AUTOTRANSPLANTATION OF WISDOM TOOTH (1.8) TO FIRST MOLAR (1.6): A CASE REPORT WITH 6 MONTH FOLLOW-UP

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Dental autotrasplantation is defined as the movement of one tooth from one position to another, within the same person. This could involve the transfer of impacted, embedded, or erupted teeth into extraction sites or into surgically prepared sockets.

To demonstrate autotransplantation is a predictable and sustainable technique with biological and economic advantages. It can be used as a possible alternative to fixed and removable prosthesis, especially in partially edentulous young patients.

A 24-years-old patient came to our attention for the treatment of residual roots of the maxillary first molar(1.6). Considering the presence of a healthy and unfunctional maxillary third molar, the young age of the patient and the fact that alternative treatments were unaffordable, it was suggested to the patient a treatment protocol which involved superior third molar (1.8) autotransplantation after extraction of carious tooth. The first molar was extracted as atraumatically as possible. The interseptal bone was subjected to alveoloplastic. Once the third molar was extracted, it was fitted in the prepared socket. It was stabilized by sutures and by a metallic splint. Thanks to the accumulated experience in this kind of surgical treatment and to a good use of literature, endodontic treatment wasn't considered necessary.

After only one week follow-up soft tissues showed significant improvements. At the 2-month follow-up the tooth showed surprisingly responsive and alive. At the 6-month follow up, wisdom tooth didn't show pathological features in agreement with radiological exam.

The success of this case can be attributed to the atraumatic surgical technique and to the experience gained in the previous autotransplantations. Dental autotransplantation can be considered not only an alternative to fixed or removable prosthesis, but also a treatment to improve prognosis of lost teeth. In fact, in the case of autotransplantation failure, implant placement may still be possible.

THE VALUE OF MICROCIRCULATION BY DYNAMIC IN TREATMENT OF INFLAMMATORY PERIODONTAL DISEASES

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The deterioration of the microcirculation of periodontal tissues is an important link in the chain of pathogenesis of inflammatory periodontal diseases.
Factors ensuring the constancy of hemodynamics are among the ones determining the occurrence and course of pathological processes.

On the basis of clinical and functional observations, to study the diagnosis effectiveness of microcirculatory parameters in the dynamics of the analysis of the treatment effectiveness of inflammatory periodontal diseases.

67 patients whom are diagnosed with chronic generalized periodontitis of moderate severity, were divided into two groups: main (34) and control (33). Patients underwent (1) SRP with treatment of periodontal pockets by ozono-oxigen through gaseous form (2) SRP using local antiseptics. At all stages, the clinical evaluation of periodontal tissue was assessed by determining the indices (OHI-s, PMA, PI, CPITN, PBI), CBCT and microcirculation of periodontal tissues at all stages of treatment. The study was performed by ultrasound dopplerography using the Minimax-Doppler-K device (OOO SP Minimax, St. Petersburg).

The linear velocity of the blood flow (Vam) is the most important diagnostic criterion of microcirculatory disorders in periodontal tissues according to the correlation relationships of the hemodynamic parameter. The parameter (Vam) in the main group was 0.7802 ± 0.1301 at the initial week 0.5301 ± 0.2172 cm / sec, while in the control group it was at the initial 0.5241 ± 0.2432 cm / sec after treatment, the analogous index was 0.6102 ± 0.1421 cm / sec.

The use of the velocity characteristics of the tissue blood flow allows the diagnose of hemodynamic changes in periodontal tissues. The method of ultrasonic dopplerography allows assessing the state of the microcirculatory bed under dynamic observation. After ozone therapy, the periodontal microcirculation state according to Doppler ultrasound has improved by 30%, which proves its positive effect on hemodynamics.

USE OF TOPICAL DOXICICLYNE IN ADJUNCTION TO MECHANICAL DEBRIDMENT FOR THE TREATMENT OF RESIDUAL/RECURRENT PERIODONTAL POCKETS. 1 YEAR RESULTS OF A PROSPECTIVE COHORT STUDY

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Residual periodontal pockets after non-surgical therapy are usually candidate for surgical treatment. Failures depend from an uncomplete decontamination of the pocket due to local anatomical factors, the use of local highly concentrated antibiotic could represent a further step in not surgical treatment.

The aim of the study was to evaluate the effect of a session of SCRP + local antibiotic in the management of residual periodontal pockets.

1 year prospective, cohort study on patients referring to authors' private practice who during supportive periodontal therapy showed at least 1 site with PPD > 4 mm and BoP +.
Participants should be cooperative, systemically healthy adults; no known hypersensitivity to tetracyclines; FMPS and FMBS < 25%.
Parameters: PPD, BoP, REC.
Procedure: thoroughly SCRP by mean of hand instruments, ultrasonic and airflow devices followed by application of a doxycycline gel; 3 months recall program

Results
21 patients (9 M, 12 F, mean age 62, 18 non-smokers) were enrolled providing 46 sites. Baseline mean PPD was 7,0 mm distributed as follow: 0% PPD ≤4, 54,3 % 4 < PPD ≤6 and 45,7% PPD > 6; 100% BoP +.
3 months: mean PPD = 3,9mm (Δ=-3,1 mm); 71,7 % of the sites showed a PPD ≤ 4, 26.1 % 4 < PPD ≤6 and 2,2 % had PPD > 6. No sites showed worsening, 3 sites (7%) did not improve; 43 (93%) improved at least 1 mm. BoP+ sites decreased at 41,3 %.
1 year evaluation: mean PPD =-4,2 mm, 65,2 % of the sites showed a PPD ≤ 4, 28,3 % 4 < PPD ≤6 and 6,5 % had PPD > 6and % BoP+ 47,8. 65% of the sites deeper than 6 mm at BL decreased at PPD ≤ 4.

Thus, from the data of the present investigation it appears that tested procedure was effective in promoting healing of residual or recurrent pockets in well controlled maintenance patients for at least 1 year.
Lack of a control group precludes a full understanding of the role of the antibiotic but the evident reduction in the number of bleeding sites and in PPD is encouraging and needs further investigations.

JUSTIFICATION OF THE SYSTEMIC APPROACH TO DIAGNOSIS AND TREATMENT PATIENTS WITH DIABETES MELLITUS AND PERIODONTAL DISEASE

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Periodontitis is a polyetiological disease. There is a bidirectional relationship between periodontal diseases and diabetes mellitus.

to study the effectiveness of the conservative stage of complex periodontal treatment among patients with type 1 diabetes of different ages.

We conducted a survey of 25 people from 20 to 50 years who had type 1 diabetes. Patients were divided into groups depending on age: group 1 - from 20 to 30 years, group 2 - from 30 to 40, group 3 - from 40 to 50 years. All patients answered questionnaires and underwent a dental examination with pH-metry of the oral liquid. Then, all patients underwent a professional oral hygiene complex. After 4 weeks there was a reexamination.

Patients with type 1 diabetes had on average a weakly positive compliance (4,36). The average values of the Green-Vermillon hygiene index (1,22) and the Silness-Loe dental plaque index (0,92) were satisfactory, the approximