preventive oral health care protocol in patients receiving antineoplastic treatment for acute lymphoblastic leukemia (ALL).
Methods: Five children from 8 to 14 years old with a diagnosis of ALL were included into the study. During a two month study period, all children received daily oral hygiene care and a 0.12% chlorhexidine mouth rinse twice a day. At the day they hospitalized, baseline periodontal parameters including probing depth (PD), bleeding on probing (BOP) and plaque indexes (PI) were recorded and repeated after 2 months. Mucositis scores were also recorded every week during a 2 month study period.
Results: The use of chlorhexidine in addition to daily plaque control resulted in significant improvements in the percentage of sites with BOP and PI scores. After 2 months, percentage of sites with BOP decreased from 18% to 6%, mean PI score decreased from 2.55 to 0.9, while mean PD remained unchanged. Mucositis was present in 3 out of 5 patients at baseline and seen in none of the patients during chlorhexide usage period.
Conclusion: The findings of the present case series are encouraging, and suggest that chlorhexidine together with oral health care might be helpful in improving oral hygiene as well as alleviating mucositis and oral complications in children with ALL on chemotherapy.

546
Ref no: EUABS065275

Noninvasive periodontal approach in the treatment of amlodipine-induced gingival overgrowth

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Background: Gingival overgrowth is a side effect of a certain group of drugs. Amlodipine, a dihydropyridine calcium antagonist, is used for treatment of hypertension and angina.
Materials and methods: This case report describes the periodontal noninvasive management of gingival overgrowth in 8 patients who had been taking amlodipine for approximately 3 years. The main complaints of patients were gingival swelling, spontaneous bleeding, difficulty in chewing and speaking, and poor appearance. Moderate to severe gingival overgrowth was observed on both mandible and maxilla of these patients. Gingiva was also oedematous, red, smooth, shiny and bled easily on probing. At first, amlodipine was replaced with an angiotensin II receptor after consultation with their physicians. Secondly, oral hygiene instructions, scaling and root planing procedures were performed for at least 6 sessions.
Results: While gingival inflammation was resolved immediately, a gradual decrease in gingival overgrowth was observed throughout the 5-month follow-up period along with significant reductions in plaque index, gingival index and probing pocket depth. The periodontal status of patients was maintained without any need of surgical procedures.
Conclusion: The noninvasive periodontal approach and replacement of amlodipine in hypertensive patients with drug-induced gingival overgrowth resulted in marked improvements in clinical parameters, as well as in functional and aesthetic outcomes.

547
Ref no: EUABS065300

Oral soft-tissue burn associated with the alcohol

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Injuries to oral soft-tissues can occur due to accidental, iatrogenic, and factitious traumas. Traumatic lesions, whether chemical, physical, or thermal in nature, are among the most common in the mouth. Chemical injuries of the oral soft-tissues may readily occur due to the large number of chemical substances, such as drugs and various agents, which come in contact with the oral cavity. Only few reports in literature discussed oral soft-tissue burns from the alcohol. Therefore, this paper describes a chemical burn resulted from ethyl alcohol oral mucosa contact by patient. A girl with severe pain and burning sensation in the left maxillary region was admitted to periodontology clinic. The dental history revealed that she had decided on her own to use a chemical agent as an adjunct to cease of toothache. Consequently, she used cotton pellet, moistened in eau de cologne. Treatment consisted of oral hygiene instruction, mechanical debridement, local antimicrobial agents, systemic analgesic and guidance for patient. The present report illustrates the cologne can lead to severe focal to diffuse caustic burns of the oral mucosa as a result of the concentration of ethyl alcohol at the area. The early detection by the patient and the immediate institution of therapeutic measures ensured a rapid cure and possibly prevented further mucosal damage. In addition, we believe that guidance and education are important prophylactic tools for prevent from these local behavior.

548
Ref no: EUABS065306

Self-inflicted gingival injury due to habitual fingernail scratching

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Injuries to oral soft-tissues can occur due to accidental, iatrogenic, and factitious traumas. Traumatic lesions, whether chemical, physical, or thermal in nature, are among the most common in the mouth. A type of physical injury to the gingival tissues is self-inflicted. Sometimes the lesions are termed gingivitis artefacta. Self-inflicted gingival injuries in children and adolescents can occur as a result of accidental trauma, premeditated infliction, or chronic habits such as fingernail biting, digit sucking, or sucking on objects such as pens, pencils or pacifiers. The purpose of this case report was to illustrate the destructive nature of the habit and to describe the successful treatment of this case.

A 14-year-old girl with moderate pain, gingival bleeding and recession in the anterior mandibulary region was admitted to periodontology clinic. Upon questioning, the patient readily admitted traumatizing her gingiva with her fingernail. Treatment consisted of oral hygiene instruction, mechanical debridement, mental healing and surgical periodontal treatment. Postoperatively, complete root coverage, gains in clinical attachment levels, and highly significant increases in the width of keratinized gingiva were observed. Patient compliance, regular dental follow-ups, and mental healing may be useful in stabilizing the periodontal condition of these patients.

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Ref no: EUABS065379

Long-term evaluation of bone density at extraction sites treated with graft materials using computerized tomography

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Aim: The aim of this study was to evaluate the changes of bone density in human extraction sockets treated with collagene membrane and alloplastic or allogenic grafts in terms of Computerized Tomography Houndsfield Unit.
Material and methods: A total of 52 maxiller extraction sockets from 17 patients (9 male, 8 female) were included in the study. Forty-one single-root sockets were randomly treated with Demineralized Freeze Dried Bone Allograft and collagene membrane (DFDBA; $n = 14$), Hidroksiapatite and collagene membrane (HA; n: 14) or only with collagane membrane (BM; $n = 13$). Eleven sockets were left empty as a control group (B; $n = 11$). At baseline (10 days after extraction) and 4 months later, dental CT scans were taken and intra-socket HU values were obtained. The changes in mean HU values between and within groups at baseline and 4 months postoperatively were analysed.
Results: The baseline mean HU values in the DFDBA group (156.51 ± 65.60 HU) were significantly higher compared to BM (45.68 ± 51.80 HU) and B groups (55.30 ± 73.24 HU), and mean values in the HA group 348.49 ± 151.42 HU) were significantly higher compared to all other groups ($P < 0.05$). At 4 months only the HA group's HU values (642.04 ± 217.74 HU) were significantly higher than other groups ($P < 0.05$).
Conclusion: The results from this study suggest that all treatment modalities are effective in terms of improving the density values, but the highest improvement was achieved in the HA grafted sockets.

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Ref no: EUABS065380

Association of the polymorphism -597 in the IL-10 gene with generalized aggressive periodontitis in Turkish population

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Aim: Interleukin (IL)-10 is an anti-inflammatory cytokine and a B-cell proliferation factor which regulates immune responses. Promoter polymorphism of the interleukin-10 gene has been associated with altered interleukin-10 expression. The aim of the present study was to investigate the genetic association of described interleukin-10 polymorphism in patients with generalized aggressive periodontitis (GAgP) in Turkish population.
Material and methods: Samples of venous blood were obtained from 101 patients with generalized GAgP and 89 age-matched healthy subjects. The IL-10 promoter sequences at position -597 were amplified by polymerase chain reaction (PCR), and the PCR-RFLP technique was used to investigate the polymorphism. Genotype and allele frequencies were calculated, and data were analyzed using the Mann–Whitney U test.
Results: There was a statistically significant (P 0.05) difference at position -597 C to A between patients with generalized aggressive periodontitis and healthy controls.
Conclusion: We conclude that the IL-10 gene polymorphism at position -597 seems to be associated with generalized aggressive periodontitis in Turkish population. The results in this study suggest an active role of IL-10 in the pathogenesis of periodontal disease. This study was supported with project number 485 by Scientific Research Projects Department of İstanbul University.

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Surgical treatment of two patients with osteonecrosis associated with bisphosphonate use and follow-up over two years

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Aim: Bisphosphanates (BP) inhibits osteoclastic activity and commonly used in treatment of malignant hypercalcemia in cancer patients with bone metastases. Osteonecrosis of the jaws (ONJ) related with BP have been reported, however treatment options have been controversy.
Materials and methods: Case 1: A 68 year-old patient with multiple myeloma who had been taking Zoledronate® for 2 years and Clondronate® for 5 months, presented asymptomatic osteonecrosis (ON) lesions at two sites in maxilla and one site in mandibula.Case 2: A 79 year-old female with breast cancer who had been using Zoledronate® for 2 years, presented painful, ulcerated, necrotic and exposed bony lesions in mandible.
Results: Both patients were treated surgically under local anesthesia, ON lesions were removed. Healing was uneventful with complete soft tissue closure. In case 1, two new sites with ON were seen and treated similarly, but one site in mandible was still exposed. In case 2, recurrence of ON was seen in the same site and treated surgically. Two years later, patient presented with hyperesthesia related to ON expanding distoapically affecting the alveolar inferior nerve.
Conclusions: Osteonecrosis cases are related to the use of IV forms of BP's and seen at postextraction sites. Patients receiving BP's treatment should be monitored closely by dental professionals before, during and after the medication period in order to decrease incidence of ONJ and their negative effects on patient's quality of life.

552

Ref no: EUABS065396

Surgical exposure and mechanical extrusion of unerupted teeth as part of the orthodontic treatment in a young patient with cleidocranial dysplasia

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Background: Cleidocranial dysplasia (CCD) is a rare congenital disorder with variably expressed skeletal malformations. Dentomaxillofacial anomalies of CCD include maxillary hypoplasia, supernumerary teeth, retention of the primary and delayed eruption of the permanent dentition. The purpose of this report was

to discuss the surgical exposure and orthodontic extrusion of unerupted permanent teeth as part of the ongoing comprehensive treatment of a 14-year old boy with CCD.
Methods: Periodontal surgery was utilized to expose the unerupted upper permanent incisors. The respective deciduous teeth were extracted and a full-thickness flap was elevated. The crowns of the successors were uncovered, two supernumerary teeth were extracted, and eruption appliances were bonded on the central incisors while the crowns of laterals were left exposed. Forced eruption was initiated with light orthodontic forces.
Results: The surgical intervention allowed full eruption and proper alignment of the impacted teeth in the dental arch with significant improvement in the patient's self-esteem and quality of life.
Conclusion: The dental treatment of CCD aims at the establishment of a normal permanent dentition in a state of periodontal health, comfort, functional occlusion, and esthetics. Surgical uncovering and orthodontic traction of impacted permanent teeth, interdisciplinary collaboration and temporal coordination are important components of an appropriate treatment plan for the management of CCD.

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Ref no: EUABS065416

Vulvovaginal-gingival-skin lichen planus syndrome combined with severe periodontal disease: case report

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Chronic periodontitis a bacterially induced chronic inflammatory disease, characterized as the destruction of periodontal ligament, alveolar bone and cementum. In 1999th International workshop on the classification of periodontal diseases, the non-plaque-induced gingival lesions include the manifestation of systemic conditions. The vulvovaginal gingival syndrome is an uncommon, severe variant of lichen planus characterized by erosions or desquamation of vulval, vaginal and gingival mucosae with scarring and stricture formation.
Case report: A 68-year old woman came to our practice, with severe pain and burning in the mouth and BOP 3–4, history of high blood pressure and pain in the vulvo-vaginal area. Clinical examination revealed desquamative gingivitis, hyperkeratotosis of marginal gingivae, severe periodontitis, ulcerated areas on the bucall mucosa, skin papular rash. Symptoms were present for 6 to 8 months. Anamnesis revealed vulvovaginal mucosal pain and burning. Incisional biopsy on bucall and gingival mucosa gave a diagnosis of oral lichen, and histological picture of hyperkeratosis, thickening of the granular cell layer, liquefaction degeneration and subepithelial band of lymphocytes. Skin and vulvovaginal lichen were detected. Patient was put on systemic corticosteroid therapy, with additional local antifungal agents, for 2 months. With symptom receding, she is now on topical corticosteroids and is undergoing periodontal therapy.

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Ref no: EUABS065478

Treatment of gingival asymmetry with periodontal surgical procedure: case presentation

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The changes in periodontal tissues, primarily in gingiva, are caused by dental plaque and other local factors such as caries, orthodontic anomalies, and iatrogenic, as well as general factors. Patient LN, age 26, was having complaints of esthetic nature – gingival asymmetry around tooth 11 compared with the gingiva of tooth 21. The clinical examination revealed gingival enlargement, caused by cumulative action of both dental plaque and iatrogenic factor – inadequate crown, also with asymmetric esthetic gingival appearance. Periodontal surgical procedure was undertaken and another fixed crown was made for the tooth 11, though removing the proliferative changes from gingiva, and fulfilling the esthetic aspect. The maintenance of the results was controlled after 18, 36 and 60 months.

555
Ref no: EUABS065481

Treatment of anatomical mucogingival anomalies with periodontal surgery

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The changes in periodontal tissues, primarily in gingiva, are caused by dental plaque and other local factors such as caries, orthodontic anomalies, mucogingival anomalies and iatrogenic, as well as general factors. Patient LK, age 31, was having complaints of esthetic nature – gingival recession in the region of the tooth 41. Periodontal surgical procedure was undertaken with the increase of the vestibular depth in the region of teeth 32–42. The maintenance of the results was controlled after 3, 5 and 12 months.

556
Ref no: EUABS065476

Surgical treatment of periodontal abscess: a 5-year follow-up: case presentation

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Introduction: Periodontal abscess is localized circumscribed purulent inflammation as a complication of the periodontal disease accompanied with pain. Treatment consists of antibiotics prescription and drainage of the abscess.
Material and methods: Patient NN, male aged 42, had complaints of esthetic nature of gingival enlargement in the region of frontal teeth. Clinically it was diagnosed as chronic periodontal abscess of the teeth 11, 21. The treatment consisted of surgical intervention with flap Widman – modified of the mentioned region.
Results: Following the surgery, subjective complaints disappeared and clinically the health of the periodontal tissues was obtained.
Conclusion: Postoperative check-ups showed the maintenance of the results of the treatment.

557
Ref no: EUABS065583

The effect of high glucose on gene expression patterns during mineralization of human periodontalligament cells *in vitro*

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It has been well known that diabetic patients show high prevalence of periodontal diseases and delayed wound healing. This study was performed to determine the effect of high glucose concentration on gene expression patterns during mineralization of PDL cells. PDL cells were cultured in 1100 mg/L (normal) or

4500 mg/L (high) glucose for 21 days. On day 1, 7, 14 and 21, Alizarin Red S staining was performed to observe the nodule formation. Real time PCR was performed for C-myc, Col I, ALP, BMP-2, Cbfa1 and OC to observe the gene expression pattern. To compare the expression levels of bone-related proteins of PDL cells between 2 groups, Real time PCR was performed for Col I, ALP, BMP-2, 4, Cbfa1 and OC on day 7 and 14. On day 1 and 7, no mineralized nodule was observed. On day 14, 2.31% and 1.06% calcified area of culture dish was observed in normal and high glucose group, respectively. On day 21, 31.83% and 6.65% calcified area of culture dish was observed in both groups. Gene expression of bone-related proteins showed similar patterns in both group. But high glucose group was decreased Col I, BMP-2, 4 and OC expression levels compared to normal group on day 7 and 14. In conclusion, we supposed that the differences of gene expression levels of Col I, BMP-2, 4 and OC between normal and high glucose groups are responsible for compromised wound healing and periodontal regeneration in diabetic patients.

558
Ref no: EUABS065519

Clinical outcome regarding surgical periodontal treatment with a bovine-derived xenograft

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Aim: The objective of this study is to evaluate the clinical outcomes following treatment of infrabony defects either with BDX alone or in combination with a collagen barrier membrane.
Matherial and methods: We studied 43 patients to whom had been made the regenerative procedures of infra bony alveolar defects using a deproteinised BDX between the years 2005 and 2008. In total, 168 teeth were treated either with BDX alone or in combination with a collagen membrane. The data have been clinically verified during surgery after debridement of the site.
Results: One year after therapy, the 127 regeneratively treated periodontal sites investigated showed an average reduction in PPD of 3.02 ± 1.93 mm. Also the 152 regeneratively treated teeth showed an average CAL gain of 3.29 ± 2.01.
Conclusions: The presented periodontal regenerative procedure using bovine-derived bone mineral either in combination with a collagen barrier membrane or without, leads to significant PPD reduction and CAL gain.

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Ref no: EUABS065537

The agressive periodontits

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Aggressive periodontitis represents complex form of periodontitis, which can be seen in otherwise healthy young individuals. It is characterized by severe attachment loss and bone destruction. This destruction may suggest highly virulent micro flora and/or particularly susceptible host. Genetic and environmental factors (war experience, smoking and stress) are strongly associated with severe periodontal destruction. Probing depth, gingival recession, and clinical attachment level (CAL) should be evaluated at baseline, 6 and 12mt, 2 and 3 year after treatment. The primary outcome is CAL. Currently, mechanical debridement and adjunctive antimicrobial th. are in use, following surgical th. This may eliminate potential niches for bacterial re-colonization. Research evidence suggests that following treatment patients may present high risk for additional periodontal brake down despite maintenance. From the pool of patients with AP, we will show some of extreme: 1) 12-year-old boy presented with generalized gingival inflammation, extensive localized bone loss, and mobility of 32, 31, 41, 42, as well as the beginning of bone loss in the first molars. 2) 29-year-old male presented with the loss of bone and periodontal ligament in the frontal region and upper first molars. 3) 34-year old female, presented with periodontal defect in frontal region, upper first molars and extracted lower first molars. 4) 38-year-old female, with massive periodontal bone destruction. All followed for 2–3 year.

560
Ref no: EUABS065549

Subepithelial connective tissue grafts and a modified suturing tunnel technique to increase keratinised gingiva and root coverage: case series

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Background: This case series describes the successful outcome of increased keratinised gingiva and root coverage in patients treated using subepithelial connective tissue grafts (SCTG) and a modified suturing tunnel technique carried out in a single stage. This simple suturing technique aims to obtain maximum coverage of the SCTG at the recipient site by the overlying flap to enhance an increased blood supply to the SCTG.
Methods: Cases involved single and multiple recession defects with limited keratinised gingiva. The supraperiosteal envelope was created in the defect by split-thickness incision for single defect and a tunnel approach for multiple defects. The SCTG was seated in the envelope created around the denuded root surface. The graft was secured and positioned to the cemento-enamel junction. The overlying flap mesial and distally to the recession defects was approximated using single interrupted sutures to cover the donor tissue maximally.
Results: There were improvements in attachment level, gingival recession and keratinised gingiva up to 6 months. The mean initial gingival recession was 3.4 mm. The mean root coverage was 2.4 mm and the mean increase in keratinised tissue was 2.25 mm.
Conclusion: Within the limit of this case series, the SCTG with a modified suturing tunnel technique could improve the predictability of obtaining an increased keratinised gingiva and root coverage by enhancing the blood supply to the SCTG.

561
Ref no: EUABS065925

Flap thickness as a predictor of root coverage with subepithelial connective tissue grafts

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Aim: The aim of the study is to evaluate the possible effect of keratinized tissue /flap thickness around recession defects on root coverage. The study is designed to statistically analyse and compare the clinical success of SCTG with CAF procedure in 37 Class I defects of 37 subjects previously grouped as having either ''thick'' or ''thin'' periodontal phenotypes.
Material and method: In both groups, defects were treated with the same surgical approach. PI and GI scores, RD and RW and WKT were recorded on baseline, 6 week, 3, 6, 9 and 12 months. PD, CAL, TKT of defect was recorded on baseline, 3, 6, 9 and 12 months. Amount of root coverage was measured on 3, 6, 12 months.
Results: When compared to baseline, there was statistically significant decrease in CAL, RD and RW; and a significant increase in

PD, width and thickness of gingiva in both groups. The thickness was the highest on 3rd month, decreased till 9thmonth and then became stable. 12 month root coverage was 77%, 94 ± 28.89 and 20 of 37 defects had complete root coverage. There was no significant difference in root coverage among two phenotypes on 12 month. According to phenotypes, only defects of thin group's baseline keratinized gingiva thickness was positively correlated with the amount of group's root coverage.
Conclusion: ''SCTF with CAF procedure'' is successfull in treating localized gingival recessions and success of root coverage is influenced by a treshold flap thickness of thin phenotype group.

562
Ref no: EUABS065917
Chronic ulcerative stomatitis (CUS) – two cases report
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Chronic ulcerative stomatitis (CUS) is a mucocutaneous disease primarily involving mucosal surfaces, but occasionally may involve the skin. Clinically, CUS patients exhibit erosive or ulcerative lesions of the oral mucosa that resemble erosive oral lichen planus, with painful or ulcerative. Chronic ulcerative stomatitis is a newly recognized disease of unknown origin which presents clinically with features of desquamative gingivitis. Direct immunofluorescence (DIF) studies of mucosal or skin biopsies reveal a unique pattern of IgG immunoglobulin bound to nuclei of keratinocytes of the basal and lower one third cell layers, the stratified epithelial specific (SES) antinuclear antibody (ANA) pattern. Patient sera also exhibit circulating SES-ANA reactions on indirect immunofluorescence (IIF) using an esophagus substrate. An important reason to distinguish CUS from other oral ulcerative conditions is that it may be refractory to standard treatments with topical corticosteroids.

563
Ref no: EUABS065879
Connective tissue graft loss in dental trauma: a report of a case
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Dental trauma can have problems in the teeth before and above all by absences. In this case the absence of item 21 was by motorbike accident 3 years ago, the patient wears a removable prosthesis. He has lost vestibular contour and vestibular edge of collapse with some loss vestibular cortical bone loss. That is why one chooses to use a connective graft, since some of the entries to use are the defects of the alveolar ridge and contour defects. This will improve the aesthetic appearance of the area. At the same surgery, an implant is placed in the piece 21 and the connective tissue graft. The removable prosthesis is worth as provisional.

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Ref no: EUABS065880
Tunnel flap technique with free connective tissue graft in order to gain thickness of peri-implant marginal soft tissue
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Aims: The tunnel flap technique (TFT) (Allen, 1994) with connective tissue graft (CTG), which implicates a coronal reposition of the gingiva by using an intrasulcular access and supraperiostal preparation without division of papillae and vertical releasing incisions, represents a possibility to thicken marginal gingiva. This case shows the procedure of thickening the marginal soft tissue at an implant with miller class III recession and the observation over 18 month.
Materials and methods: In a 31 year old patient with localised peri-implant mucositis (region 11) with dark marginal mucosa created by the implant shimmering through the thin soft tissue two month after scaling and root planning thickening of the soft tissue was performed using TFT with CTG. Three month postoperative a new crown was inserted. After 18 month clinical parameters were reevaluated.
Results: The wound healing showed no complications. Clinical reevaluation showed a reduction of mean PPD from 2.5 mm to 1.0 mm. Recession remained unchanged. Mean clinical attachment level improved from 2.5 mm to 1.0 mm. The marginal soft tissue was coloured like the surrounding tissue. In contrast to the pre-operative mucosal tissue a stable fibrous peri-implant situation was presented.
Conclusion: Our case presentation shows the possibility to thicken marginal soft tissue with changing unfavourable mucosal into resistant peri-implant tissue using TFT with CTG. The observation of 1.5 years shows stable results.

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Ref no: EUABS065883
Severe congenital neutropenia – 3 years of observation
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Severe congenital neutropenia is a rare disorder with onset very early in life. Patients typically present with symptoms of recurrent infections in the first months of life. G-CSF (granulocyte colony-stimulating factor) treatment of SCN reverses neutropenia but is not effective in treatment of periodontitis. The present study reports the clinical and laboratory findings of polish 6 years old girl. During the cours of illness our patient developed severe periodontitis.

566
Ref no: EUABS065783
Comparison of Er: YAG laser and conventional periodontal treatment in a patient representing with severe gingival lesions: 2-year follow-up: a case report
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This case report describes a 2 year follow-up of a 30 year-old, female, chronic periodontitis patient presenting with severe gingival inflammation,sensitivity,pain and acute gingival lesions that was treated with Er:YAG laser and conventional hand and ultrasonic instruments which were compared clinically and microbiologically.Before the initial periodontal treatment;microbiological samples were taken from the sites of the lesion with sterile-paper points from the sulcuses bilaterally and excisional biopsies were obtained from the lesions. After the diagnostic tests were performed, the lesions were diagnosed as acute streptococcal gingivitis.Following the measurement of clinical indices, initial periodontal therapy was performed with Er: YAG laser on the right side and conventional hand and ultrasonic instruments on the left side which was performed as two sessions with weekly

intervals.As an adjunct to mechanical periodontal therapy, 500 mg amoxicillin was prescribed tid for a week. Microbiological samples grew mostly *Streptococcus sp.* and black pigmented obligate anaerobic bacteria.The histopathological examination revealed a mononuclear inflammatory cell infiltrate within the lamina propria.After the initial periodontal treatment clinical and microbiological measurements were repeated and reductions in clinical indices and the number of microorganisms were observed.No difference was found between two treatment modalities and no recurrences were observed after 2 year-follow-up.

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Ref no: EUABS065766

Severe periodontitis and early tooth loss associated with hypophosphatasia: report of two cases

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The purpose of this report was to describe 2 cases of aggressive periodontitis associated with hypophosphatasia in a 7-year old girl and a 5-year old boy who were siblings.A detailed past history was obtained and clinical, biochemical, microbiological and immunological examinations as well as treatment procedures were carried out.Early loss of decidious teeth especially anterior incisors and bone loss at the rest of the dentition were observed in both of the cases.With the exception of periodontitis, 7-year old girl did not have any systemic disease whereas the brother had propensity to infections since he was born.Consanquinity existed between parents.Both of the cases demonstrated a high proportion of gr(-)obligate anaerobes in the subgingival flora. Biochemical test results were almost within normal levels except for serum alkaline phosphatase lower than the normal limits and high phosphoethanolamine levels in the urine.The burst and phagocytic activity of PMN were within normal ranges.Mechanical periodontal therapy supplemented with local minocycline administration and esthetic space maintainers were performed as the choice of treatment.Space maintainers re-established oral functions, esthetic and phonation.They were followed up for 5 years.Extraction of hopeless teeth plus daily plaque control together with subgingival scaling/root planing and adjunctive antibiotics together with frequent recall sessions help to prevent severe damage to the remaining teeth.

568
Ref no: EUABS065762

Management of localized aggressive periodontitis in monozygotic twins: a case report

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The observation of really different periodontal conditions between patients with identical dental plaque and calculus deposits has for a long time brought out the importance of genetic factors in periodontal disease pathogenesis. The high levels of *Aggregatibacter actinomycetemcomitans* in patients with localized aggressive periodontitis, associated with the significant decrease of the effectiveness of cells defense, seem to initiate the imbalance between bacteria and host defenses. This poster reports the case of 20 years old monozygotic twin brothers affected by localized aggressive periodontitis. Both received the same treatment (antibiotics and roots surface debridement) that led rapidly to identical clinical and microbiological parameters improvement. The similarity of periodontal parameters between both brothers at the beginning and at the end of the treatment is astonishing. This clinical report illustrates the importance of genetic polymorphisms for the susceptibility of periodontal disease and for the host ability to have a positive response to the treatment. As it was demonstrated by recent publications, the early microbiological or genetic screening of subjects could constitute a decisive element in anticipating periodontitis. As with all diseases, the more it can be prevented, the higher chance we have to treat it efficiently.

569
Ref no: EUABS065806

Orthodontic lingual technic for gingival recession treatment

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Gingival recession is a complex phenomenon.The aim of mucogingival surgery is to correct tissue defects. In accord to Miller Classification (1985), root coverage results can be predictable regarding to the anatomy of the area. This includes the width of keratinized and attached gingiva, the facial-to-lingual dimension of both soft tissue and alveolus, and the position and angulation of the teeth. If the teeth are out of the envelope of the alveolar process, with alveolar bone dehiscence and thickness of the marginal soft tissue, the risk for recession is important. Many techniques have been introduced to treat gingival recession, with optimal results including connective tissue grafting and various flap designs. But lots of failures are relied to tooth malposition. The aim of this comunication is to put forward the importance of the patient examination, particularly position or angulation of the teeth in the alveolar bone. An adequate orthodontic therapy, with controled tooth movement, can improve periodontal tissues and thus improves the esthetical outcome. In some cases, lingual orthodontics is suggested to lead to an improved periodontal récession without preorthodontic gingival augmentation.

570
Ref no: EUABS065795

Uncommon location of unicystic ameloblastoma of the mandible: a 1-year re-entry case report

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Background: Ameloblastoma is a locally invasive tumor of epithelial origin localized in the jaws representing 11% of the odontogenic neoplasms. This report presents an unusual location of unicystic ameloblastoma between the roots of a right mandibular canine and a first premolar with clinical and radiological features similar to those of a cyst.
Materials and methods: This case report describes a 48-year-old white male with a slow-growing vestibular hard swelling in the 4.3–4.4 area. Radiographs revealed a well-circumscribed radiolucency between the endodontically treated teeth. Differential diagnosis is among cystic lesions such as lateral periodontal cyst or odontogenic keratocyst and neoplastic processes such as ameloblastoma. A complete enucleation of the lesion associated to a thorough root planing of the adjacent roots was done.
Results: Histological analysis revealed ameloblastomatous epithelium lining with a plexiform pattern leading to the diagnosis of a unicystic ameloblastoma. At the 1-year surgical re-entry, an almost complete bone fill of the defect was found. Radiographs taken at 2-years post-operatively show a recovery of the bone defect and so far no sign of recurrence occurred.

Conclusions: In order to establish a definitive diagnosis for non-inflammatory radiolucent lesions associated with the roots of mandibular canines and premolars a histopathologic examination is mandatory. For ameloblastoma a longer follow-up is important to detect any sign of relapse.

571
Ref no: EUABS064942

Evaluation of pain levels after Nd: YAG laser and scalpel incision wounds on rat hind paw

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Postoperative pain is a recognized sequel of periodontal surgery. The pain experience has been shown to peak in the first 24 hours following the procedure, and to decrease rapidly in subsequent days. The aim of the present study was to evaluate the pain levels following scalpel- and laser-incised rat hind paw. The study was carried out on 10 albino Wistar male rats. Rats were randomly assigned to 2 groups: Group I (n = 5, surgery with scalpel), Group II (n = 5, laser surgery). For measuring mechanical hyperalgesia, the nociceptive thresholds of the hind paw after mechanical stimulation were quantified with a Basile algesimeter. Each rat was gently held with a hind paw placed under a pressure pad. The force, in grams, applied to the paw was increased at a constant rate until the rat withdrew its paw. The measurements were done before the surgery and on the postoperative 1st, 2nd, 4th, 7th, and 10th days. While the pain levels of the groups were similar before the surgical procedures, the laser-applied rats had significantly fewer nociceptive thresholds compared with the scalpel incised rats on the postoperative 1st, 2nd, 4th, and 7th days. Functional complications were not also observed in the laser groups at the post-operative three days. The results suggest that for soft tissue surgery Nd: YAG lasers have led to better patient acceptance, often less operative time, less pain and fewer postoperative adverse events.

572
Ref no: EUABS064952

A study on the toxic effects of chx on human lymphocytes *in vitro*

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Chlorhexidine digluconate (CHX) is a common chemotherapeutic agent used in dental practice. After administration, chlorhexidine is absorbed by the oral mucosa and the gastrointestinal tract, and may be transported to the liver, kidney and urinary bladder until it is ultimately excreted. Although the clinical benefits of CHX have been proved in several trials, even in low concentrations, data about its genotoxic potential and biochemical effects are still conflicting. It was reported that CHX has toxic potential on a variety of cell types such as gingival fibroblasts, epithelial cells, macrophages, neutrophils, and red blood cells in culture. Topical application of CHX was reported to result in its penetration through the epithelial barrier, causing tissue damage. Moreover, the breakdown products of CHX, i.e., parachloroaniline, have also been considered to be mutagenic. Although several studies have indicated the toxic potential of CHX, its *in vitro* effects on human tissues is still obscure. The aim of this study was to investigate the genotoxic effect of CHX on human peripheral lymphocytes. Micronuclei (MN) rates and nuclear division index (NDI) were assessed in control and CHX-treated (0.05, 0.1, 0.2 and 0.4 mmol/l) human whole blood cultures. The results showed that the rates of MN formations and NDI in peripheral lymphocytes were not changed by CHX compared to controls. Our findings clearly showed that CHX has not genotoxic activity *in vitro*.

573
Ref no: EUABS064998

Periodontal abscess: etiology, diagnosis and treatment

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The periodontal abscess is an acute destructive process in the periodontium resulting in localized collections of pus communicating with the oral cavity through the gingival sulcus or other periodontal sites and not arising from the tooth pulp. The prevalence of periodontal abscess is relatively high and it affects the prognosis of the tooth. Periodontal abscesses can develop on the base of persisting periodontitis but can also occur in the absence of periodontitis. Diagnosis of a periodontal abscess is based on medical and dental history as well as oral examination (pocket depth, swelling, suppuration, mobility, sensibility of the tooth). The most prevalent group of bacteria: *P. gingivalis, P. intermedia, B. forsythus, F. nucleatum* and *P. micros*. Previous studies have suggested that the complete therapy of the periodontitis patients with acute periodontal abscess has to do in two stages: the first stage is the management of acute lesions, then the second stage is the appropriate comprehensive treatment of the original and/or residual lesions.The aim of our work is to illustrate with clinical cases diagnosis and management of acute periodontal abscess.

574
Ref no: EUABS065000

The combined endodontic-periodontal lesions

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The combined endodontic-periodontal lesions are the result of the coexistence of an endodontic lesion and a periodontal lesion in the same tooth. It appears habitually in generalised periodontitis context. The diagnosis of these diseases is easier since it's based on some investigations, especially: pulp tests, periodontal probing and radiographies. The combined endodontic-periodontal lesions treatments required the association of an endodontic treatment at first, followed by a complete periodontal therapy; a regular assessment is necessary to evaluate the results and to prevent eventual complications. The present communication, trought a clinical cases, try to explain the appropriate protocol for diagnosis and for treatment of these lesions.

575
Ref no: EUABS065002

Prevention of bone loss by the filling of alveoli after dental extractions

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Periodontal disease is characterized by the presence of gingival inflammation periodontal pocket formation, and loss of connective tissue attachment and alveolar bone around the affect teeth (Listgarten & coll 1986). This reduction in the amount and quality of the hard tissues can produce complex irregularities and abnormally thick. Prosthetic restoration in such sites produces functional and aesthetic limitations. Several surgical procedures

have been described in the literature in order to improve final results. In this study, we have used bovine-derived xenograft (Bio-oss) witch is reliable way to restore good the anatomical conditions before prosthetic restoration (Hanna & coll 2004).

576
Ref no: EUABS065012
Periodontal manifestations of leukemia
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The present paper takes a clinical and histopathological point of view in determining the main morphological and clinical characteristics of the gums and periodontium in leukemic patients. This study is mainly based on patients interned in the medical specialty clinics which have been diagnosed as having one of the four main types of leukemia: acute myelogenous leukemia, acute lymphoblastic leukemia, chronic myelogenous leukemia and chronic lymphocytic leukemia. 1) Periodontal lesions investigated prior to antileukemia treatment n lesions at the level of the periodontium directly caused by leukemia: gingival swelling, ulcerations n lesions at the level of the periodontium indirectly caused by leukemia, as a result of thrombocytopenia, anemia, and neutropenia 2) Manifestations at the level of the oral mucosa, secondary to treatment n manifestations directly caused by chemotherapy – inflammation of the mucosa or gingivostomatitis caused by chemotherapy drugs n manifestations indirectly caused by chemotherapy, as a result of peripheral pancytopenia.
Conclusions: The dental physicial is often required to evaluate pathological lesions representing the first signs of leukemia; therefore the dental physician can play an essential role in the early identification of the general medical condition, which will undoubtedly improve the results of subsequent specialized treatment of the disease.

577
Ref no: EUABS064995
Overdenture – effects on gingival epithelium
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Background: The full edentulous patient may have modifications of the gingival epithelium due to specific prosthesis they wear. In case of the overdentures we also concern about the health of the gingival tissue around the implants.
Objective: Determining wether full dentures or overdentures has much effect on gingival health.
Methods: A number of fully edentulous patients, unimaxillary or bimaxillary, aged 46 – 59, both male and female, wearing full denture or overdenture for 8 – 12 months, were included in this study. Neither of them had worn any full denture before. All the cases had an 8 – 10 months postextractional healing period. Overdentures have been done after osseointegration. All the patients were instructed to mantain thorough hygiene of both oral cavity and prosthetic pieces.
Results: The gingival epithelium of the patients wearing overdentures appeared helathyer than that of the patients with classical full dentures.
Conclusions: Although the presence of dental implants might be considered as a risk factor for growing bacterial plaque, it had been proven that more epithelial modifications occur in patients with full dentures compared with those having overdentures.

578
Ref no: EUABS065037
Prevention of bone loss by the filling of alveoli after dental extractions
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Periodontal disease is characterized by the presence of gingival inflammation periodontal pocket formation, and loss of connective tissue attachment and alveolar bone around the affect teeth (Listgarten & coll 1986). This reduction in the amount and quality of the hard tissues can produce complex irregularities and abnormally thick. Prosthetic restoration in such sites produces functional and aesthetic limitations. Several surgical procedures have been described in the literature in order to improve final results. In this study, we have used bovine-derived xenograft (Bio-oss) witch is reliable way to restore good the anatomical conditions before prosthetic restoration (Hanna & coll 2004).

579
Ref no: EUABS065046
Intrusion of migrated incisors with infrabony defects in aggressive periodontitis
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Orthodontic treatment in patient who has advanced aggressive periodontitis can be performed by a team of clinicians, using multidisciplinary approach to re-establish dentitions that are compromised both aesthetically and functionally. With proper periodontal treatment and regular maintenance therapy, teeth with advanced periodontitis and migration may not experience additional loss of bone support or attachment with orthodontic treatment (Artun 1988). Clinically, a tooth with a proximal defect until there is no further radiographic or clinical evidence of predisposing defect (Nevins et al. 1990). In cases of pathologic migration and extrusion, intrusive movement has been recommended to realign the teeth and improve clinical Crown lengths and proximal infra bony defect, and can positively modify both the alveolar bone and the soft periodontal tissues (Cardaropoli et al. 2001) (Corrente et al. 2002). The aim of this work is to evaluate the impact and efficacy of combined orthodontic-periodontic treatment to intrude pathologically extruded teeth having infra bony defect that are result of aggressive periodontitis.

580
Ref no: EUABS065050
Generalised aggressive periodontitis: a case report
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Aggressive periodontitis have the particularity to evolve rapidly, with all their functional and aesthetic consequences if an appropriate therapy is not implemented at the earliest onset of the signs. A systemic screening of aggressive periodontitis led the Practitioner to a rational diagnostic and appropriate therapeutic approach (Hermann et al. 2001). Aggressive periodontitis requires a perfect collaboration between several therapists. The development of the treatment plan involves a diagnosis course and establishes a more reliable prognosis as possible especially in the presence of teeth with prognosis reserved. The contribution of orthodontics should also be taken into account insofar one of the first reasons for consultation of patients with aggressive periodontitis are the dental migration, in relation with a severe bone

resorption (J.-L. Giovannoli 2001). Through this clinical case, the different steps of the care of a patient with generalised aggressive periodontitis will be reviewed with a decline clinic 2 years.

581
Ref no: EUABS065077

Antibiotics prescription after perioodontal surgery: yes or not

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The aim of this study was to evaluate the effect of prophylactic prescription of amoxicillin (Regimen B: 2 g 1.5 hour before surgery compared with conventional dosage (Regimen A: 500 mg tid) on post surgical complication. A double blind randomized split mouth design study conducted on 22 patients. (6 male, 16 females, mean age 29.7 ± 5.26) with severe periodontitis who were refered for periodontal surgery. All the patients must have at least two quadrants with equal disease severity in one dental arch which needed periodontal surgery. After surgery, patients randomly recieved one of the two antibiotic regimens. Post surgical complications like pain, swelling and bleeding were recorded. Our study showed pain and swelling reduced by (A) regimen (poly dosage) but the differences were not significant. The overall result indicates that the risks of post operative complication's and pain after periodontal sergeris are minimal. With regard result of this study and considering the cost and hazards of consuming antibiotics, theirs routine use during or following periodontal surgery must be questioned.

582
Ref no: EUABS065063

Aesthetic options for severely periodontally compromised dentitions

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Patients with severe periodontal disease often exhibit tooth mobility with drifting, spacing, occlusal trauma and possible pain. This may impact on mastication, speech and aesthetics in the anterior region, with possible psychological implications. Periodontal splinting using fiber reinforced composite splints have been successfully used to stabilize mobile teeth. These splints are chemically integrated with superior bonding, durability and aesthetics. We report three cases using pre-impregnated everStick™PERIO glassfibre splints to replace missing anterior teeth either using the patient's own teeth as natural pontics or composite teeth with fibre reinforcement. Adults presenting with advanced chronic periodontitis were selected. They presented with over erupted, mobility grade III upper anterior teeth with compromised function and aesthetics. Patients were clinically and radiographically assessed, followed by provision of a course of non surgical treatment. Once periodontal status was stable, hopeless teeth were extracted under local anaesthetic and carefully prepared as natural pontics. The periodontal splint, bearing either the natural or artificial pontics, was bonded to the palatal surfaces of adjacent teeth. Use of everStick™ PERIO glassfibre splints represent a semi-permanent, affordable and aesthetic alternative to other conventional methods, including implants and bridges, for the replacement of missing anterior teeth in periodontally compromised individuals.

583
Ref no: EUABS065065

Reconstruction of the maxillary papilla following a combined orthodontic periodontic treatment in aggressive periodontitis

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The presence of inter proximal papilla is a topic of concern both for clinicians and patients. The absence of papillary height is the sequala of periodontal disease as well as the response to periodontal treatment. Often, periodontal disease can lead to the migration of involved teeth with flaring and space opening in the frontal region ssevere functional and aesthetic problems. Pathologic extrusion of periodontally involved teeth can be treated by orthodontic intrusion in order to re-establish the physiologic clinical crown length and to shorten the distance between the cemento–enamel juction and the marginal bone level (Melsen et al. 1989). Tarnow and al (1992) have demonstrated that the most significant factor in determining the presence of interdental papilla is the distance from the contact point to the crest of the bone. Certainly intrusive movement together with space closure is able to give a new contact point or to move apically the contact point between two elongated and spaced teeth, reducing the distance with the crest of the bone and enhancing the papilla possibilities to refill the inter proximal embrasure(Cardaropoli et al 2004).The aim of this work was to evaluate the impact of combined orthodontic periodontic treatment in reconstruction of the interdental maxillary papilla of advanced case of aggressive periodontitis.

584
Ref no: EUABS065099

Prevention of bone loss by the filling of alveoli after dental extractions

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Periodontal disease is characterized by the presence of gingival inflammation periodontal pocket formation, and loss of connective tissue attachment and alveolar bone around the affect teeth (Listgarten & coll 1986). This reduction in the amount and quality of the hard tissues that can produce complex irregularities and abnormally thick. Prosthetic restoration in such sites produces functional and aesthetic limitations. Several surgical procedures have been described in the literature in order to improve final results. In this study, we have used bovine-derived xenograft (Bio-oss) witch is reliable way to restore good the anatomical conditions before prosthetic restoration (Hanna & coll 2004).

585
Ref no: EUABS064863

An upper central incisor in bucal position treated by orthodontics and periodontics: a case report

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The consequences of deep periodontal affliction are the modifications in teeth position. At our patient, central incisor with bone loss had changed its position, becoming in bucal position and extruded. In order to solve this case, the collaboration between orthodontist and periodontist became a necessity.

Material and method: An adult male with deep periodontitis between 2.1 and 2.6 was used for this study. We decided to extract 2.6 and to treat 2.1. After periodontal preparation, the orthodontic appliance had been performed and after a year we obtained an incisor in a correct position. After this we performed periodontal surgery, using regenerative procedures with amelogenic proteins and bovine bone.
Results: 6 months later, radiography showed the filling of osseous defect and maintaining its correct position.
Conclusions: Using the two types of treatments (orthodontic and periodontal) not only improves the periodontal stability but also gives a better occlusion.

586
Ref no: EUABS064832

Cemental tears and periodontal disease

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The present study is an attempt to determine whether the presence and extent of CAL on dental surfaces having this cemental tears C.T. differ on the opposite intact side of the root.
Methods: Ten teeth with C.T. diagnosis were selected, in the root surfaces with C.T. (test) and in the opposite intact surfaces of the same tooth (control), probing depth and CAL were measured. Differences in CAL between C.T. surfaces and opposite intact surfaces were evaluated through the paired Student *t* test. Regression analysis was applied to in order to analyze the linear relation between loss of attachment on intact root surfaces and surfaces presenting C.T.
Results: All teeth showed a higher CAL in the surfaces with C.T. in comparison to the opposite without cemental tears.The average of attachment loss for the surfaces with C.T. was 10.7 mm. and the opposite was 4.75 mm.This difference was statistically significant.Regression analysis revealed a negative correlation, between the difference of attachment loss of the radicular surfaces with C.T. and the opposite surfaces without C.T. and the attachment loss of the opposite surfaces without C.T.(r = -0.3838) and a positive correlation of attachment loss between the surfaces with C.T. and the ones without C.T.(r = 0.7558, $P < 0.05$).
Conclusion: Under the conditions of this study, C.T has a significant influence in CAL. The data suggest that C.T. could have the potential to initiate an aseptic and rapid periodontal breakdown in specific sites.

587
Ref no: EUABS064839

Favorable healing potential in severe aggressive periodontitis cases: clinical observations

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Background: Many factors influence the response to periodontal treatment such as plaque control, effectiveness of mechanical debridement, antimicrobials adjunction and absence of risk factors (tobacco smoking, diabetes mellitus). Aggressive periodontitis especially in its severe form was considered for a long time to have an unfavorable prognosis, and this was often leading to radical treatments. These case reports showed good results of periodontal treatment.
Observations: Clinical observations of severe aggressive periodontitis cases indicate a high improvement of clinical and radiographic parameters like degree of inflammation, probing depths, furcation defect, and tooth mobility.
Discussion and conclusion: The therapeutic result of severe aggressive periodontitis cases is suggesting that this form of periodontitis can have a good prognosis. Favorable clinical outcomes can be explained by the architecture of periodontal lesions in severe aggressive form of periodontitis (angular lyses, narrow and deep periodontal pockets) and/or effectiveness of antimicrobials to modify the microbiological profile of this form of periodontitis. Studies are needed to clarify the influence of the type of periodontitis and their severity in healing potential after periodontal treatment.

588
Ref no: EUABS064909

Amlodipine induced gingival overgrowth in a diabetic and hypertensive patient: case report

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Drug induced gingival overgrowth is frequently observed as a side effect with the use of several medications. Amlodipine, a third generation calcium channel blocker has been shown to promote gingival overgrowth although in very limited cases reported. The paper presents the case of a 62 years old male patient who was referred to our department. The main reason for presentation was esthetic dysfunction due to gingival enlargement of several months in duration. He was also complaining of spontaneous bleeding and pain due to ulceration of gingival tissue. The medical history revealed a non-treated type II diabetes mellitus with mildly elevated glycaemia and hypertension for which he was under medication with several specific drugs and a calcium channel blocker (amlodipine). After a detailed clinical examination we diagnosed the patient with chronic periodontitis and amlodipine induced gingival overgrowth. The initial therapy consisted in oral hygiene instruction, scaling and root planning and specific antimicrobial therapy followed by gingivectomy and access flap for periodontal debridement. In this case, gingival overgrowth was satisfactorily treated via initial periodontal therapy including oral hygiene instruction and motivation, followed by surgical gingivectomy. This case also demonstrates that without any change in associated drugs, periodontal treatment alone can yield a very good clinical outcome which is maintained after 18 months from the completion of therapy.

589
Ref no: EUABS064924

Self-induced pneumoparotid and pneumothorax: a case report

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The aim of this work was to present atypical disease in dental practise: self-induced pneumoparotid and pneumotorax caused by increased intraoral air pressure. Translocation of air from the oral cavity into the salivary ducts can result in parotid edema, subcutaneus edema, or edema of other anatomical spaces (e.g., mediastinum). Diagnosis of this disorder is difficult and requires differential analysis. Recurrent episodes of parotid edema, especially in adolescents, should include psychiatric consultation in order to exclude psychosomatic background of the disorder. Air-powered drills or other pressurized appliances used during dental and periodontal procedures can introduce air into the potential spaces of the neck and thorax too. As in this case, when a patient has parotid edema and acute shortness of breath, primary care physicians should consider the potencial for barotraumas in addition to other possible conditions.

590
Ref no: EUABS064708
Single flap approach with buccal access in periodontal reconstructive procedures: a case series
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Introduction: Recently, we proposed a minimally-invasive procedure, namely the Single Flap Approach (SFA), specifically indicated when the defect extension is prevalent on the buccal or oral side. The basic principle of the SFA is the elevation of a flap to access the defect only on one side (either buccal or oral), leaving the opposite side intact.
Aim: The present case series reports preliminary data on the clinical effectiveness of SFA with buccal access in conjunction with a collagen membrane and a hydroxyapatite (HA)-based biomaterial in the reconstructive treatment of deep periodontal intraosseous defects.
Materials and methods: Ten intraosseous defects in 10 patients were accessed with a buccal SFA and treated with a collagen membrane and a HA-based graft biomaterial. The follow-up period following the regenerative procedure ranged from 6 to 14 months (mean: 10.0 ± 3.0 months).
Results: Clinical attachment level (CAL) varied from 11.2 ± 2.6 mm pre-surgery to 6.4 ± 1.9 mm post-surgery. Pocket probing depth (PPD) amounted to 9.0 ± 2.8 mm before surgery, and decreased to 3.8 ± 1.5 mm post-surgery. Gingival recession (REC) varied from 2.2 ± 1.9 mm pre-surgery to 2.6 ± 1.3 mm post-surgery.
Conclusions: Challenging intraosseous defects, surgically accessed with a buccal SFA and treated with a combined graft/GTR technique, may heal with a substantial CAL gain. Limited postsurgical recession indicates that SFA may represent a suitable option to treat defects in areas with high aesthetic demands.

591
Ref no: EUABS064339
The condition of periodontium in 27-year old woman with Papillon-Lefevre syndrome – multispecialistic treatment: case study
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Papillon-Lefevre is a genetic disorder. It is characterised by the development of dry scaly patches on the skins of the palms and the soles, the knees and the elbows and of the osteolisis of the bone within the stomatological structure, the result of which is loosening and initially complete falling out of the deciduous teeth, without resorption of their roots, and then complete shedding of permanent teeth, as early as at the age of 16. The period of the remission of pathological symptoms in the oral cavity takes place after the complete loss of the deciduous teeth, which ends together with the eruption of permanent teeth. This paper describes a multispecialistic treatment of a 24-year-old woman who underwent treatment in the University Stomatological Clinic. The radiological examination showed a considerable horizontal atrophy of both the lower and upper jaws (periodontitis simplex) as well as local periodontitis. Periodontological treatment was used in the first phase. Then in order to obtain an optimal occlusion the patient was treated orthodontically, using the upper Schwarz's plate and permanent apparatus in the inferior arch. Afterwards prosthetical treatment was applied. After the occlusive surfice had been corrected porcelain fused to metal brigdes on compressed crowns in a stepline pattern were made. The missing teeth in the superior arch were rebuilt with frame prosthesis. The period of observation is 3.5 years. At present the peridontal condition is satisfactory.

592
Ref no: EUABS064615
Minimally invasive bone surgery
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There is atrophy of the jaws following extraction of the teeth, which complicates prosthetic treatment by implants. We tried to solve this problem by augmentation with autologous bone transplantation using piezosurgery technique and Deproteinized bovine bone mineral (DBBM). Piezosurgery was developed for better, more effective and safe treatment during surgical procedures comparing to classic surgical equipment for sawing the bones. It enables high precise work with low morbidity in osteology. Due to its controlled 3D ultrasound vibrations it opens new therapeutical way of use in implantology, periodontology, endodontic and orthodontic dentistry. We used Piezon master surgery at Dental clinic of Medical faculty Masaryk's University and St. Ann's University Teaching hospital in Brun for augmentation of maxillary sinus by sinus-lift method and atrophic alveolar ridge. We modified maxillary sinus on right side in articain anesthesia. Five month after extraction of 24 we decided for correction by sinus lift procedure. We used DBBM and implant 4.8 mm wide and 10 mm long. In second case for atrophic alveolar ridge treatment we pulled tooth 38 out and we removed bone block 6 month after extraction. It contained spogious and cortical bone. We fixed bone block by 10 mm long screw and X-ray pictures were done. We evaluate both patients within 6 month past the surgery, after complex periodontal and implant treatment.

593
Ref no: EUABS064282
Managment of epical inflammatory root resorption in a canine fused with a supernumerary tooth
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Shahid Beheshty Dental School

Aim: Treatment and managmet procedures of a tooth with external inflammatory root resoption fused with a supernumerary tooth aclinical case report.
Method: A 20 years old male in good gereral health came to the dental school of university of shahid behehshty complaning about abscess and fistula formation in tooth 43. Radiographic examination of the patient showed an extensive periradicular lesion and epical root resorption in addition appeariance fusion of 43 teeth the supernumerary tooth. Apex of main root was incomplet and apex of supernumerary tooth had a large lesion. Clinical examination of the patient showed caries on mesial surface. Vitality tests were accomplished and there was normal vitality the treatment plan consisted of periodontal flap in order to obtain a good degranulation of lesion was performed. Resection and odontoplasty were accomplished on the root involved apical. Then we utilized bone grafting materiales such as bio-oss in periodontal defect for their osseo conductive propertive. Finally the surgical site sutured with 3.0 silk suture material and coe-pak dressing was applied. We prescribed amoxicillin 500 mg tid and application of a mouth rinse named by chlorhexidine 0.2% twice per day both of them for one week.the following appointment

was one week later and the cilinical symptoms were improving. After 2 weeks the fistulation completely subsied .in the radiographic examination a gardual diminishing of periradicular radiolucency was noted.

594
Ref no: EUABS064272
''Histo-harmful'' action of free radicals in periodontal disease: the role of dental hygienist through alimentary prevention

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Aim: Free radicals are normally produced during catabolic metabolism when molecular oxygen interact with certain molecules or by the body's immune system's cells which create free radicals to neutralize viruses and bacteria. Free radicals can react with important cellular components such as DNA or the cell membrane, damaging them, and cells may function improperly or die if this occurs. More over free radicals contribute to different diseases. The only way to combat free radicals effects is to neutralize them.
Discussion: To prevent free radicals damage, the body has a defence system of antioxidants. There are two groups of natural antioxidants: the first group is the body's enzymes such as superoxide dismutase, catalase, glutathione peroxidase; the second one is nutrient antioxidants as vitamin E, vitamin C and beta-carotene, the pre-form of vitamin A. In addition, selenium and vegetable pigments: bioflavonoids, carotenoids and phenolic compounds, besides micronutrients.
Conclusions: We should be healthy and free from disease by preventing our body from any oxidative damage, carefully avoiding those factors which increase the production of free radicals or, when it is not possible, eating more fresh vegetables and fruits daily, containing antioxidants. Dental Hygienist will explain to patients how a varied diet is able to reach our well-being and that the easiest and most important way to stop free radicals damage is to fortify our diet with antioxidant-rich foods.

595
Ref no: EUABS064239
Forced eruption and implant site development in generalized aggressive periodontitis patient

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Attachment loss and bone loss is a common sequel of periodontitis and this may jeopardize the esthetic outcome and compromise functional aspect of treatment. One of the most predictable techniques of vertical ridge augmentation is forced eruption of hopeless teeth.A 34 years old female presented with severe attachment loss and deep pocket was diagnosed with generalized aggressive periodontitis based on clinical and radiographic findings. After periodontal therapy, dueto severe attachment loss (9 mm) and mobility grade II, III we decided to extraction of maxillary incisors and replaced them with dental implant. Before extraction, orthodontic extrusion of hopeless incisors was performed to correct vertical ridge defect. To make a metric evaluation, cross-sectional tomography with standard technique was taken. Following extrusion and extraction of maxillary incisors to avoid soft tissue collapse and papillary preserve during healing of socket we used extracted teeth's crowns as pontics. After 8 weeks, according to bone mapping, diagnostic template was fabricated and CBCT with diagnostic template was taken .Implants were placed. Immediately after implant placement, immediate functional restoration was delivered to the patient. After 4 months of healing, fixed permanent bridge was fabricated and delivered. The mean vertically movement of marginal bone was 3.6 mm.orthodontic extrusion is a predictable method for correct vertical ridge defect.

596
Ref no: EUABS064253
Dental anxiety and periodontal disease in a Swedish adult population

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The aim of this study was to investigate correlations between dental anxiety and periodontal disease in a Swedish adult population.
Material and methods: The present cross-sectional study is based on data from the Jönköping survey 2003. The total number of dentate individuals (age 20–80) was 582. Based on the outcome of a questionnaire exploring the subjects' feelings prior to a visit to a dentist, they were classified as either dentally anxious or not. The severity of periodontal disease was established using the criteria defined by Hugoson & Jordan 1982. All individuals were clustered in the following three groups: 1) healthy, gingivitis, 2) moderate, or 3) severe, advanced periodontal disease. The association between dental anxiety and periodontal disease was examined. Adjustments were made for the following variables: age, gender, smoking, dental care habits, dental health behaviour, and level of education.
Results: Both the bivariate and multivariate logistic regression models showed no statistically significant correlation between dental anxiety (dependent variable) and the severity of periodontal disease. Variables remaining significantly correlated to dental anxiety in the multivariate models, were irregular dental care, odds ratio (95% CI) = 2.4 (1.3–4.2), and female gender, odds ratio (95% CI) = 2.1 (1.5–3.1).
Conclusion: In this adult population no association was found between dental anxiety and periodontal disease.

Clinical tips and cases – Implantology

597
Ref no: EUABS064139
Short implants in posterior areas: a good alternative
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In case of reduced alveolar bone height, implants of short length may be employed. The increasing diameter of these implants attenuates and distributes the occlusal forces. 30 implants (Megagen® 5 mm, 6 mm, 6.5 mm, 7 mm and 8 mm) were placed in posterior areas of mandible and maxilla. Implant length was determined through standard radiographs only. 20 implants were loaded at 3 months from surgery. All restorations are single crowns or short-span fixed partial dentures. No failures occurred. This report describes an analysis of this procedure. The predictable use of short implants supporting single crowns and small fixed partial dentures of 2-4 units supported by 2–3 implants permitted: 1) restricting the need for presurgical procedures aimed to determine the available bone height by CT; 2) the placement of prosthetically driven restoration instead of surgically driven ones; 3) reducing the indications span for complex invasive grafting procedures. Despite of few cases, this study demonstrates that the use of short implants may be considered for prosthetic rehabilitation of the severely resorbed areas as an alternative to more complicated surgical techniques.

598
Ref no: EUABS063993
Reconstruction of severely atrophied edentulous maxilla with implants placed in autogenous iliac bone graft
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Introduction: The aim of this study was to present the clinical outcome of maxillary reconstruction with autogenous iliac bone graft and insertion of implants in it simultaneously.
Material and method: The patient in this study was 57 years old, and had a severely atrophied maxilla. Five implants were placed in three cortico-cancellous iliac bone blocks and rigidly fixed to the residual bone with 2 mm diameter titanium minis crows and mini plates. All ''empty spaces'' between the bone segments were filled with iliac bone chips harvested from the diploe of iliac bone mixed by Bio-oss.
Result: After 5 months all implants had been integrated, and just one cover screw was exposed to oral cavity.
Conclusion: Simultaneous maxillary reconstruction with autogenous iliac graft and implant placement in it can be one predictable alternative to treat patients with severe atrophied edentulous ridge.

599
Ref no: EUABS063845
Microscope-guided external sinus floor elevation (MGES) – a new minimally invasive surgical technique
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The accidental perforation of Schneider's membrane is the most serious complication of external sinus floor elevation. Sinus lift procedures with concurrent implant placement (single-step-procedure) in high atrophic alveolar ridges (categories SA3 and SA4 according to Misch) have been judged equally risky. To reduce the incidence of membrane ruptures and to preserve vestibular alveolar bone, alternative surgical techniques have been introduced, notably the internal sinus lift by Tatum and Summers, the balloon dilatation method by Benner or the endoscopic technique by Baumann and Ewers. The need for local pressure guidance during bone elevation may diminish patient compliance. Missing or incomplete visual verification of the membrane elevation may reduce the scope of the clinical application of these methods. Using specially developed microsurgical instruments under optical magnification and optimize illumination (dental microscope), the external access to the maxillary sinus can be kept minimal in size, while at the same time significantly reducing the membrane perforation rate (2/60, 1.2%). This protects the vestibular alveolar bone, increases the primary stability of concurrently placed implants, improves the supply of nutrients to the subantral bone graft and reduces the postoperative complication rate. These results were obtained in a prospective in-office study on 45 patients on which 60 microscope-guided single step external sinus floor elevations were performed.

600
Ref no: EUABS063742
The ''dome phenomenon'' associated with maxillary sinus augmentation
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Aim: This case series is aimed to report on a new phenomenon, the ''dome phenomenon'', which was observed in infected augmented sinuses over several years.
Methods: Five patients are presented in which sinus lift augmentation resulted in post-operative infection with inflammation and suppuration. Patients received aggressive anti-inflammatory treatment and surgical debridement of the inflamed tissue, including some grafted material performed through the lateral window of the primary procedure.
Results: The inflammatory condition reversed and the site healed clinically. Radiographically, a dome-shaped radio-opaque tissue was observed at the superior most aspect of the grafted sinus. This ''dome phenomenon'' was further confirmed during dental implant placement, which indicates healing potential adjacent to the maxillary sinus membrane.
Conclusions: The current report, as well as other studies and case series, suggest that there is great potential for healing and bone formation in the maxillary sinus membrane. The precise mechanism is not known. Further clinical and histologic studies are needed to understand the regenerative potential of the Schneiderian membrane.

601
Ref no: EUABS063809
Clinical and radiographic evaluation of immediate implants in periodontally compromised patients
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Purpose: The present study was to retrospectively evaluate the clinical performance of one- or two-piece implants (Nobel

Biocare AB, Gothenburg, Sweden) immediately placed after tooth extraction in periodontally compromised patients in a teaching hospital up to 3 years.
Materials and methods: Clinical data was obtained from dental clinics at Buddist Tzuchi General Hospital, Taipei. Data was obtained for all consecutively placed immedaite implants. Twenty five patients received 34 immedaite implants to support both multiple and single tooth reconstruction. Twenty eight Nobel Direct one-piece and 6 Branemark or Replace two-pece implants were used.
Results: 20 implants (59%) were placed in maxilla and 14 (41%) were placed in mandible. Surgical techniques for implant installation included flapless surgery (91.4%) or flap technique (8.6%). 29% (10) of the implants were subject to early loading. 14 (34%) of implants had soft or hard tissue augmentation. Two implants (5.7%) had marginal bone loss > 1 mm. The reason for early bone loss was compromised immune condition. No implants were lost up to 3 years follow up. The overall implant survival rate was 100%.
Conclusions: The data from the present clinical trial showed that immediate implants either one- or two- piece may be used successful and predictable in periodontally compromised patients and deserved further evaluation.

602
Ref no: EUABS064575

Regenerative approach for the treatment of peri-implantitis after decontamination with a low-abrasive air-polishing powder

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Background: Therapy of implants suffering from peri-implantitis is of high relevance. Due to reconstructive surgery, decontamination of the implant surface is one of the critical steps. The poster describes the results after air-polishing device application for surface decontamination in reconstructive surgery at implants suffering from peri-implantitis.
Methods: Two patients with a total of three implants showing ≥ 50% radiographic bone loss were treated with reconstructive surgery. Following mucoperiosteal flap elevation and degranulation, the contaminated surfaces were thoroughly treated by a low-abrasive air-polishing powder device (AirflowS1©, Dentsply & ClinPro Prophypowder©, 3MEspe) until no residues on the surface were visible with magnifying glasses. Autogenous bone grafts were covered either with ePTFE (Gore©) or collagen (BioGide©, Geistlich) membranes.
Results: Six months after uneventful healing, the peri-implant alveolar bone defects were radiographically completely resolved in both cases. Clinical evaluation showed no signs of alveolar bone loss around the implants.
Conclusion: The establishment of an implant surface conducive to bone formation may be prerequisite for successful reconstructive treatment of peri-implantitis. Deposits on the implant were removed without modifying the surface. The use of a low-abrasive air-polishing powder for implant decontamination together with reconstructive procedures seems to be helpful for the treatment of peri-implantitis.

603
Ref no: EUABS064343

Bioactive implants: five years of experience with a fluoridized surface

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The Astra Tech Implantsystem with a fluoridized surface (Osseospeed) was launched to the market in 2004. The Department of OMF surgery (Heidelberg University) is working since 2003 with this new surface.
Material and method: Seventeen patients recieved 53 implants (12 in the mandible, 41 in the maxilla) following the manufacturer's manual. For all implants, a one stage surgical protocol was used. After 6 weeks, the healing abutments were removed for the impression. After 2 weeks, the final abutments were installed using a torque of 25 Ncm and the final restorations were cemented. Intraoral X-rays were made after delivery of the final restoration and then annually.
Results: One implant in the mandible (4.0 × 11 mm) was lost during the healing period. All other implants are in function and could be followed up annually. The mean vertical bone loss was 0.28 mm after 4 years.
Conclusion: Even in the lateral maxilla, implants with a fluoridized surface are succesful using a one stage surgical protocal and a healing period of 6 weeks. They are as succesful as the Astra Tech implants with the TioBlasted surface and a 'traditional'healing protocol.

604
Ref no: EUABS064726

3D-navigated implantation and immediate loading in the aesthetic zone

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Implant placement in the anterior maxilla is a challenge for clinicians. Patients have exacting aesthetic demands which are often coupled with anatomically compromised implant sites. Ideal implant positioning in all axis is required to obtain an optimal result. Based on 3D implant planning software for cone beam CT data, customized surgical templates and provisional restorations can be made. This protocol enables the clinician to provide patients with a successful on-the-day provisional restoration which allows the creation of a natural emergence profile for the final restoration. A low-cost snap-on provisional can be used for immediate loading by combining a special temporary TempBase® abutment and a TempBase® Cap (Dentsply Friadent). This technique will be demonstrated by presenting the case of a 47-year old female, referred for implant replacement of a maxillary lateral incisor. A cone-beam CT was obtained with the patient wearing a customized radiographic template. Case planning utilized med 3D® visualization software. The information was used to fabricate a custom-made drill plate and to transfer the implant position to a model for creating the provisional restoration. The implant was placed with good primary stability (> 35 N/cm) using the customized surgical templates. Immediate loading was achieved using the prefabricated provisional crown. After 12 weeks a natural emergence profile was created and the definitive crowns inserted.

605
Ref no: EUABS064728

Smartlift technique: a new minimally invasive method for the elevation of the maxillary sinus floor with a crestal approach

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Res. C. Perio. Dis, Un. Ferrara, Italy, UOC Odont., Foggia, Italy

Background: The elevation of the maxillary sinus floor with a crestal approach is a clinically validated surgical procedure (Tan et al. 2008). However, the conventional surgical techniques to augment the sinus through the alveolar crest are affected by important limitations, such as a limited control of the working depth of the instruments and the trauma to the residual osseous crest.
Aim: The aim of the present study is to describe a new method for sinus floor elevation with a crestal approach (SmartLift technique), designed in order to overcome the limitations of the conventional techniques.
Materials and methods: The surgical steps and preliminary results of sinus lift procedures performed according to the SmartLift technique are illustrated in details in a case series.
Results and conclusions: The SmartLift technique seems to represent a suitable option for sinus lift procedures due to 1) the possibility to control the working depths of the instruments, 2) a minimized mechanical trauma during the elevation of the sinus floor, and 3) the possibility to use the autogenous bone obtained during implant site preparation for the elevation of the sinus floor.

606
Ref no: EUABS064713

Modified sinus floor elevation

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Background: Prosthetic rehabilitation of the posterior maxilla with dental implants is often difficult because of proximity to the maxillary sinus and insufficient bone height.
Aim: The purpose of this investigation was to evaluate a maxillary sinus floor augmentation using modified technique closed sinus floor elevation due to faster osseointegrated implants with surrounding bone tissue.
Materials and methods: Three patients participated on the study. Horizontal gingiva incision was done in the region of the posterior maxilla. The bone-pulverising trephine drill 2.4 mm in diameter penetrated 2–3 mm below the cortical floor of maxillary sinus. Osteotome insertion into the predrilled cavity lightly tapping with hammer entered cylindrical part of (cortical and spongiose) bone to maxillary sinus beside Schneiderian membrane. The bone pusher is used to compress the augmentation alloplastic material (β-tricalciumphosphat). After achieving the necessary height (plus an extra 2–3 mm) the implants were inserted following the healing period and implants osseointegration with temporary prosthetic.
Results: During 6 months healing period new bone was successfully generated in all implants' sites as judged from radiographs.
Conclusion: The surgical procedure appears to be a safe method with rare complications: 1) Minimal possibility for Schneiderian membrane perforation. 2) Fast osseointegration around implants.

607
Ref no: EUABS064717

Removal of maxillary sinus mucocele, sinus lifting procedure and dental implantation at the same procedure

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Maxillary mococele is a rare clinical entity with unclear etiology. It is usually diagnosed coincidentally and has a bening course. We herein present a 32 years old women with maxillary sinus mucocele which we performed excision of mucocele, sinus lifting and dental implant placement at the same procedure. Patient admitted to our hospital with edentulism. A hyperdens lesion in right maxillary sinus observed on panoramic radiograph and paranasal sinus CT confirmed the lesion with mucocele. We performed Caldwell-luc operation, exposed the maxillary sinus, enucleated the lesion through the schneiderian membran and placed xsenograft after elevation of membran. Two dental implants with the size of 3.7 mm × 11.5 mm placed to the areas supported with sufficient bone tissue. Third dental implant with the size of 4.7 × 11.5 mm placed to the area with insufficient bone tissue after 6 months.During an average follow-up period of 8 months, no secondary complication, such as maxillary sinusitis or hematoma or disturbed wound healing or edematous swelling of mucosa, or recurrence of the mucocele have been observed. We also had no problems following placement of implants. This technique for enucleation of a mucocele can be extended the indication of maxillary sinus lift procedure and placement of dental implants in maxilla.

608
Ref no: EUABS064778

Report of a case of prosthetic rahabilitation with the use of immediate load implants under intravenous sedation

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SFPIO

The aim of this study is to report the advantages of the use of conscious intravenous sedation in a surgery for immediate load implants in a patient with the beginning of dementia caused by Alzheimer's disease. An overdenture with o-rings was coupled to four immediate laser treated load implants in 3.4 × 13 mm. dimensions. The medication was administered intravenously which consists of benzodiazepines for sedation, analgesics and flumazenil was used to reverse the sedation effect. The patient, 74 years old, partially edentate arrived at the dental office after a fall complaining of strong pains in the anterior region of the lower jaw. After clinical and radiological examinations, it revealed that the alveolar bone had been fractured and displaced which indicated surgery for the removal of the fragment plus the necessety of for implants. For neurological and cognitive reasons, the surgical procedure was done using conscious intravenous sedation by medical anesthetist who monitored all the vital signs of the patient. At the end of the procedure, Flumazenil, sedation reversal, was introduced intravenously, and the overdenture was placed.The outcome was: a very good postoperative result, excellent esthetic rehabilitation and mastication function, plus important anxiety control.The administration of intravenous sedation proved to be extremely efficent and safe; the patient was calm, serene and cooperative during the entire procedure.

609
Ref no: EUABS064747
Immediate loading implant in fresh extraction sockets: a case report and 16 months of follow up
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Background: Immediate loading implant has emerged as an alternative approach to reduce treatment time. Flapless implant surgery is now a predictable procedure. It has been stressed that patients with a history of periodontal disease have an increased risk of implant failure. The present report describes the management of post-operative complication in a patient with history of periodontitis.
Materials and methods: A patient with a severe generalized chronic periodontitis was referred. After an initial therapy, the reevaluation showed the persistence of deep pockets at the 4 incisors mandible. Crowing and radicular proximity led to the decision of extraction. It was decided to immediately place 2 Astra implants with a flapless surgery. These implants were immediately loading with a temporary bridge realized.
Results: Two months after the surgery, radiographic examination showed clinically asymptomatic a peri-apical lesion on one implant. A systemic antibiotic (Metronidazole 500 mg tid, 14 days) was prescribed. Conventional restorations were performed 6 months later, after resolution of the apical lesion.
Discussion and conclusion: This complication could result from bacterial contamination during insertion, premature loading leading to bone micro-fractures or the presence of pre-existing inflammation. The present report indicates that successful implant therapy can be achieved even if the immediate postoperative radiograph shows a radiolucency evoking a potential infection.

610
Ref no: EUABS064910
Platelet rich plasma in regenerative treatment of peri-implant defects around immediate implants in the anterior maxilla
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Platelet-Rich Plasma (PRP), a concentrated suspension of growth factors that has been demonstrated to induce healing and regeneration of tissues.The aim was to evaluate bone regeneration in immediate oral implants with PRP and two different bone grafts.
Methods: Following extraction of teeth in anterior maxilla, 20 implants in 8 patients were immediately placed.The first group received PRP with Bovine Derived Xenograft (BDX) while the second group was treated with PRP and Demineralized Freeze-Dried Allograft (DFDA).
Results: In BDX-treated peri-implant defects,the bone fill both at vertical and horizontal dimensions was similar to the DFDA-treated defects (5.7 ± 0.6 versus 5.3 ± 0.4 mm, respectively). In deep defects (> 15 mm in depth as the difference from the stent margin to the bottom of the defect), BDX-treated defects responded significantly better compared to DFDA-treated defects (7.8 ± 0.5 versus 5.6 ± 0.7 mm, respectively; $P < 0.05$) in vertical bone fill. Conversely, vertical bone fill was significantly better in response to DFDA-treatment compared to BDX treatment (5.2 ± 0.3 versus 4.0 ± 0.3 mm, respectively; $P < 0.05$). There was no statistically significant difference between groups in horizontal bone fill regardless of the peri-surgical defect depth.
Conclusion: These results suggest that both graft materials are equally effective in bone fill around in peri-implant defects while BDX and DFDA may have differences depending on the defect depth. (Supported by the Research Fund of Istanbul Uni. No T-44/15122006)

611
Ref no: EUABS065043
Immediate loading with overdenture in edentulous maxilla
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Aim: This multicenter study report the clinical results of immediate loading in edentulous maxilla with overdenture.
Methods: In 82 patients (38 F, 27 M) with edentulous maxilla a total of 328 Ankylos implants were placed (4 implants in each maxilla). At the implant placement, patient age ranged 43–78 years.113 implants were placed consecutive to tooth extraction, 47 within 3 months. Implant length ranged from 9.5 mm to 17 mm.Following surgery all implants were connected with prefabricated conical abutments that are manufactured with a precise fit to secondary conical copings. These prefabricated copings are polymerised into denture base directly in the mouth of the patients. Clinical and radiographic evaluation is done in order to monitor soft and hard tissue outcome. Technical complications and patient satisfaction were recorded.
Results: During a total observation period of 25.7 months (range 12–66) 7 implants were removed, all other implants presented healthy peri-implant soft tissue conditions showing low value of clinical parameters (mSBI > 1; mPlI = 1).Cumulative survival rate was 97.9%. Radiographic examination showed an excellent bone healing and stable crestal bone level. 4 patients were not satisfied with aesthetic of rehabilitation; all other appreciated function, aesthetic and retention of the restoration.
Conclusions: Basing on the present data it was concluded that four implants with high primary stability may support immediate loading in edentulous maxilla.

612
Ref no: EUABS064985
Immediate loading of fresh socket and flapless implant insertion in anterior maxilla: a case report
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Introduction: Immediate loading of dental implants have been introduced as a method of reducing treatment time without compromising its prognosis.
Method: A 72-year-old white female with the history of left central tooth fracture was referred for evaluation and treatment. Since the fracture was 3 mm apical to CEJ and crown-to-root ratio was not fair enough to restore tooth after crown lengthening; the implant supported restoration was anticipated. It was decided to insert an implant in a fresh socket and also loads it at the same time. An implant 4.5 × 12.5 mm (Contact SPI; Thommen medical, Walderburg, Switzerland) was inserted immediately. The insertion torque was recorded 35 N/cm, so primary stability was optimum for immediate loading. The appropriate abutment was installed and tightened with 25 N/cm and a light cure composite crown was fabricated using translucent prefabricated crown, and temporarily cemented. The crown has no contacts in

protrusive and excursive jaw movement but there was a light contact in heavy bite forces.
Result: Four months after loading, there was no sign of bone loss or mobility. So the final impression was made and the final restoration was temporarily cemented. After 2 months of follow-up there were no soft and hard tissue changes.
Conclusion: Immediate loading of fresh socket and flapless implantation in anterior maxilla in a 6 months follow-up had no interference with implant osseointegration.

613
Ref no: EUABS065658
A simplified image, (CBCT) model based, dental implant guidance system: a case series
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Objective: Evaluation of the clinical predictability and short-term outcome of a new cone beam CT, model-based, guidance system.
Material and methods: 9 consecutive partially edentulous patients received an implant-supported restoration (Astra Tech® implants) via a flapless procedure using a surgical guide. A cone-beam CT, taken with a radio-opaque intra-oral mask, was used to determine the thickness of the soft tissues, in order to create a stone model with soft tissue (removable) and underlying bone. A specially developed drill extension, compatible to all implant systems, ensured guided implant insertion. For all implants a 1-stage protocol was followed.
Results: 10 implants were placed, and all integrated successfully. In 2 patients a small flap had to be raised because of insufficient buccal gingival width or the need of simultaneous bone augmentation. The mean marginal bone loss during the 1st year was 0.1 mm (range: 0.0–0.3 mm). Patients reported little to no post-operative discomfort, and the surgical time was reduced significantly.
Conclusions: Preliminary results of this guidance system are promising. Longer follow-up periods and a larger patient sample are, however, needed to confirm our initial findings.

614
Ref no: EUABS065848
Statistical and clinical review of implant failure and survival in periodontally compromised and healthy patients
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Purpose: This study compares implant survival and patterns of implant failure in periodontally compromised and periodontally healthy patients.
Materials and method: Implants were placed in both periodontally compromised and periodontally healthy patients over a 4-year period classified in 5 different groups according to surface texture.
Results: A total of 476 implants were placed in 198 patients. 71 of these patients, classified as periodontally compromised (PCP), received 223 implants. The remaining 121 patients, classified as periodontally healthy patients (PHP), received 223 implants.The overall survival rate for implants placed in the PHP group was 93.7% compared to 90.6% in the PCP group. The survival rate of hidroxyapatite-coated implants was 92.6% in the PHP group and 81% in the PCP group.The survival rate of the turned-surface implants was similar in both groups.
Conclusions: Further long-term controlled investigations are needed to determine the influences of implant surface and host susceptibility on implant failure in both PHP and PCP.

615
Ref no: EUABS065827
Rehabilitation of the maxilla posterior region with tilted implants: clinical case
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The implant-supported rehabilitation of the posterior region of the maxilla is still a challenge for the dentists today, due to its anatomical limitations as the pneumatisation of the maxillary sinus and low bone density allied to the fact that this area supports high functional loads. The survival rate decrease of implants in posterior maxilla areas, the need for more complex surgeries as sinus lift and the functional demands of patients make the use of tilted implants an excellent option to treat these cases. The rehabilitation with tilted implants allow the use of longer ones, whose apex will anchor in anterior areas of denser bone, providing better primary stability and the possibility of immediate loading. Besides, tilting of the posterior implant allows implant shoulder to be positioned more distaly, reducing the cantilever effect. ½ All-on-4 techniques is used for the immediate rehabilitation of the distal sextants using a straight implant in the area of the first pre-molar and a distal tilted implant with angulation of 45ordm;in the area of the first molar, providing an immediate fixt bridge in the day of surgery. The clinical case presented describes the bilateral immediate rehabilitation of posterior sextants of maxilla using the ½ All-on-4 concepts.

616
Ref no: EUABS065900
Alveolar cleft repair and dental implant placement in a patient with cleft palate
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Alveolar cleft repair before implant placement requires bone block graft applications. Ramus grafts has the advantages of good quality of bone, corticocancellose bone graft structure and minimal resorption. A 17 year old girl with cleft palate referred for prosthetic restoration of missing maxillary lateral incisor tooth. The history of the patient includes cleft palate operations in her childhood. Clinical examination revealed a missing upper lateral tooth at the right side with alveoler atrophy. Computerized Tomography image showed the bone defect and alveolar cleft at the region. The defect was reconstructed with mandibular ramus bone graft. An endoosseos implant was placed 6 months later. Dental implant was placed succesfully with autogenous bone greft in this case of patient with missing lateral upper tooth associated with alveolar cleft palate.

617
Ref no: EUABS065523
Clinical considerations over the necessity of mandibular implantar treatment
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The aims: The purpose of this study was that of realizing a critical evaluation and implicitly a correlation between the state of mandibular edentation and implantar therapeutic necessity.

Material and methods: We have evaluated in this purpose a group constituted of 179 patients, 93 women and 86 men (18–72 years old) who came in our clinic between 2005 and 2008. For investigation the thorough clinical exam, canonical methods and also paraclinical exams were used: gnatophotostatical exam on intra- and extraoral photography of face and profile, study models and radiological evaluation through OPT with markers.
Results: The implantar therapeutic necessity at the level of the group was of 88.36%. The necessity of interventions on soft tissues in the view of optimizing the surgical field was of 44.98% and the necessity of interventions on bone structures in the view of optimizing the surgical field was of 43.92%.
Conclusions: It is justified therefore the incresed necessity for interventions in order to optimising the implantar mandibular field.

618
Ref no: EUABS065217

Assessment and comparison frequency of microbiological parameters in gingival sulcus around tooth and crowns supported with dental implants

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Introduction: One of the etiologic factors associated with the resorption of crestal bone and the inflammation and disease of the periimplant tissues is bacterial infection. The aim of this study was determining and comparing the Frequency of microbiological parameters in gingival sulcus around the tooth and crowns supported with dental implants maintaining deep and shallow sulcuses.
Methods and materials: Thirty four partially edeutulous patients with a total of 72 Implants (22 deep sulcuses & 50 shallow sulcuses) were examined. Inclusion criteria were completely healthy, non smoking patients with complete health of the hard and soft tissues surrounding the Implants and teeth. All Implants were I T I and at least 6 months had passed from their insertion and the prosthetic treatment stage of all Implants was finished. The samples were cultured for 1 week and then examined by dark field microscope. The Data was analyzed using chi-square test.
Results: The microorganisms found around the teeth&Implants were gram positive and gram negative cocci, *Prevotella, Porphyromonas gingivalis, Bacteroide fragilis* and *Fusibacterium* which the gram positive cocci were the most. There was a significant difference between the amount of *Porphyrmonas gingivalis* and *Bacteroide fragilis* in the three groups.
Conclusion: Anaerobic bacteria levels were slightly higher around the deep sulcus Implants than shallow sulcus and normal teeth; therefore the probability of periimplantitis is greater in deep sulcuses.

619
Ref no: EUABS065219

Resonance frequency analysis of implant clinical stability on aAstra Tech and iti implant systems

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Introduction: Dental implant stability is a prerequisite for osseointegration.There are different ways of measuring implant stability. The objective of the present study was to measure and compare the stability of Astra Tech and dental implants during the healing.
Material and methods: In this randomized clinical trial, fourteen healthy subjects were candidated for dental implants and randomly divided into two groups.One group received 15 Astra Tech and second group received 15 ITI dental implants.
Results: The mean ISQ of Astra Tech implant system at third and sixth month were significantly greater than ITI implant system ($P < 0.05$) .statistical analysis showed higher ISQ values for mandible than maxilla.
Conclusion: Our data suggest that resonance frequency analysis and ISQ is a reliable method in evaluating osseointegration and implant stability.

620
Ref no: EUABS065154

First molar replacement with implants

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Aim: This multicenter study reports the clinical outcomes after 3 years of function of implants supporting first molar.
Methods: 239 patients (mean age 59 years) were treated with 278 Ankylos implants to replace first molar. Implants in the mandible were 56.8%. Implant length ranged from 8 mm to 14 mm. The implant diameter distribution was: 50% of Æ3.5 mm, 42.8% of Æ4.5 mm and 7.2% of Æ5.5 mm. After prosthetic treatment, all patients were submitted to maintenance therapy every 6 months. In different time intervals PlI, BOP, standardized periapical radiographs, technical complications and patients satisfaction were recorded.
Results: After 3–6 months of submerged healing, all implants were osseointegrated. 41 implants received final restoration using Auro Galvan Crowns veneered with ceramic, 152 with metal-ceramic crowns, 85 implants with zirconia-ceramic crowns. All crowns were cemented.4 patients with 4 implants were lost to follow-up. After at least 3 years of function (range 3–5) 2 implants in mandible and 1 implant in maxilla failed. Cumulative survival rate was 98.9%. The majority part of implants presented healthy peri-implant soft tissue conditions (PlI < 1, BOP < 1). The median change in marginal bone level during the observation period was 0.36 (range 0–3, 4 mm). During observation period, 2 case of abutment screw loosening occurred. 11 crowns had a porcelain fracture.
Conclusions: The implant-prosthetic replacement of first molar has proved to be a predictable treatment.

621
Ref no: EUABS065157

Tooth-implant supported fixed partial dentures (FPDS): long term results

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Aim: To evaluate the biological and technical outcome of teeth and implants supporting FPDs.
Methods: Sixty-nine partially edentulous patients (mean age 59 years) were rehabilitated with 75 metal-ceramic FPDs tooth-implant supported. Of the bridge abutments 119 were teeth and 108 were implant (11 Branemark, 35 Straumann and 62 Ankylos implants). The units replaced by the FPDs were 319. After prosthetic treatment, all patients were submitted to a quarterly control and followed at least 4 years (4–13 years). Clinical and radiographic parameters, patient' satisfaction, and technical complications were recorded.
Results: 4 patients with a total of 12 abutments (5 implants, 7 teeth) were not present to recall. During a total observation

period 3 implants were lost to development of a bone defect. 2 teeth hed a vertical fracture and 3 teeth were lost due to periodontitis. Biological complications (PPD > 5 mm and BOP+) occurred in 7.7% of the implants and in 9.8% of the abutments teeth (3.6% had secondary caries, 1.8% endodontic problems, 4.4% periodontitis). 8 bridges presented ceramic fractures. Five cases of abutments screws loosening occured. 2 patients were not satisfied with aesthetic of the rehabilitation.
Conclusion: Favourable clinical conditions were found at tooth and implants abutments after 4–13 years of function. Technical complications have been related to designs of different implant-abutment connections. The internal-tapered connection provides more mechanical stability.

622
Ref no: EUABS065161
Immediate/delayed implants placement in the aesthetic zone: long term clinical results
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Aim: To report on the clinical outcome of 256 implants in the anterior region of maxilla.
Methods: Between January 1994 and April 2006, 165 patients received 114 implants placed immediately into extraction socket and 142 delayed implants. 26 Branemark, 67 Straumann and 163 Ankylos Implants were used. Bone augmentation procedures were combined with implant placement, if necessary.After 4–6 months of unloaded healing period, all implants were osseointegrated and temporization was performed; final restorations were delivered 3 months later. mPII and mSBI, standardized peri-apical radiographs, technical complications and patients' satisfaction have been registered.
Results: During observation period of 6.7 years (range 2–13), 9 implants were lost and the cumulative survival rate was 96.5%. The majority part of implants presented healthy peri-implant soft and hard tissue conditions. 11 patients were not satisfied with aesthetic; all other appreciated function and aesthetic of the restoration.
Conclusion: The surgical procedure must be planned based on the pre-operative situation. Immediate implant placement is not a benefit for the aesthetic result in most of the cases. Technical, prosthetic complications and soft tissue problems have been related to designs of different implant-abutment connections. The internal-tapered connection have been reported to provide more mechanical stability with a positive influence on the healing and long term stability of peri-implant tissues.

623
Ref no: EUABS065162
Immediate implant-supported overdentures in edentulous mandible
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Aim: To present a clinical result of immediate loading in edentulous mandible with overdenture.
Methods: In 77 patients (44 F, 33 M), a total of 308 Ankylos implants were placed in edentulous mandibles (four inter-foraminally implants in each jaw) and immediately loaded. 122 implants were immediately inserted into fresh extraction sockets; 47 were delayed implants. Implant length ranged from 9.5 mm to 14 mm. Following implant placement, the SynCone abutments were screwed on the implants. These abutments are manufactured with a precise fit to prefabricated secondary conical copings that are polymerised into the denture base directly in the mouth of the patients. Panoramic radiographs at implants placement, 6 months later and annually; mSBI and mPII in different time intervals were recorded. Technical complications and patient satisfaction was evaluated.
Results: During the healing period 4 implants were removed. After a total observation period of 27.3 months (range 12–68 months) all other implants presented healthy peri-implant soft tissue conditions showing low value of clinical parameters (mSBI = 1; mPII = 1). Implant success rate was 98.7%. X-ray showed an excellent bone healing and stable crestal bone level. 2 patients were not satisfied with aesthetic of rehabilitation; all other appreciated function, aesthetic and retention of the restoration.
Conclusion: The present data validates the predictability of immediate loading in edentulous mandible with overdenture.

624
Ref no: EUABS067021
Osseointegrated implants in two siblings with papillon-lefevre syndrome: 5-year follow-up
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Papillon-Lefèvre syndrome (PLS) is associated with a rapidly-progressive periodontitis, leading to premature loss of the teeth. This report evaluates the success of osseointegrated implant therapy in 2 siblings with PLS, in a period of 5 years. A 29-year-old male and his 27-year-old brother, diagnosed with PLS, were treated with osseointegrated dental implants, after 12 years of periodontal treatment and maintenance. The remaining teeth were extracted, followed by immediate placement of implants (12 and 10 respectively) in the extraction sockets, and immediate placement and loading of implant-supported, screw-retained, fixed partial dentures (hybrid) in upper and lower jaws. Post-surgical care included: strict oral hygiene and dietary instructions, use of antiseptic mouthrinse, anti-inflammatory and analgesic drugs, and systemic use of antibiotics. After a follow-up period of 1 month, including occlusal control, the patients were then enrolled in a maintenance program, with recall appointments at regular intervals. Recovery was uneventful, and both patients exhibited no clinical signs of inflammation around the implants. Follow-up radiographs showed successful osseointegration and preservation of the alveolar bone 5 years after implant placement. The use of dental implants may be considered a reliable therapeutic option for the periodontally compromised patients with PLS.

625
Ref no: EUABS067058
Soft tissue management in anterior implant case with severebone loss
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Introduction: A 25 year old female patient was referred to our clinic with her upper left lateral lost by a bicycle accident 1.5 years ago. There was a large defect in the buccal side of alveolar bone at the lost tooth area. We planned to place an implant with bone augmentation and afterwards soft tissue augmentation with subepithelial connective tissue graft if it was necessary.
Material and method: A 3.8×13 mm implant (Xive- S plus, Friadent) was placed in edantelous area and augmented with

bioabsorbable graft and membrane (Bio-Oss, Nobel-Biocare) in the buccal side. After 6 months, we made a subepithelial connective tissue graft for changing the biotype of the soft tissue around the implant and at the same recall we put the temporary abutment.The other teeth with endodontic problems were treated in endodontics and it it has been made a temporary prothesis.At the 8th month, the patient was called for control and final restorations.
Conclusion: The patient's maintenance therapy continues with regular recalls. The clinical findings are acceptable and the patient is satisfied with the esthetic and functional results.

626
Ref no: EUABS066939
Peri-implantary inflammatory syndrome
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Introduction: The inflammatory response is one of the most important reactions of the human body regarding implant placement. Therefore, we designed a study concerning the way that this fall of events may influence y the success of implant therapy.
Methods: The patients were evaluated from the inflammatory markers point of view: CRP, erythrocyte sedimentation speed and fibrinogen level after, immediately after and after 2 weeks, 1 and 6 month after the intervention and we were scanning the level of those markers in order to observe if there is any connection between them and the healing process and the success rate.
Results: The levels of those markers are significantly higher if there is a preexisting inflammatory syndrome and this influence the result of implantary treatment.
Conclusions: The assessment of inflammatory response may offer important information regarding the success of dental implants.

627
Ref no: EUABS066940
Statistical and clinical review of implant failure and survival in periodontally compromised and healthy patients
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Purpose: This study compares implant survival and patterns of implant failure in periodontally compromised and periodontally healthy patients.
Materials and method: Implants were placed in both periodontally compromised and periodontally healthy patients over a 4-year period classified in 5 different groups according to surface texture.
Results: A total of 476 implants were placed in 198 patients. 71 of these patients, classified as periodontally compromised (PCP), received 223 implants. The remaining 121 patients, classified as periodontally healthy patients (PHP), received 223 implants.The overall survival rate for implants placed in the PHP group was 93.7% compared to 90.6% in the PCP group. The survival rate of hidroxyapatite-coated implants was 92.6% in the PHP group and 81% in the PCP group.The survival rate of the turned-surface implants was similar in both groups.
Conclusions: Further long-term controlled investigations are needed to determine the influences of implant surface and host susceptibility on implant failure in both PHP and PCP.

628
Ref no: EUABS066937
Esthetic outcome in delayed versus immediate implants in the anterior maxillary
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Aim: The objective of this study was to determine if there were differences in crestal bone levels over time with immediately implants compared with delayed implants.
Methods: We structured a sample of 46 patients who received a single tooth implant, immediate postextractional or delayed between 2003 and 2005. Mesial and distal bone levels were measured directly on the radiographs using 3 x magnifications.
Results: The initial radiographic measurement of bone levels for 46 implants included in this study was set at 6 months after placement and was followed with a mean follow-up time of 12 months. Mean changes in mesial and distal bone levels for the immediately postextractional implants were 0.16 mm $\pm$ 0.5 mm and 0.24 mm $\pm$ 0.23 mm respectively. For the delayed implants, the mean mesial and distal bone levels were 0.15 mm $\pm$ 0.6 mm and 0.08 mm $\pm$ 0.5 mm respectively.
Conclusions: Using bone level changes over time showed no statistically significant difference between immediate postextractional and delayed implants.

629
Ref no: EUABS066910
Dental implant treatment of a patient immunosuppressed with cyclosporin A
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Cyclosporin A (CsA) is widely used as an immunosuppressant to prevent organ transplant rejection, its effects on soft tissues of the periodontium have been extensively investigated. There are few studies about the relationship between CsA and dental implants. Experimental animal studies suggested that the use of CsA may influence bone healing around titanium implants. This report describes the management of a kidney transplant recipient treated with a dental implant. A 24-year-old woman was referred to the department of periodontology for the evaluation of her dentition before renal transplantation surgery. Teeth # 36, 46, 25 exhibited advanced periodontal tissue destruction due to trauma from occlusion and periodontal disease. The treatment plan consisted of Phase I periodontal treatment, extraction of the teeth # 48 and 36, modified Widman flap surgery and occlusal adjustment. After six months the patient complained about the missing tooth in the mandible. Because of the excellent personal plaque removal, proper healing of the periodontal tissues, an intraosseous implant was placed to restore the missing tooth. During the first year of the maintenance phase no gingival inflammation, pocket formation or radiographic bone loss was found in the implant region.

630
Ref no: EUABS066969

Tissue response of early loading orthodontic anchorage implants: comparison of histomorphometric and finite element analysis results

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Aim: The aim of study to evaluate tissue response of early loaded anchorage implants by means of comparison of histomorphometrics and finite element method.Mat and Meth:MTX implants were placed in dog's premolar areas of both jaws. Control group were left to heal for 4 months.After osseointegration period,test group were placed in same quadrant.Following one week of an early healing period, superelastic NiTi springs (500 g of force)-were connected between implants and applied for 20 weeks.After force application period histomorphometrical and histological findings of peri-implant tissues were evaluated. The stresses which occurred at implant-abutment complex and supporting tissues were evaluated comparatively using Von Mises,maximum principle and minimum principle stress values in megaPascal using FEA program.
Result: No significant differences observed between test and control group upon histomorphometric evaluation.However,bone-implant contact of 57.66% at tension sites was higher than bone-implant contact of 53.36% at pressure sites for both groups.A slight increase in bone density was seen at pressure sites of both groups.Induced bone apposition at crestal areas of pressure sites compared to tension areas was observed.Finite element results indicated that maximum stresses located around the neck of the implant in cortical bone.
Conclusion: The results indicate that MTX implants withstand orthodontic force application and may serve as orthodontic anchorage after early healing period.

631
Ref no: EUABS066976

Implant treatment for reduced posterior maxillary: new options

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Background: Depending on residual bone height ≤ 5 mm beneath the sinus, the crestal approach and the lateral approach have been proposed. The aim of this study was to evaluate the crestal approach combined with the immediate placement of implants in cases of severe alveolar bone resorption.
Material and methods: Thirty-one implants (12 Astra tech?, 19 Straumann?) were placed in 16 patients (mean age 57 years) presenting a mean posterior maxillary bone crest height of 3.6 mm, as measured with computerized tomography. The surgical technique included conventional osteotomy followed by sinus grafting with anorganic bovine bone followed by immediate implant placement in submerged position. When the residual bone was less than 3 mm, a trephine osteotomy was used to lift the schneiderian membrane with the bone core prior to fill the osteotomy hole with the grafting material. The clinical parameters used to assess the success rate were: 1) the implant stability at the second stage surgery and 2) bone- implants contact on the postoperative radiographs.
Results: All implants were clinically successful, with a mean loading time of 11 months. Periapical radiographs and post-operative computerized tomography showed bone formation around all the implants without mobility.
Conclusion: This report shows that the crestal approach combined with immediate implant placement may be used with residual sinus floor inferior to 5 mm.

632
Ref no: EUABS066115

Periapical pathology and immediate implants: case report and bibliographic review

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Immediate post-extraction implant placement is a well accepted protocol due to the preservation of aesthetics, shorter total treatment time, maintenance of socket walls, and reduced surgical time. The disadvantage of placement implants into sockets of teeth with periapical lesions is the potential for implant contamination during the initial healing period due to remnants of the infection. Novaes & Novaes reported that, in immediate implant placement for the replacement of teeth with periapical lesions, procedures can be successful if certain pre- and postoperative measures are followed, such as antibiotic administration, scrupulous cleaning, and alveolar debridement, before surgical procedure. Lindeboom performed the first controlled comparison between immediate and delayed placement of implants for the replacement of teeth with periapical lesions. This study supported the feasibility of the immediate placement of implants in infected sites.The upper left second premolar was scheduled for extraction and immediate implant placement. The tooth had periapical radiolucency. After careful extraction a Camlog® implant (5 mm diameter and 11 mm length) was placed after meticulous debridement of the alveolar socket. A cemented crown restoration was placed after 3 months of soft and hard tissue healing. The following period was performed during 2 years.

633
Ref no: EUABS066092

Clinical outcomes of peri-implant peripheral giant cell granuloma: a case series

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Background: Peripheral giant cell granuloma (PGCG) is an uncommon reactive lesion that occurs on the gingiva or alveolar mucosa and contains numerous giant cells. Its recurrence rate is 10%. Only five cases associated with dental implants have been reported previously. This paper describes three additional cases with clinical courses and outcome.
Patients and methods: Three women presented with a chief complaint of a gingival mass around the implants. The lesions were surgically excised under local anesthesia.
Results: The initial diagnosis at presentation was pyogenic granuloma. Radiography demonstrated marginal bone loss accompanying the lesions. Histopathology confirmed the diagnosis of PGCG. In two cases, there were several recurrences that resulted in explantation of the fixture. One case healed uneventfully.
Conclusion: Despite its usually benign clinical behavior, peri-implant PGCG may follow an aggressive course. The treatment planning for this condition should carefully take into account the presence of recurrences in order to evaluate the necessity of an aggressive surgical approach that may involve advanced bone loss and explantation. Further research on the origin of this implant-associated condition with a larger series of cases is necessary to provide a basis for adequate management.

634
Ref no: EUABS066088
Multidisciplinary approach in oral rehabilitation of patients with ectodermal dysplasia
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Ectodermal dysplasia (ED) is a group of hereditary disorders involving tissues and structures derived from the embryonic ectoderm. They are characterized by the presence of abnormalities at birth and may present various forms including anhidrotic and hidrotic dysplasias, focal dermal hypoplasia and aplasia cutis congénita. They are generally nonprogressive and diffuse characterized by a lack or scarcity of hair, teeth, nails and eccrine sweat glands. Intraoraly, common findings are anodontia or hypodontia, conical teeth, and generalized spacing. The treatment of such a patients requires early treatment with a multidisciplinary team composed of a pediatric dentist, a prosthodontist, a orthodontista, and oral and maxillofacial surgeon to ensure proper treatment of ED patients. In this apresentation the autors describe the problems related to the oral rahabilitation of ED patients and the multidisciplinary treatment aproach of patients with ED in the Dentistry Department of Coimbra University.

635
Ref no: EUABS066278
Immediate replacement of an upper lateral incisor using the ''pick-up'' technique after placement of an implant in combination with an ORG procedure
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For many patients, the long period of healing is a major inconvenience, especially when it comes to areas of aesthetic commitment. Thanks to technological development in terms of morphology and implants surface, and the evolution of surgical and restorative techniques,''the pool'' of patients can be operated and restored it immediately has grown significantly. In addition, several studies suggest that the placement of implants and its immediate restoration can provide other benefits such as prevention of further bone resorption, reduce the number of surgeries and treatment time as well as better aesthetics results. However, the placement of prosthesic implants guided in the anterior maxilla means in most cases, the occurrence of periimplant bone defects of greater or smaller size, that can be successfully treated by techniques of ORG. In this communication, presents the immediate replacement of an upper lateral incisor in a case of agenesis in a way that after the canine was tracccionated making the eruption in the position of the lateral incisor, for a second phase of treatment move distally until its position, leaving in its way a situation of greater availability of bone. Thus, the absence of fenestration created during the surgery, did not compromise the primary stability of the implant, and may also be treated in a satisfactory manner. The immediate restoration was carried out using the ''Pick-Up'' technique,which allows for a simple and rapid immediately replenishment of the piece.

636
Ref no: EUABS066025
Augmenting the thickness of keratinized gingiva around dental implants: case report
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The need for Keratinized Gingiva around implants has been widely debated: although there is a lack of evidence that KG helps in preventing periimplantitis or perimucositis around dental implants, the preservation or the reconstruction of KG may be requested to improve plaque control, prevent gingival recession and facilitate prosthetic procedures. The aim of this poster is to present 2 implant cases treated with bilaminar techniques and to value the outcome of the surgical procedures. The goal of the surgeries was to increase the thickness of the soft tissue around implant and to blend the tissue with the surrounding area. The first case is a mucogingival surgery performed to improve the esthetics of an implant in position 16 and to reduce the discomfort due to the lack or attached gingival during toothbrushing: the recession was about 3.5 mm; the residual keratinized gingival was less than 1 mm. The second is a case with a lack of keratinized gingival around a screw-type implant (4 spires were visible); the recession was 4.5 mm .The patient had a discomfort in this zone due to the removable prosthesis. The surgeries done in the two cases resulted in an increase of the amount of keratinized gingiva and in more confort for the patients for the manteinance of the soft tissues around implants. According to the recent literature increasing the periimplant soft tissue is justified by the improvement of the masticatory function and by the esthetic enhancement.

637
Ref no: EUABS066030
Mandibular implant-supported rehabilitation after adenoid cystic carcinoma excision and radiotherapy – clinical case
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Introduction: The adenoid cystic carcinoma represents 10% of the malignant neoplasm of the head and neck. Detected in any salivary gland (less frequent in sub-lingual), in any age (higher in fifth, sixth and seventh decades of life) and sex (more in feminine). Oral rehabilitation of these patients is a challenge in order to transpose biologic, morphologic, functional and prosthetic limitations.
Clinical Implications: The primary treatment involves surgical excision and additional radiotherapy. The surgery signifies anatomic, morphologic and functional alterations. The radiation signifies dermatitis, mucositis, xerostomi, decrease flavour, dysphasia, trismus, caries and osteorradionecrosis. All the consequences signified decrease in life quality because of functional reduction. This work presents a patient with history of inadaptation to removable mandibular prosthesis after partial hemimandibulectomy for removing a left sublingual gland adenoid cystic carcinoma and posterior radiotherapy. Attending to the limitations, the option was rehabilitation with implant-supported mandibular prosthesis and maxilar removable prosthesis.
Conclusion: The final rehabilitation planning should be guided in order to minimize the difficulties, limitations and complications of primary treatment. Our main objective should be an acceptable biological and functional result and principle a satisfied and more self-confidence patient.

638
Ref no: EUABS066010
Factors associated with the success rate of orthodontic miniscrews under orthodontic loading
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Securing appropriate anchorage is one of the important factors in achieving the objectives of orthodontic treatment. Miniscrews have proven to be a useful addition to the orthodontics anchorage. However, miniscrews have occasionally been removed due their mobility before or during orthodontic treatment. A thorough understanding of proper placement technique, bone density and landscape, peri-implant softtissue, regional anatomic structures, and patient home care are imperative for optimal miniscrew success. The purpose of this works is the evaluation of the clinical usefulness of miniscrews as orthodontic anchorage, their success rates, and the factors associated with their stability.

639
Ref no: EUABS065954
Bilaterall elevation of the maxillary sinus using two different techniques – case report
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Loss of teeth in the maxillar mollar region often causes descending of maxillary sinus. Lateral, surgically extensive approach of sinus elevation is used for more implants placement. Transcrestal approach is used for the closed sinus elevation and immediate placement of the single implant with minimal surgical trauma. Balloon controled sinus lift is the new method of closed sinus elevation were space for postponed placement of 2–3 implants is beeing created with minimal surgical trauma. With salline solution filled syringe and adapted balloon catheter the membrane of maxillary sinus is elevated up to 15 mm in vertical and horizontal dimension. It is minimally invasive technique for postpone implant placement, where more implants are indicated. Disadvantage is a bigger risk or perforation of the membrane due to minimal visibility. In our patient bilaterall elevation of the maxillary sinus has been performed by using two different techniques. Lifting of the right maxillar sinus was done by the balloon controled technique (transcrestal approach). The augmentation has been done with alloplastic bone filler. Lifting of the left maxillary sinus was performed by forming lateral fenestration on the buccal plate followed by augmentation with mixte xenogenic and autologous bone filler. After 6 months of augmentation 3 implants on each side are placed and prosthetic suprastructure is completed within next 4 months. This case shows advantages and disadvatages of bouth techniques.

640
Ref no: EUABS066005
Immediate single tooth implant placement: how can we obtain a durable esthetic result?
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Prospective studies demonstrated that placing implants into fresh extraction sites can be successful over a period of 5 years of loading. However, a thin gingival biotype and a high lip line can present significant hurdles to a lasting esthetic outcome; particulary regarding labial soft tissue stability overtime. Somes clinicians prefer advocate a number of additional surgical steps such as grafting of biomaterials and tissue grafting in a attempt to increase the predictability of the soft tissues outcomes. The aim of this presentation is to put forward the importance of the patient examination, the indication for immediate or delayed single tooth implant placement and to describe the clinical procedures with or not graft (bone and soft tissue) in order to obtain a durable esthetic result.

641
Ref no: EUABS065979
Implant success in patients with a history of chronic periodontitis
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Objective: As stated at the 6th European Workshop on Periodontology more information is needed on the effectiveness of implant therapy based on subjects recruited from private dental clinics. Thus, it was the aim of this retrospective study to analyze outcomes of implant therapy in periodontitis susceptible patients of a private periodontal practice.
Material and methods: Fifty-six partially dentate subjects (age: 38–82 years) with a history of treated chronic periodontitis had been restored with a total of 128 implants of the same type. Bone augmentation of the alveolar ridge was performed in conjunction with 42% of implants. Radiographs were taken at insertion, abutment connection and yearly follow-ups. Mean observation was 2.7 years (range: 2.0–7.5 years). Digitized radiographs were assessed by 2 blinded examiners, bone loss calculated and implant success determined according to the Albrektsson criteria.
Results: No implant loss occurred during the observation period. Mean bone loss amounted to 1.51 mm (range: 0.0–4.2 mm). 30% of implants showed a bone loss of ≥ 2 mm. The overall success rate was 65%, with significantly lower success for augmented vs. non-augmented implants (56 verus. 75%). Repeated bleeding on probing as well as absence of keratinized gingiva was associated with bone loss in both groups.
Conclusion: This study indicates that implant success in periodontitis susceptible individuals might be compromised, especially when implants are placed in simultaneously augmented sites.

Clinical tips and cases – Aesthetics

642
Ref no: EUABS065975
Incision management in coronally positionned flaps in order to preserve the papillae
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A modified coronally positioned flap technique has been proposed to treat Miller's class I/II gingival recessions (Zucchelli & De Sanctis 2000). This surgical procedure has been also described in order to preserve the papillae. In 2008 they used the same technique for the treatment of intra-bony defects in order to preserve the papillae. New concepts in esthetics for root coverage have been proposed: – the surgical procedure should treat all the recessions in the same intervention-releasing incisions, which often lead to scars, should be avoided–gingival tissue still present apically to the recession should be prefered because it is histologically and clinically (and also esthetically) similar to the original tissue covering the exposed root – keratinized tissue can increase after coronally displaced flap. The aim of this presentation is to emphasize and explain the importance of incision management in coronally positioned flaps in periodontal surgery. We show applications of those specific incisions in: – a complete root coverage of Miller's class I recessions – a coverage of posterior teeth in a severe generalized chronic periodontitis – a regenerative surgery by Emdogain® in an aggressive periodontitis. Coronally positioned flap in surgical treatment of periodontal pockets limits soft tissue break down, and allows for better root coverage.

643
Ref no: EUABS065946
Managing soft tissue defects in the maxillary esthetic zone with the vascularized interpositional periostal-connective tissue flap: case series
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Background: To successfully reconstruct the deficient anterior maxillary ridge with a single procedure, vascularized interpositional periostal-connective tissue (VIP-CT) flap was introduced to the literature. Taking the advantage of a contiguous blood supply, VIP-CT flap might fulfill the need for predictable simultaneous hard and soft tissue developement. The aim of this study is to evaluate the success of this technique in different compromised cases.
Materials and methods: After clinical evaluation, type of augmentation was determined in 7 patients. Two cases, having only soft tissue defects after implant placement were treated with VIP-CT flap.In two cases; implant placement and soft tissue augmentation were applied. Simultaneous soft and hard tissue augmentation was performed in two cases. In one case VIP-CT flap was performed prior to hard tissue grafting because of the extremely thin and insufficient soft tissue at the recipient site. Customized acrylic stents were fabricated on the study casts to serve as fixed reference guides for the vertical mesurements made before and 3 months after the surgery.
Results: Mean vertical soft tissue gain in the defect areas was 4.8 mm. Satisfactory esthetic results were maintained for the patients that received their implant supported crowns.
Conclusion: Within the limits of this case series VIP-CT flap can be considered as a succesful and predictable method for large volume defects in the anterior maxillary region.

644
Ref no: EUABS066143
Esthetic treatment of gingival melanin hyperpigmentation with Er: YAG laser: a case report
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Gingival hyperpigmentation may cause esthetic problems and embarrassment, especially in patients with a gummy smile. Melanin hyperpigmentation usually does not present a medical problem, but patients usually complain of dark gums as unaesthetic. Recently, the erbium-doped:yttrium, aluminum, and garnet (Er:YAG) laser has been applied effectively for melanin depigmentation.The purpose of this study was to report removal of gingival melanin pigmentation using an Er:YAG laser in a short-term clinical observation.A 25 year old girl, presented with the same chief complaint of unesthetic gingiva caused by melanin hyperpigmentation. The laser beam was set up at 210 mJ/pulse and 15 Hz under water spray in contact mode. Treatment required no anesthesia. The Er: YAG laser effectively ablated the epithelial tissue containing melanin pigmentation. Ablation of the gingival hyperpigmented areas were accomplished without any bleeding complications or significant postoperative pain. Clinical parameters, such as bleeding, swelling, redness, and healing, were evaluated after the surgery 1–4 weeks and 3 months later. After the 4 weeks, complete healing was observed.Three months follow up has shown no repigmentation in the patient. The esthetic results were pleasing and healing was uneventful.

645
Ref no: EUABS066144
Managing soft tissue defects in the maxillary esthetic zone with the vascularized interpositional periostal-connective tissue flap: case series
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Background: To successfully reconstruct the deficient anterior maxillary ridge with a single procedure, vascularized interpositional periostal-connective tissue (VIP-CT) flap was introduced to the literature. The aim of this study is to evaluate the success of this technique in different compromised cases.
Materials and methods: After clinical evaluation, type of augmentation was determined in 5 patients. Two cases, having only soft tissue defects after implant placement were treated with VIP-CT flap. In two cases, implant placement and soft tissue augmentation were applied. In one case VIP-CT flap was performed prior to hard tissue grafting because of the extremely thin and insufficient soft tissue at the recipient site. Customized acrylic stents were fabricated on the study casts to serve as fixed reference guides for the vertical and horizontal measurements made before and 3 months after the surgery.
Results: Mean vertical soft tissue gain was 4.8 mm and mean horizontal tissue gain was 4 mm in the defect areas. Satisfactory esthetic results were maintained for the patients that received their implant supported crowns.

Conclusion: Within the limits of this case series VIP-CT flap can be considered as a successful and predictable method for maintaining vertical and horizontal soft tissue gain.

646
Ref no: EUABS066139

Surgical treatment of localized gingival recessions by using gingival unit transfer

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One of the most important factors for the success of periodontal plastic surgery is the synergistic relationship between related tissues and vascular supply. Besides the compability of the function and colour of donor site with the recipient site, to obtain and remain tissue integrity similarity of the vascular structure is also important. This presentation describes the clinical procedure and outcome of surgical treatment of gingival recession with the use of gingival unit transfer. Gingiva contains the only soft tissue naturally created to survive and function interproximally and facially over avascular root surfaces. The probing depths, height of keratinized tissue, clinical attachment level, percentage of root coverage were evaluated at 9 cases with gingival recessions of Miller I-II-III defects. Healing on both recepient and donor sites was uneventful. 100% root coverage was observed on Miller I, 70–100% Miller II and 60–85% Miller III defects. During 3–6 months of follow-up period creeping tissue was observed in all cases. On a clinical level, preliminary results suggest that supracrestal gingiva, used as a free greft, may have an uncommon capacity for perfusion and survival since the patients resulted in correction of gingival recession together with gain of clinical attachment while maintaining shallow pockets.

647
Ref no: EUABS066074

Treatment of multiple gingival recessions using the tunneling technique with allogenic or xenogenic membranes

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Aim: To evaluate the treatment of multiple Miller Class I and II recessions using the tunneling technique with allogenic or xenogenic membranes.
Materials and methods: 15 patients exhibiting Miller Class I and II multiple recessions were treated with the tunneling technique and one of the following materials: a) subgingival connective tissue graft (SCTG) and Enamel Matrix Protein Derivative (EMD) (Emdogain®, Straumann, Basel, Switzerland), b) acellular allogenic dermal connective tissue matrix (Tutodent® Dermis, Neunkirchen am Brand, Germany), and c) collagen membrane (Tutodent®, Neunkirchen am Brand, Germany). Following clinical parameters were measured at baseline and at 6 months: recession depth, recession width, width of keratinized gingiva, distance of papilla and contact point, width of papillae, probing pocket depth.
Results: No adverse events such as allergies or membrane exfoliation occured. At 6 months, mean extent of root coverage measured in the SCTG + EMD, Dermis and Tutodent groups, respectively: 2.5 ± 1.1 mm, 2.4 ± 1.2 mm and 2.3 ± 1 mm. Mean increase in keratinized tissue measured: 1.4 ± 0.4, 1.2 ± 0.5 and 1.0 ± 0.4 mm. 68%, 65% and 66% of the recessions showed complete root coverage. No statistically significant differences in any of the investigated parameters were found between the three groups.
Conclusions: Treatment of multiple gingival recessions with the tunnelling technique and allogenic or xenogenic membranes resulted in substantial root coverage.

648
Ref no: EUABS066108

Root coverage using subepithelial connective tissue graft: results of long-term follow up

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Marginal tissue recession makes problems like aesthetics, root caries, hypersensitivity. Request for root coverage is higher than ever, especially esthetic problems involved. There are some kinds of surgical techniques using soft tissue for root coverage. For example, free gingival graft, kinds of pedicle flap, subepithelial connective tissue graft (SCTG), and so on. Subepithelial connective tissue graft has many advantages for root coverage that is less pain on donor site, good blood supply for graft, and more aesthetic result. So, this case report was performed to evaluate the effect of root coverage using subepithelial connective tissue graft. Three patients has Miller's class I marginal tissue recessions. The following period is 36.5 month on average. The results are as follows: 1) Root coverage of 100% was obtained in 5 of 6 defects and 80% was obtained in 1 of 6 patients. 2) The mean root coverage was 3.83 mm and mean recession depth decreased from 4 mm to 0.16 mm. 3) The mean width of clinical attached gingiva increased from 1.5 mm to 4 mm. The mean width of gained attached gingiva after surgery was 2.5 mm. 4) The mean follow up period was 45.5 months. The longest follow up period was 69 months and the shortest follow up period was 41 months. 5) The result that obtained by surgery was stable during follow up period.Within the above results, root coverage with SCTG is an effective procedure to cover marginal tissue recession with long term stability.

649
Ref no: EUABS066972

Flapless crown lengthening with Er: YAG Laser

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Crown-lengthening procedure is often applied to improve the appearance of a patient's smile or to provide sufficient tooth structure for the placement of dental restorations. Conventional technique for osseous crown lengthening typically involves flap surgery. The same procedure could be performed with dental lasers without flap reflection. This report represents the use of ErYAG laser for flapless crown lengthening in four cases. Each patient was referred with the complaint of unesthetic smile caused by excessive gingival display. The ErYAG laser was used at two different settings. (160 mJ/20 Hz and 250 mJ/10 Hz) Ablation of the gingiva was accomplished with minimal bleeding and postoperative pain. In one of the cases, gingival depigmentation procedure was also performed. Four weeks after the procedures, gingiva appeared pink, firm and healthy. Minimal rebound (< 1 mm) was found in 6 month of follow up. The use of ErYAG laser for flapless crown lengthening offers a practical technique to improve patient esthetics with minimal postoperative complications.

650
Ref no: EUABS066857

Clinical outcome of one-piece versus two-piece dental implants: a 2-year prospective study

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Background: Gingival aesthetics is based upon a constant vertical dimension of healthy periodontal soft tissues, the Biological Width. However, several factors (microgap, rough/smooth surface level, etc.) may influence peri-implant soft and crestal hard tissue reactions. This study evaluated the marginal bone level after 2 years of follow-up of 1-piece versus 2-piece implants.
Methods: Fifty two patients included in a split-mouth design prospective study received either 1-piece or 2-piece Zimmer implants (Carlsbad, USA) in cases of symmetrical missing lateral incisor cases that were immediately restored and placed into function as part of a 2-year multicenter investigation. Periapical X-rays at time 0, 3, 6, 12 months and 2 years evaluated the vertical bone loss based on the well-known implant length. The Student *t* test and Pearson correlation were used to estimate the influence of separate parameters on marginal bone.
Results: Two implants, one in each group were lost, resulting in a cumulative survival rate of 98.07% after 2 years. The average marginal bone loss level at the 2-year follow-up was 0.67 mm (SD = 0.36) in 1-piece versus 1.2 mm (SD = 0.69) in 2-piece implants. Shallow implant positioning resulted in less gingival and marginal bone remodeling when compared to deep implant positioning.
Conclusion: Stable marginal bone level supports the hypothesis that the 1-piece implant had further capacity to preserve both hard and soft tissue in order to achieve long-lasting esthetics.

651
Ref no: EUABS065155

Immediate temporization of maxillary single tooth implants

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Aim: To report the clinical result of 24 immediately loaded implants in the anterior region of maxilla.
Methods: Twenty four Ankylos implants were placed in 21 patients to restore 10 central incisors, 11 lateral incisors and 3 canines. 16 implants were inserted without flap elevation.All implants were immediately restorated with pre-fabricated abutments cement-retained provisional crowns.At insertion, none of the restorations had occlusal contacts (immediate non-occlusal loading). The implants received definitive restorations (fully functional occlusion) 4–6 months after implant placement. Periapical radiographs, mSBI, mPlI, technical complications and patient' satisfaction were recorded.
Results: Two implants were removed for mobility during healing phase. All other implants became osseoinegrated. After a total observation period of 26.2 months (range 12–54) the overall survival rate was 91.7%. All implants presented a healthy peri-implant soft tissue conditions (mSBI > 1; mPlI > 1) and stable gingival contour. Radiografic mean bone loss evaluating both interproximal surfaces was 0.56 mm (range 0.37–1.43 mm). No technical complication occurred. All patients appreciated treatment modality, 1 patient was not satisfied with the aesthetic of the rehabilitation.
Conclusions: Immediate temporization of maxillary single tooth implants is a technique that seems to give a satisfactory result in selected cases. The implant design makes a significant contribution to the primary stability of the implant.

652
Ref no: EUABS065321

Management of a gingival recession in a traumatized tooth with a delayed endodontic treatment

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Background: Apicomarginal defect may rarely occur due to a sudden impact involving the face or head and may be seen as deep periodontal pocket, gingival recession or combination of these two, clinically. Laterally positioned flap and envelope connective tissue graft techniques are two of the valid options and are used frequently due to their good predictability in root coverage and aesthetics. This report presents a two-step mucogingival procedure for the treatment of an apicomarginal defect with gingival recession which was developed due to a traumatic injury.
Materials and methods: A 21-year-old male who had fallen from a caterpillar 13 years ago referred to our clinic for eradication of a gingival recession. Dental history of the patient indicated a traumatic injury which influenced the tooth # 21. Periodontal examination revealed first degree mobility and a deep Miller class II gingival recession extending to the apex of the tooth. An apicoectomy procedure was performed following root canal treatment. Laterally positioned flap and envelope connective tissue graft procedures were carried out, consecutively.
Results: At the end of therapeutic process, 9 mm (100%) of root coverage and 9 mm (81.8%) of attachment gain was achieved. Significant improvement was determined in periodontal parameters and satisfactory aesthetics was achieved.
Conclusion: A well planned and designed multidisciplinary approach may help a lot of teeth to be treated with good health and aesthetics.

653
Ref no: EUABS065328

Management of giant cell fibroma in the anterior mandible: a case report

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Background: Giant cell fibroma (GCF) is a benign, asymptomatic, typically pedunculated lesion representing 5–10% of all fibrous lesions of oral mucosa. It occurs in the first three decades of life and predominates in females. The most predominant location is the mandibular gingiva. Aetiology of GCF is unknown; yet it might represent a local reaction to trauma or chronic inflammation.
Aim: To describe clinical findings and management of a large localised hyperplastic lesion in mandibular gingiva of a male patient.
Methods: A 35-year old male patient referred to our clinic presented with a local hyperplastic tissue with a diameter of approximately 1,5cm in lower right canine-premolar region. A detailed past history was obtained, thorough clinical, laboratory examinations were performed. No radiographic sign of bone loss was detected. After completion of initial periodontal treatment, the lesion was excised totally and histopathological investigation revealed a diagnosis of GCF.
Results: This case report describes clinical and histopathological findings of a GCF lesion. Histopathological evaluation revealed presence of characteristic stellate and giant cells of giant cell fibroma. No residual or recurrent swelling was detected in affected area in a follow-up period of 4 months.
Conclusion: Present case report emphasises the importance of the histopathological evaluation in the differential diagnosis of such localised hyperplastic lesions that can also involve the periodontium.

654
Ref no: EUABS065516
Biometric approach to a predictable aesthetic crown lengthening
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Background: Crown lengthening has been traditionally used as an adjunct to restorative dentistry.The increasing popularity of aesthetic dentistry made patients and clinicians more aware of aesthetic problems as crown and gingival length discrepancies.The instruments available for diagnosis and treatment of these deformities make the treatment and communication between working team very hard The aim of this work is to introduce a new protocol to a predictable aesthetic crown lengthening that uses innovative armamentarium,*Chu's Aesthetic Gauges(Hu-Friedy)*:Bone Sounding Gauge(BG),Aesthetic Proportion Gauges(PG)and Crown Lengthening Gauges(CLG).
Material and methods: A 40year old female patient with a considerable lost of tooth structure and an unpleasant smile appearance due to inappropriate tooth size proportion,consulted for esthetic rehabilitation.The PG were used to diagnose tooth size discrepancies and also to plan the new tooth size for each anterior maxillary tooth,which required osseous crown lengthening.The periodontist used the BG to analyze the bone crest and the CLG were used to achieve the proper clinical and biologic crown length during surgery.
Results: These gauges simplify the address of aesthetic deformities from diagnosis to treatment allowing to get predictable, objective and reproducible results
Conclusion: This new approach allows standardization of biological tooth size parameters as well as facilitates communication between the restorative dentist and the periodontist.

655
Ref no: EUABS065931
Placing an implant postextraction with inmediate provisional crown screwed to the implant and without occlusion: a case report
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A patient with gingival smile, who suffered a fractured horizontal root canal by 22 Endodontics.The aim of this treatment is to preserve the interdental papilla, placing an implant of internal hexagon (3.3 diameter) inmediate without lifting a flap, the provisional crown will be responsible for shaping an emergency gingival properly, avoiding a re-entry surgery at the time of drawing up its final prosthesis.The outcome of the case has been very satisfactory for both the patient and for the operator as it managed to preserve the interdental papilla.

656
Ref no: EUABS065817
What is a nice smile?
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Aim: The aim of this study is to establish parameters of the average teeth in healthy Caucasian population and to compare them with those of the aesthetic ideals.
Materials and methods: Fifty healthy Caucasian volunteers (18–25 years old) were included in the study. Aesthetic dental proportions of this sample were measured on two photographs (anterior and right lateral) as follows: the height and the width of the right central and lateral upper incisors and of the right upper canine. The data obtained were analyzed using a correlation coefficient and a lineal regression straight. The parameters were also compared with the Simbashi's number (SN) and the ''gold'' proportions in order to obtain aesthetic ideals.
Results: The height of an upper central incisor is $(SN \times 1)/1.618$ and its width is SN less its height. The height of an upper lateral incisor is 80 or 75 divided by its width and its width is the width of the upper central incisor multiplied by 1/1.618. The height of an upper canine is 80 or 75 divided by its width and its width is the width of the upper central incisor multiplied by 0.618/1.618.
Conclusion: Concepts such as ''beauty'' or ''aesthetic'' are social constructs and can not be standardized according to a system of universal laws. We have encountered realistic proportions to simulate a golden proportion between central, lateral incisors and canine teeth and Simbashi's number that could help us to rehabilitate edentulous patients, with adequate aesthetic proportions.

657
Ref no: EUABS065071
Evaluation of the effects of different surgical methods applied to gingiva on elimination of melanin pigmentation
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In recent years, stronger need for esthetics and growing cosmetic demand for a pleasing smile has made many individuals, more conscious of the black or dark patches of pigmentation on the facial aspects of gingiva that may be strikingly apparent during smile and speech. Elimination of these melanotic areas through surgery, laser surgery, as well as by cryosurgical procedures has reported. In this respect, the aim of this study was evaluate the clinical efficacy of a new depigmantation technique in the elimination of gingival melanin pigmentation compared with oral epithelium abrasion. 12 patients related with 18 upper and lower jaw presenting bilateral gingival melanin pigmentation was selected for this study. Each side of pigmentation was randomly asssigned to be part of a group. The sites of experimental group had an Air Polishing Device (APD). On the opposite side, the oral epitelium was removed with gingivoplasty. The healing process was evaluated at 6, 12, 18 months postoperatively. Among the patients participated in our study, the comfort and pleasure after the treatment was more positive in APD group. According to our results, it can be concluded that, APD may be succesfully used in the elimination or greater reduction of gingival melanin pigmentations, and is more efficent than gingivoplastiy after 18 months.

658
Ref no: EUABS064750
Simultaneous root coverage during implant placement with GBR in the esthetic zone
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The aim of this study was to evaluate the clinical outcome of three surgical procedures performed simultaneously; implant placement and GBR were performed together with a SECTG for treatment of a gingival recession in the adjacent tooth.
Materials and methods: The study population included 8 non-smoking patients, who presented with a missing upper first or

second maxillary premolar associated with Miller Class I ($n = 5$) or Miller class III ($n = 3$) recession on the adjacent tooth. A full thickness flap was raised and a tapered implant was placed. Peri implant augmentation of bone deficiencies was performed using DBBM and a collagen membrane. Gingival recession of the adjacent tooth was corrected simultaneously: The exposed root was mechanically planed .A free connective tissue graft was harvested from the palate and was secured using resorbable sutures to the exposed root while part of it was placed over the collagen membrane.A tension free flap was coronally positioned to cover both the membrane and the CTG.

Results: Successful integration of the implant, and harmonious gingival margin in both the implant and the adjacent tooth were usually observed at 6–9 month.93% coverage of the Cl I recession and 61% coverage of the Cl III recessions were observed.

Conclusions: Successful simultaneous correction of both bone and soft tissue is predictable; this combined procedure is less chair-time consuming and presents a lower morbidity compared with a staged approach.

659

Ref no: EUABS063630

Combined perio-prosthetic therapy for inter dental papilla reconstruction

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One of the most challenging issues in esthetic dentistry is recreation of the form and function of lost inter-proximal papilla in periodontally-involved patients. Periodontal diseases, inter proximal bone loss, tooth drifting /tilting and marginal ridge discrepancies may cause functional, phonetic, and devastating esthetic problems with open embrasures. Periodontal treatments showed their efficacy on reducing the rate of tooth loss, improving clinical criteria, and some degree of regeneration of tissue attachment. However, clinicians have a lot of problems in papilla reconstruction after inflammation or infection control. There are some useful techniques like as tooth repositioning, creation more apically contact points, reducing the distance between contact point and proximal bone crest by using orthodontic therapy and prosthetic restorations. These complex treatments are costly and time consuming. Using direct resin-bonded materials can improve the predictability and patients' cooperation with significant reduction in cost. In this article, we reviewed multiple cases showed us the capability of combined perio-prosthetic therapy in esthetic reconstruction from baseline to final clinical results. To date, treatment of lost or collapsed inter dental papilla has been largely unsuccessful. However, these case reports represent recent advances which enhance the dentist's ability to address esthetic concerns.

660

Ref no: EUABS064019

Use of the semilunar coronally repositioned flap combined with a frenectomy to obtain root coverage over the maxillary central incisors

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Background: This case report describes a method for coronally positioning gingiva for root coverage of the maxillary central incisors while simultaneously performing a frenectomy.

Methods: The patient was a healthy 43 year-old Brazilian female. Her chief complaint pertained to the unaesthetic appearance of the gingival recession involving both maxillary central incisors. Intra-oral examination revealed a thick biotype with an adequate band of keratinized gingiva, Miller class I mucogingival defects, and a broad frenum extending beyond the mucogingival junction. The surgical technique used to treat the areas of recession involved a semilunar incision that blended into a frenectomy.

Results: Complete root coverage was achieved with shallow probing depths of 1–2 mm on the facial surfaces of both central incisors. The residual frenum no longer attaches at a point coronal to the mucogingival margin. Small white scars were detectable at the mucogingival junctions above both incisors but were not an aesthetic concern.

Conclusions: It is possible to simultaneously combine a semilunar coronally repositioned flap with a frenectomy because the blood supply to the graft is laterally derived from the adjacent papilla. This avoids having to do the frenectomy first and then doing a coronally positioned flap eight to twelve weeks later in a second surgery.

661

Ref no: EUABS064045

The concept of the interdental gingival midpoint line in cervical line management: clinical and histological case reports

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Aims: We have found that circular fibers combine not only intercircular and transgingival fibers but also transseptal fibers in human histological sections taken from one adult. Based on this observation, the first purpose of this presentation is to investigate the relationship between the lowest cervical point and the interdental gingival midpoint (IGM) line in the maxillary anterior region. The second purpose is to verify the IGM line concept through some clinical cases.

Materials and methods: After marking the lowest cervical points and the mesial and distal interdental gingival midpoints on study models of seventy seven patients, the shortest distances from the IGM lines which connect both interdental gingival midpoints to the lowest cervical points were measured on silicone impressions.

Results and conclusion: The findings showed that the average position of the lowest cervical points in the central incisors coincides with the IGM line. This is located 0.24 mm palatally in the lateral incisors, and 0.3 mm facially in the canines from the IGM line. In a Thin–Scalloped biotype case, untouched facial gingiva increased following interdental gingival augmentation. In a case of Miller class 1 gingival recession, a coronally advanced flap combined with the roll technique was performed based on the IGM line concept. Following these results, it seems that the IGM line could become a diagnostic standard in cervical line management in periodontal plastic surgery.

Clinical tips and cases – Regeneration

662
Ref no: EUABS063967
Implant? Natural dentition? An alternative approach – functional tissue engineering
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Angiogenesis plays a critical role in bone development and regeneration. Current bone tissue engineering strategies therefore attempt to promote neovascularization. In addition, mechanical strain has an angiogenic effect. The United States National committee on Biomechanics, in 1998 adopted a new paradigm termed functional tissue engineering (FTE) to emphasize the importance of biomechanical considerations in the design and development of cells for tissue regeneration. Thus the mechanical environment, angiogenesis and osteogenesis during both bone formation and its maintenance are synergistically interrelated. This presentation documents how a comprehensive FTE strategy, which applies an orthodontic extrusive force with EMD/DFDBA protected by the vascularized periosteal flap (surgical angiogenesis), can significantly accelerate bone regeneration through enhancing angiogenesis.

663
Ref no: EUABS063972
Does the signal generated by some minerals regenerate the periodontal tissues without any contact with them?
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Progenitor cells are responsible for regeneration. They are located in the basal lamina and have an infinite division capacity. In order to obtain regeneration, the progenitor cells located in the basal membrane need to migrate towards the destroyed tissue. In order to achieve cell migration, a regenerative signal needs to be produced by the destroyed tissues. This signal will attract the progenitor cells to the affected tissue. It must be noted that affected tissues produces a very weak signal. This signal is weakened by the microbial environment and the age of the cells. The authors tried to increase the intensity of the natural signal produced by the destroyed tissues using a controlled signal. The authors carried out experiments using cell culture experiments, to induce cell migration towards the desired target by using a signal generated by a source which is at a certain distance from progenitor cells. The authors demonstrated that this signal is transmitted through dental tissues and through materials used in dentistry. The use of this mineral incorporated into a mouthguard is very effective for medium periodontitis and for preventing the formation and the evolution of periodontal pocket. It is important to note that there is no contact between the minerals and the tissues to be regenerated. This significantly reduces the risk of side effects. Histological, genetical and clinical tests comparations between periodontal tissues before and after treatment are presented.

664
Ref no: EUABS064084
Extraction of mandibular third molar to promote periodontal healing
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Surgical treatment of lower third molar may be associated with several risk and comlications. It needs a dentist with certificate of oral surgery, adequate practical experiences, adequate material and technical equipment. First of all, before surgical treatment it is able to do a basic dental examination. The aim of this casereport presentation is to describe the current view on complex treatment approach in a patient in intrdiciplinary cooperation. The patient history and initial clinical examination provided several information not only of chirurgical treatment of third molar, but also of generalized agressive periodontitis. It had been initiated the conservative periodontal treatment, but it was not efectual. The concept of treatment had been recommended in one stage surgery. The presented case report deals with less common treatment approach of a patient with agressive periodontitis and surgery of lower third molar. The case report presentation is describe an implementation of microbial examination DNA probe, deep scaling and root planing, surgical treatment of third molars, Guided Tissue Regeneration and targeted administration of antibiotics in one stage surgery management of a patient.

665
Ref no: EUABS064185
Calcium sulfate as an alternative regenerative barrier in extraction socket preservation
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Preservation of the alveolar ridge following tooth extraction is crucial, especially when implant placement is planned. The aim of this study was to present calcium sulfate as an alternative barrier material that can be used in guided bone regeneration. Calcium sulfate has been used in periodontal regeneration by functioning as bone grafting filler in defect and as a cell occlusive protective barrier to inhibit non-osteogenic cells from occupying the space while regeneration occurs. In this study, the extraction site was degranulated and demineralized freeze-dried bone allograft was loosely packed in the defect followed by tension-free primary flap closure. Five months post-operative re-entry indicated the dimensions of the alveolus ridge had been preserved and an implant was placed. Our study has noted several advantages to using calcium sulfate as a barrier membrane. Calcium sulfate can be easily molded to conform to the surface contours of the defect even in small detailed areas, unlike other membranes that are stiff and difficult to manipulate. When using calcium sulfate as a membrane barrier, soft tissue migrates over the material in 1–3 weeks therefore primary closure of the flap is not necessary, but highly recommended. Calcium sulfate has been shown to increase angiogenesis, and is osteoconductive, creating 35% or more vital bone. A histomorphometric finding also showed calcium sulfate is completely resorbable without inflammation and fibrous encapsulation.

666
Ref no: EUABS064437
Periodontal tissue regeneration by the application of FGF-2 in periodontitis patients
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The evidence remains insufficient as to whether medical use of particular signaling molecules as inducers of regeneration can induce significant tissue regeneration. FGF-2 displays strong angiogenic activity and the ability to stimulate mesenchymal cells into proliferating. A randomized, double-blinded clinical trial involving placebos and multiple dental facilities was performed from 2005 to 2007. From among those patients we discuss about the 7 patients treated in our hospital. Patients were diagnosed with 2- or 3-walled intrabony defect. Patients provided written informed consent. They were randomly assigned to 4 groups: Group P, given vehicle only; Group L, given HPC containing 0.2% FGF-2; Group M, given HPC containing 0.3% FGF-2; and Group H, given HPC containing 0.4% FGF-2. The patients underwent periodontal surgical treatment (modified Widman flap operations) during which we also administered 200 μl of the appropriate investigational drug to periodontal tissue defects. Before and for 72 weeks following administration patients underwent standardized radiography of the region under investigation. Major difference in rate of increase in alveolar bone height was identified between Group P (8.21%, n = 4) and Group H (73.94%, n = 3) at 72 weeks. No serious adverse event was identified. These suggest that some efficacy can be expected from FGF-2 on induced regeneration of periodontal tissue in periodontitis.

667
Ref no: EUABS065042
Free microvascular transfer of cortico-cancellous femur for alveolar ridge reconstruction
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Purposes: Microvascular transplants are often chosen to correct combined soft and hard tissue defects. For defect coverage with a thin soft tissue layer is the aim. The microvascular osteoperiosteal flap from the distal femur is a cortico-cancellous bone flap to be used for individual defect coverage of segmental defects of the jaws.
Methods: In seven patients with alveolar ridge deficiency of the maxilla or mandible, defect coverage was carried out with the help of this femur transplant. The defects to be corrected measured from 3 cm to 10 cm in length. The height was between 1 cm and 2.5 cm. The length of the microvascular pedicle was between 4 cm and 10 cm. The arterial anastomosis was performed between the descending genicular artery and the facial or labial superior artery as end-to-end or end-to-side anastomosis. The venous anastomosis was performed between the accompanying veins of the descending genicular artery and the facial vein or angular vein as end-to-side anastomosis.
Results: There were no severe complications or transplant loss. In all patients the defect coverage was performed in the correct size and design. All patients were treated with dental implants (24) 6 months after ridge reconstruction successfully.
Conclusions: The microvascular osteoperiosteal femur graft can be used successfully in individual reconstruction of alveolar ridge defects of up to 10 cm in length. The transplant can be used for placement of dental implants later on.

668
Ref no: EUABS065023
Implant restoration 3 months after 1-stage sinus lift surgery in severely resorbed maxillae. Multicenter prospective clinical study: 2-year results
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Objectives: This multicenter prospective study was aimed to clinically evaluate implants inserted in severely resorbed maxillae and restored 3 months after sinus grafting.
Materials and methods: In 3 centers, 67 totally rough wide diameter implants (Global, Sweden & Martina) were inserted during 30 consecutive sinus lifts. Sinus grafting was performed using a nano-crystalline hydroxyapatite (Nanobone, Artoos) as only bone filler. Preoperative residual bone height ranged between 1–4 mm (mean: 2.3 mm, SD: 1.0 mm). After 3 months implants were uncovered and, 2 weeks later, restorations were seated according to the platform switching concept. To monitor implant stability, resonance frequency analysis was performed and ISQ values were collected at baseline, at the abutment connection (T_1) and at 2-year follow-up (T_2).
Results: Mean ISQ value was 32.1 (SD: 3.2) at baseline, 68.2 (SD: 1.4) at T_1 and 82.3 (SD: 2.3) at T_2. Differences were statistically significant ($P \leq 0.005$) between T_1 and baseline, as well as between T_2 and T_1. After 2 years of functional loading, 2 implants were lost (cumulative survival rate: 97.0%). The mean radiographic vertical height of grafted sinuses was 14 mm (SD: 1.5 mm).
Conclusions: The results of this study indicate that one stage sinus lift surgery in severely resorbed maxillae using nano-crystalline hydroxyapatite and rough-surfaced implants restored after 3 months using platform switching concept seems to be a reliable procedure.

669
Ref no: EUABS065029
A clinical comparison of autogenous bone graft with and without autogenous periodontal ligament graft in the treatment of periodontal intra-bony defects
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The aim of the present study was to evaluate the efficacy of autogenous bone graft (ABG) with and without autogenous periodontal ligament graft (PDLG) in the management of human two-wall intra-bony periodontal defects. Twenty-six similar two-wall intra-bony periodontal defects with ≥ 5 mm probing depths and ≥ 3 mm depths of intra-bony component in thirteen non-smoking healthy patients were selected. One defect in each subject was treated with ABG alone (ABG group) and the contra-lateral one with ABG and PDLG (PDLG group). The primary outcomes of the study included changes in clinical probing depth (CPD) and clinical attachment level (CAL). Groups showed statistically significant improvements in soft and hard tissue parameters after 6 months. However, the between-group differences after 6 months were not statistically significant with regard to soft and hard tissue measurements except CAL gain. In the combined group, it was significantly higher than the ABG group (3.69 and 2 mm, respectively; $P = 0.03$). Within the limits of this study, both treatments resulted in marked clinical improvement, but combined treatment seemed to enhance the results in the treatment of two-wall intra-bony defects.
Keywords: Intra-bony defect, bone graft, periodontal regeneration, autogenous bone graft, periodontal ligament

670
Ref no: EUABS065014
Application of subepithelial palatal rotated flap to achieve crest augmentation
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Introduction: The existance of crest defects in anterior maxilla may prevent us from achieving optimum aesthetic restorations in this zone. The aim of this work is to show how small to moderate defects with little bone loss might be resolved with soft tissue augmentation.
Material and methods: Bibliographic search from medline: we show different clinical applications of this procedure.
Results: The rotated palatal subepithelial connective tissue flap is a good option to resolve some hard and soft tissue defects in the aesthetic area. We emphasize the advantage of a better blood supply to the graft and the vertical augmentation. This procedure is as well an easy technique for surgeons with little clinical experience.
Conclusions: This surgical technique can be applied to treat small to moderate loss of alveolar ridge that affect a span of one to two lost teeth in the anterior maxilla. Long term stability of this graft should be demonstrated with long follow-up studies.

671
Ref no: EUABS064947
Orthodontic extraction with marsupialization: a case of deeply impacted lower third molar with large dentigerous cyst
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An orthodontic extractive treatment of a deeply impacted third molar with a large dentigerous cyst is described. A highly satisfying outcome has been obtained joining the benefits of an orthodontic extrusive movement to those of a marsupialization. The many clinical advantages of this approach will be discussed. A 33 male with an asymptomatic deeply impacted mandibular right third molar and a large dentigerous cyst was treated as follow: A creation of the orthodontic anchorage B surgical exposure of the crown and cyst marsupialization C orthodontic extrusion of the molar D tooth extraction With a 15 months lasting treatment the initial situation was successfully resolved. No paresthesia occurred and a periodontal improvement on the second molar was obtained. Dentigerous cysts are usually treated by complete surgical enucleation together with extraction of the associated tooth. In the presented case such an approach should have lead to a higher risk of nerve injury, mandibular fracture and severe periodontal defect to the adjacent tooth. In the present approach, besides the neurological advantage due to the orthodontic extraction, the bone apposition resulting from the tooth extrusion have given a positive effort either in terms of bone filling response, which normally follows to a marsupialization procedure, or in terms of improved periodontal support on the second molar. This strategy, exploiting the biological response, has lead to an easy, safe and more comfortable outcome.

672
Ref no: EUABS065818
Follow up on vertical and horizontal guided bone regeneration in implant treatment
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Guided bone regeneration has become a value technique in implant dentistry. Autogenous bone is the gold standard in hard tissue replacement. The use of nonreasorbable membrane has shown advantage over reasorbable membrane in complicated cases. The aim of this case series is to discus the use of Autogenous bone substitutes, and to follow the results over time.
Methods and material: Twenty one cases were done and followed. All of them, but two were done with Nonreasorbable ePTFE and PTFE titanium reinforced membrane; one was made with titanium foil, and one with titanium mesh. All of the cases were complicated, Bone graft were xenografts, allografts, autogenous and alloplastic material, and the combination between this materials.
Conclusions: GBR is a useful and predictable technique. Follow up of complicated cases of vertical and horizontal bone augmentation, the use of bone substitutes reviled high success rate, which raises the question of the need for autogenous bone. The answer is clear.

673
Ref no: EUABS065852
Evaluation the results of periodontal regeneration by perspectives of complex therapy
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Objectives: This clinical trial was designed to compare the clinical outcomes of periodontal surgery with or without the application of a guided tissue regeneration.
Method: The study was realized on 20 patients with pockets ≥ 6 mm and infra-osseous defects with depth ≥ 4 mm and width ≥ 2 mm measured by probing and X-ray evaluation. At baseline and 1 year following the interventions, clinical attachment levels (CALs), probing pocket depths (PPDs), recession, full-mouth plaque scores and full-mouth bleeding scores (FMBS) were assessed. Also the gain in the clinical attachment was evaluated by electronic microscopy.
Results: The values of the clinical attachment level in the test sites were incresead.The electronic microscopy evaluation underling that new materials used in periodontal regeneration offers new cellular perspective in periodontal biology.
Conclusions: The results of this trial indicated that regenerative periodontal surgery offers an additional benefit in terms of CAL gains and PPD reductions.

674
Ref no: EUABS065794
Utilization of an equine membrane and an equine bone replacement graft in the treatment of deep intrabony defects (two case reports)
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Clinical and histological evidence indicate that regeneration of periodontal tissues can be achieved. The aim is to show how an equine collagen membrane and an equine bone replacement graft

can be successfully utilized for the regeneration of periodontal structures on questionable teeth. Two teeth, 13 and 35, in two patients with advanced intrabony defects, were treated by a regenerative periodontal therapy. Tooth 13 had an initial probing depth (PD) of 16 mm mesially while tooth 35 had a PD of 11 mm distally and 7 mm buccally together with pulp necrosis and class II mobility enhanced by occlusal trauma. After initial periodontal therapy, endodontic treatment and removal of occlusal disturbances, reevaluation shows PD reduction and remaining deep intrabony defects. Regenerative surgical therapy was applied on remaining intrabony defects: placement of an equine bone replacement graft (BIO-GEN MIX®, BIOTECK, Torino, Italy) and an equine membrane (BIOCOLLAGEN®, BIOTECK, Torino, Italy). At reevaluation 8 months after treatment, tooth 13 showed a PD reduction from preoperative 9 mm to 4 mm with an increase in recession of 1 mm while tooth 35 showed a PD reduction from 8 mm to 4 mm distally and from 4 mm to 2 mm buccally with no increase in recession. Control X-rays indicated an almost complete resolution of the intrabony defects. Successful restitution of the intrabony defects on questionable teeth can be achieved by combining an equine membrane and an equine bone replacement graft.

675
Ref no: EUABS065757

Acellular dermal allograft and mandibular retromolar bone graft for ridge augmentation: a case report

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Successful implant therapy will be dependent upon an adequate amount of bone and soft tissue at the site of implant placement. Lack of bone and soft tissue volume can be due to post-surgical defects, post-traumatic injuries and congenital or pathological processes. This case report describes and determines the clinical results of ridge augmentation therapy with the use of an acellular dermal matrix (Alloderm®) as an alternative to an autogenous soft tissue graft and a mandibular retromolar bone graft for the ''sandwich'' bone augmentation technique. A healthy 52-year-old woman underwent repair of edentoulous mandibular ridge and the reduced height and width of bone and soft tissue in the site of the planned implants placement forced us to use ridge augmentation techniques. The acellular dermal allograft appears to be a useful substitute for autogenous palatal grafts in soft tissue ridge augmentation surgery. This approach has many advantages over the gingival graft, including no donor site morbidity, unlimited availability, and an adequate volume of soft tissue for posterior ridge augmentation bone surgeries

676
Ref no: EUABS065578

Management of an exposure of a bioresorbable membrane

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Introduction and Aims: The use of bioabsorbable collagen membranes has highly increased because of their significant role in Guided Bone Regeneration. However membranes are exposed in many cases and this exposure has been associated with poor clinical outcomes. Thin mucosa, type of incision, site position, management and suturing of the flaps and handling of the flaps are some reasons which can lead to exposure of the collagen membranes. Time and class (I and II) of exposures are critical for the treatment of this defect. The proposed treatment deals with 1) the contamination of the external side of the membranes, 2) the effort to close or isolate the membrane from the buccal fluids and resorption.
Materials and methods: Two patients underwent a GBR procedure with BioOss-autograft and BioGide at the sites of 24, 14. The dehiscence occurred before the removal of the sutures. The exposed membrane was decontaminated with Naocl and Chlorhedine. Immediately the exposure was covered with Elysol (Colgate) and the gel was let set for three minutes. The gel was renewed every 4 days.
Results: The exposures kept shrinking and closed completely between 7 and 12 days. In both cases GBR succeeded completely and implants were successfully placed at the grafted sites.
Conclusion: The proposed treatment has a good prognosis of the closure of the dehiscence and thus of the unobstructed function of the membrane as a barrier for the GBR procedure.

677
Ref no: EUABS065375

Sinus augmentation with platelet rich fibrin only-clinical and histological findings

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The maxillary posterior edentulous region presents a challenging condition for dental implant placement. Alveolar bone resorption and increased pneumatization of the sinus cavity reduce the amount of alveolar bone necessary to maintain a predictable implant-supported prosthesis. This problem can be overcome by grafting the maxillary sinus floor which provides a sufficient quantity of bone for the placement of endosteal dental implants to support a prosthetic reconstruction. Several treatment modalities for shortening the time period for bone maturation and osseointegration were reported using autologous growth factors originated from platelets yet their activity was immediate and short acting. Using PRF(Platelet Rich Fibrin)-an autologous concentrate of both fibrin matrix as well as cytokines and growth factors slowly released over time have the potential of promoting and accelerating bone regeneration in the maxillary sinus. In this present study 15 patients requiring sinus augmentation with initial bone height of 1–4 mm were selected and scheduled for augmentation with PRF only and simultaneous implant placement. 6 months post op implants were uncovered and bone specimens were taken for histology. CT scans and histological evaluation demonstrate new bone formation without the use of conventional grafting materials.

678
Ref no: EUABS066890

Long-term results of regenerative periodontal therapy with enamel matrix proteins in infrabony defects

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Aim of this clinical study was to assess the short-term results (1 year) and long-term stability of clinical attachment level (CAL) gain following regenerative therapy with enamel matrix proteins dependent on smoking habits and location of maintenance care. Twenty five patients (14 female, 11 male) with a total of 51 defects were initially included. Each subject exhibited at least one deep proximal defect with a probing depth ≥ 6 mm and radiographic evidence of a ≥ 3 mm infrabony component. After 1

year 51 defects (25 patients) and after 8.4 years (min. 7.5, max. 9.5 years) 31 defects (15 patients) could be reevaluated. After one year no significant difference of CAL-gain between non-smokers ($n = 25$) and smokers ($n = 6$) was observed (2.16 mm ± 1.37 versus 2.17 mm ± 1.17). After 8.4 years non-smokers showed significant ($P < 0.05$) higher CAL-gain (3.38 mm ± 2.17) than smokers (0.5 mm ± 0.5). The patients who received the supportive periodontal therapy (SPT) in private practice ($n = 15$) lost significantly more teeth ($P = 0.002$, chi-square-test) than those patients who were treated at university hospital ($n = 16$) (7 versus 0 teeth). The results over a period of 8.4 years demonstrated the stability of CAL gain following regenerative therapy for non-smokers. Smokers showed significant less CAL gain than non-smokers. A tight SPT is necessary to assure long-term stability.

679
Ref no: EUABS066899

Treatment of endodontic-periodontal lesion of a mandibular molar tooth with guided tissue regeneration technique: case report

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Chronic periodontic-endodontic lesions are not common in clinical practice and their regenerative capacity has long been questioned. There are not enough published studies evaluating the application of guided tissue regeneration technique in combination with endodontic treatment in periodontic-endodontic defects. A case of an endo-perio combined lesion on a mandibular molar tooth was first treated with convensional endodontic treatment. After 1 month of healing period periodontal surgery was planned this included scaling and root planning. The bony defect was filled with a natural osteoconductive bone material (Bio–Oss®). A resorbable collagen membran (Bio–Gide®) was used to cover the bone material and the periodontal flap sutured over this. This treatment resulted in minimal probing depth (2 mm), maximal clinical attachment gain (5 mm). This 2 years old case report follow-up study evaluated the clinical and radiographic outcomes of guided tissue regeneration used to treat a periodontic-endodontic lesion of a tooth.

680
Ref no: EUABS066934

Evaluation the results of periodontal regeneration by perspectives of complex therapy

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Objectives: This clinical trial was designed to compare the clinical outcomes of periodontal surgery with or without the application of guided tissue regeneration.
Method: The study was realized on 20 patients with pockets ≥ 6 mm and infra-osseous defects with depth ≥ 4 mm and width ≥ 2 mm measured by probing and X-ray evaluation. At baseline and 1 year following the interventions, clinical attachment levels (CALs), probing pocket depths (PPDs), recession, full-mouth plaque scores and full-mouth bleeding scores (FMBS) were assessed. Also the gain in the clinical attachment was evaluated by electronic microscopy.
Results: The values of the clinical attachment level in the test sites were incresead.The electronic microscopy evaluation underling that new materials used in periodontal regeneration offers new cellular perspective in periodontal biology.
Conclusions: The results of this trial indicated that regenerative periodontal surgery offers an additional benefit in terms of CAL gains and PPD reductions.

681
Ref no: EUABS067027

Scintigraphic evaluation of osteoblastic activity in extraction sockets treated with platelet-rich fibrin: preliminary results

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Background: Platelet-rich fibrin (PRF) has been introduced as a new generation of platelet concentrates and been proposed to enhance both soft tissue and bone healing.In addition to its composition as a true autologous fibrin glue, the main effects of PRF on wound healing has been attributed to the presence of various growth factors, cytokines and glycoproteins thought to be enmeshed in the PRF.
Aim: To evaluate the osteoblastic activity (OA) in PRF-treated third molar extraction sockets by bone scintigrapy.
Subjects and methods: Eleven non-smoker patients (5 females, 6 males; age range 18–22), with similarly impacted lower third molars to be surgically extracted, were included in the study. The teeth were extracted in the same session and PRF was applied into one of the sockets while the other was left untreated to serve as control. One month after surgery, bone scintigraphic images were obtained to compare the OA within bilateral extraction sockets.
Results: In 6 cases, the OA in PRF-treated extraction sockets was less than that observed in controls (ratio: 0.671–0.892). In 2 cases, OA in PRF-treated sockets was almost the same as controls (ratio: 0.988–1.065). A slight increase of OA was noted in 3 cases (ratio: 1.123–1.204).
Conclusions: The preliminary results of this study demonstrate that PRF may not significantly increase the OA in PRF-treated extraction sockets 1 month after surgery.Further studies are needed to evaluate the possible enhancing role of PRF on bone healing.

682
Ref no: EUABS067019

Platelet-rich fibrin (PRF) membrane combined with autogenous bone graft in the treatment of intrabony defect: a case report

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Background: Platelet-rich fibrin (PRF) belongs to a new generation of platelet concentrates, with simplified processing and without biochemical blood handling. It has been referred to as a second-generation platelet concentrate, which has been shown to have several advantages over traditionally prerared Platelet-rich plasma. Its chief advantages include ease of preparation and lack of biochemical handling of blood, which makes this preparation strictly autologous.
Case report: 51 year-old male patient was referred to our clinic with localized severe periodontal destruction at the left mandibular anterior region between second incisor and canine teeth. At baseline and 3 months after surgery, clinical measurements that includes gingival index, plaque index, bleeding on probing, gingival recession, probing depths and clinical attachment levels were

obtained and periapical radyographs were taken. We decided that canine tooth had a combined periodontal-endodontic lesion. The treatment included root canal filling and GTR.
Results: After months, 6 mm clinical attachment gain was measured on the distal side of the second incisor and mesial side of the canine. Probing depth decreased by 8 mm on the distal side of the second incisor and 9 mm on mesial side of the canine.
Conclusion: PRF membrane combined with autogenous bone graft demonstrated favorable improvements in soft and hard tissue parameters in the treatment of periodontal intraosseous defect.

683
Ref no: EUABS065984

Ridge augmentation using bovine-derived xenograft prior to implant placement in the esthetic zone

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For a long time autogeneous grafts have been the gold standard in the treatment of severe ridge defects for implant placement in the esthetic zone. However, autogeneous grafts require a second surgical harvesting site leading to greater morbidity of the patient. The aim of the presentation is to demonstrate predictable implant esthetics after treatment of severe ridge defects by the use of bovine derived xenograft in combination with a resorbable collagen membrane. Severe ridge defects after tooth loss in the esthetic zone were treated by bovine derived xenograft in combination with a collagen membrane. Sixth months after augmentation implant(s) were placed. While Maryland bridges served as temporary restorations during the surgical stage individually shaped resin crowns were positioned after reopening of the implant for the maturation of the gingival tissues. Ceramic abutments with full ceramic crowns were inserted three to 6 months later when ideal gingival emerging profiles had been achieved. Predictable outcomes in implant treatment of severe ridge defects in the esthetic zone can be achieved by the only use of bovine derived xenograft in combination with a collagen membrane in a two stage procedure avoiding greater patient morbidity. Maturation of gingival tissues by reshaping of temporary crowns for an ideal emerging profile serves as a key issue for esthetic success.

684
Ref no: EUABS066022

Treatment of recession-type defects with a coronally advanced flap and enamel matrix derivative: preliminary results

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Aim: The purpose of this study was to assess the ability of enamel matrix derivative (EMD) to improve root coverage with a modified lateral and coronal advanced flap.
Material and method: 14 recession-type defects affecting adjacent teeth in esthetic areas of the mouth were enrolled in the study. All recessions were Miller class I and II. In each patient, all present recessions were treated at the same time with a lateral and coronal advanced flap and EMD. The clinical revaluation was made 6 months after the surgery.
Results: A total of 14 recessions (mean recession depth 3.4 mm and length 3.8) were treated. At the 6 months examination, 65.7% of the root surface was covered with soft tissue and 4 defects (33%) showed complete root coverage. A decrease of keratinized tissue 0.5 mm mesial and 1.3 on distal sites was observed after 6 months. However it was an increase of 0.5 mm on medial site. Greater reductions in recession depth and width were observed in the cases with worse initial conditions and with lesser amount of keratinized tissue apical to the recession defect. The periodontal clinical parameters, like probing depth, plaque index and bleeding on probing were maintained until 6 months. The hypersensitive referred by patients decreased 33% since baseline.
Conclusion: The preliminary results of the present study shows that the proposed surgical technique could be effective in these patients for the treatment of multiple gingival recessions in esthetic areas, at least short term.

685
Ref no: EUABS066048

Phase? clinical trial for periodontal regeneration by KCB-1D (FGF-2) – report of four cases of KCB-1D application in chronic periodotitis patients

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Background: Preclinical and clinical evidences suggest that fibroblast growth factor (FGF)-2 can promote periodontal regeneration. A randomized double-blinded clinical trial involving multiple centers was performed from 2005 to 2007. We report here 4 cases of these study subjects.
Materials and methods: The patients were between 42 and 69 years of age and one of them was a two-pack-a-day smoker. Written informed consents were obtained. The patients were randomly assigned to one of the 4 study groups: Placebo group, 0.2% FGF-2, 0.3% FGF-2, or 0.4% FGF-2-administered groups. A single operator performed periodontal surgeries for all 4 patients during which 200 μl of the investigational drug was administered.
Results: In the three non-smoking patients, FGF-2 resulted in major bone fill (68.6–75.0%) and attachment gain (2–5 mm) at 36 weeks after administration. However, in the heavy smoking patient who received 0.3% FGF-2, these scores were not significantly improved (bone fill: 1.5%, attachment gain: -1 mm).
Discussion and conclusion: The findings indicate that FGF-2 can induce regeneration of periodontal tissue potentially by the angiogenic activity and the ability to stimulate mesenchymal cells to proliferate. On the other hand, heavy smoking appeared to inhibit the regenerative effect of FGF-2.

Clinical tips and cases – Restorative aspects

686
Ref no: EUABS065500
All-ceramic restorations in perioprosthetics – a case report
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Aim: A fixed maxillary restoration was planned in a male patient 44 years of age with chronic periodontitis of genetic background.
Material and methods: Preoperative evaluation of the periodontium revealed 10 teeth with 9 pocket depths > 3.4 mm, 26% bleeding on probing, and 3 teeth with tissue recession. Treatment was started by initiating comprehensive periodontal treatment. All teeth in the maxilla and mandible were adjusted with abrasive instruments to raise the vertical dimension of occlusion. An interim non-precious metal restoration veneered with resin was fabricated and worn by the patient for 6 months. Six months later, the maxillary interim restoration was removed. Following more abrasive adjustments on all teeth, another impression was taken. The framework was first waxed up on the master cast. Then the resultant structure was scanned and milled in zirconia using a KaVo Everest CAD/CAM system. With sintering-related distortion occurring twice, the zirconia had to be milled three times. A biscuit try-in was performed to verify phonetics, esthetics and precision of fit. After glaze firing, the definitive 13-unit fixed partial denture was delivered with permanent resin-modified glass-ionomer cement. Finally the occlusion was carefully assessed.
Conclusions: This case report demonstrates that, depending on the CAD/CAM system used, all-ceramic fixed partial dentures can be a suitable treatment option in periodontally compromised patients.

687
Ref no: EUABS065507
Retrospective study of cross-arch fixed partial dentures in patients with periodontal disease
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Aim: A retrospective study was performed to test the hypothesis that a case can be made for one-piece large-span FDPs supported by periodontally compromised teeth in well-selected patients.
Materials and methods: A total of 20 patients were included. All patients had undergone periodontal, functional and endodontic treatment.The maxilla was periodontally compromised in all cases. A total of 21 FDPs were inserted, one of them replacing a preexisting FDP. Three different designs were used: zirconia, metal-ceramic or non-precious metal veneered with resin. A number of clinical and radiological parameters were evaluated. Following diagnosis and collection of these baseline data, a comprehensive treatment plan was developed.
Results: The mean survival of all restorations was 48 (4–132) months at the time when they were last evaluated. Their mean span was 12.7 (11–14) units. The parameters obtained during the latest visit were compared to the baseline data collected at the outset of maintenance therapy. A total of 162 teeth had been present at baseline. All teeth served as abutments for the 21 FDPs, which included a total of 97 pontics and 7 cantilevers. No complications occurred in 13 of the 21 restorations. Complications in the remaining 8 cases included ceramic chipping, nonvital teeth, tooth extraction and tooth decay.
Conclusions: These findings confirm that large-span FDPs constitute a serious restorative option in periodontally compromised residual dentitions.

688
Ref no: EUABS065338
Bilateral intentional replantation followed by dental implant therapy in the esthetic zone
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Background: Intentional replantation can be an alternative choice for periodontally involved hopeless tooth at least for a period of time. This case presents an intentional replantation of periodontally involved hopeless bilateral maxillary lateral teeth with 6 years of results.
Case report: Maxillary right and left lateral incisors had deep periodontal pockets and radiographically there was a serious bone loss. Teeth were replanted after Tetracycline–HCI conditioning. At the end of 5 years right lateral incisor was asymptomatic and still in function with no radiographic signs of pathosis. However, in left lateral incisor there was ''replacement external resorption'' in the apical part of the root. The tooth was extracted with conservative methods that limit periosteal elevation and trauma to underlying bone. Then immediate implant placement was performed. After one week healing period, patients' own tooth crown was prepared and splinted, used as temporary pontic. Final restoration was performed after 3 months.
Conclusion: It may be suggested that intentional replantation can be an alternative approach to cases that advanced periodontal destruction is present. Additionally, dental implants could be successfully used to reconstruct these sites after replanted tooth is extracted.

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Ref no: EUABS065153
Immediate loading with overdenture in edentulous jaws: long term results
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Aim: To evaluate clinical efficacy of immediate loaded implants with overdenture.
Methods: A total of 636 Ankylos implants were placed in 77 edentulous mandibles and in 82 edentulous maxillas (four implants in each jaw) and immediately loaded. Implant length ranged from 9.5 mm to 17 mm. 145 patients (mean age 62 years) were monitored in this study. Following surgery all implants were connected with prefabricated conical abutments, which are manufactured with a precise fit to secondary conical copings. These prefabricated copings are polymerised into denture base directly in the mouth of the patients. Clinical and radiographic parameters, patient' satisfaction, and technical complications were recorded.
Results: Four implants in the mandible and 7 implants in the maxilla were removed during observation period and could be successful replaced but are not included in our statistics that lead

to an implants cumulative survival rate of 98.3% (mandible 98.7%, maxilla 97.9%). After a total observation period of 26.2 months (range 12–68 months) all other implants presented healthy peri-implant soft tissue conditions (mSBI > 1; mPII = 1) and stable bone level. Six patients were not satisfied with aesthetic; all other appreciated function, aesthetic and retention of the restoration.

Conclusions: Basing on the present long-term data it was concluded that four implants with high primary stability may support immediate loading in edentulous mandible as well as in edentulous maxilla.

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Implant supporting maxillary full-arch prostheses: 3-year data

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Aim: This multicenter study reports the clinical outcomes after 3 years of function of dental implants supporting maxillary full-arch bridges.

Methods: Between March-01 to May-06 a total of 189 Ankylos implants were placed in 32 patients with edentulous maxilla. The mean age was 60 years (range 46–72). The implants/patient (Im/P) distributions were: 5 Im/11 P; 6 Im/16 P; 7 Im/3 P; 8 Im/1 P; 9 Im/1 P. 62 implants (32.8%) were placed consecutive to tooth extraction. The implants' length ranged from 8 mm to 14 mm. After 4–6 months of submerged healing the implants were loaded with cemented metal-ceramic full-arch prostheses. The total number of units replaced was 453. All patients were submitted to a quarterly control. In different time intervals PlI, SBI, GI, standardized peri-apical radiographs, technical complications, patients satisfaction were recorded.

Results: After submerged healing time all implants became osseointegrated. During a total observation period of 3 years (range 2–7), 2 implants were lost. Biological complications (bone loss > 2 mm; GI+ and SBI+) were found in 6.3% of the implants. All other implants presented healty soft and hard tissues conditions. 8 patients presented a total of 15 ceramic fractures. 5 patients were not satisfied with aesthetic of the rehabilitation. 2 patients referred phonetic difficulty.

Conclusions: Favourable clinical conditions were found at implants after 3 years of function. Bruxism as well as extensions was associated with more technical failures.

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Ref no: EUABS065745

Conservative treatment of periodontal recessions with class V-defects using gingiva-shaded compomers

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Periodontal recessions with class V-defects often generate esthetic and functional problems. A combination of periodontal disease, recession with exposed root surface, hard-tissue defect and age emphazises shows the need for a treatment of these defects. The restoration of these lesions with tooth-colored materials frequently results in to inferior esthetic results ('long clinical crowns'). These problems may be reduced by using gingiva-shaded compomers. The presented step-by-step-approach is a minimal-invasive treatment concept for cervical lesions in combination with all kinds of periodontal recessions. This case report describes a systematic treatment concept for the restoration of cervical defects combined with gingival recessions, particularly Miller class III and IV, with gingiva- shaded compomers. The gingiva-shaded compomer can be used for a pretherapeutic mock-up prior to surgery. This restorative treatment option is especially valuable for dental fear patients or older patients with general or local risk factors, surgical contraindications or class III and IV-recessions with questionable prognosis of surgery. Esthetic and functional treatment results can be achieved with predictable, good long-term results.

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Ref no: EUABS065822

Evolution study of sample of periapical cyst

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Introduction: Owing to the diferencies on the evolution of the Periapical Cyst and to its high existens, it was decidet to make and study to clasifie the diagnosis, treatment and evololution of the Periapical Cyst.

Material and methods: This Study was realiced between Granada University and Regional University Hospital Carlos Haya of Málaga. A Studywas made retrospective of 118 patients treated with cyst pathology, only later they where diagnosticated anatomypathologyment as Periapical cyst. The variable studied (sex, age, localitation of the cyst, size, afected dental pieze and tipe of treatment made) were submited to stadistical treatment.

Result and Discution: Significant result were obtained is some of the variable analized in the study.The results are discussed with other author, coinciding in the existance of a large prevalence of the cyst in posterior molar.

Conclution: Extrapolating the results to the general population, we can say that the treatment to preserv the pieze is justified when a correct endodontic and exeresis of the cyst is posible.Presenting Author: Irina Sacchi

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The Quattro systeme: advantages to rehabilitate a complete arch (edentulous or not) with a fixed armed acrylic bridge on immediate loading

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The Quattro systeme: As the ''all on four'' concept protocols, this technical surgery is indicated for the upper or the lower jaw, endentulous or not. The treatment is composed of three stages: Before the surgery, the planification of the final prosthesis (aesthetics and function), the surgery with the 4 implant placement, and immediately loaded with the prosthetic stage at the end of the day. This short time to transform an oral handicap with old and misfit prosthesis in functionnal smile is an advantage for the predictibility issue of the treatment. In fact, the immediate loading in the mandidubule or maxillae for a complete-arch restoration seems to be a better choice to see the cumulative survival rate growing, perhaps because the compliance of the patient is growing when the end of treatment is without delay. Results of 3 years clinical observations with this protocol will be exposed and commented.

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Study of the aspirations of a group of patients in the choice of a biomaterial for the treatment of intrabony defects

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Aims: To evaluate the preferences of a group of patients for biomaterials for the purpose of bone repair or osseous regeneration.

Material and methods: A questionnaire has been delivered to a group of 108 patients (51 male and 57 female) in consultation in the department of periodontology of the dental faculty of Strasbourg (France) between 2007 and 2008.

Results: No significant difference has been revealed between male and female ($P > 0.05$). The scores of the materials were, in a decreasing order, so called natural materials (coral, algae: 26%), alloplastic materials (24%), autogenous bone (23%), xenograft from bovine (12%) or porcine (9%) origin and allograft (6%). Small scores obtained by xenograft and allograft have been explained by a lack of information (41%), fear of contamination (39%), ethical (13%) or religious (7%) reasons. Additional information about the enamel matrix proteins (EMP) of porcine origin has led 66% of the patients to modify their initial choice. Individual financial contributions were variable: null (14%), flap debridment (230€: 12%), associated with a filling biomaterial (310€: 18%), and to the GTR with EMP (420€: 20%) or GTR with membrane (470€: 36%).

Conclusion: Despite a significant preference for autogenous, natural or alloplastic biomaterials, the patients' choice is clearly influenced by the dentist. The results also raised the question of different therapeutic approaches owing to financial motivations.

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Ref no: EUABS064715

An interdisciplinary approach for improoved functional and esthetic results in periodontally compromised elderly patient

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The elderly population has increased in an explosive fashion. Aging is the process by which a person grows old, irrespective of the time required. It includes the complex interaction of biological, psychological and sociological processes. The aim of this report was to demonstrate how to improve the oral health of an elderly patient with complex clinical problems. This case report demonstrates combined therapy with periodontic, orthodontic and prosthodontic treatments in a 70-year and 1 month old female patient with maxillary anterior protrusion and diastemata caused by generalized periodontitis of moderate severity, inadequate fixed prosthetic in posterior segment and filling in need of replacement. The patient had improved her oral hygiene condition through periodontal therapy before prosthodontic and orthodontic treatment. The new fixed prosthetic was done with a purpose to avoid occlusal disturbance; the patient was then orthodontically treated with fixed orthodontic appliance. Active orthodontic treatment was completed in 18 months. After active orthodontic therapy the patient received removable acrylic splint for retention of the teeth. We demonstrate that combined periodontic – prosthodontic – orthodontic treatment can achieve an improved masticatory function, esthetic, occlusion and periodontal condition.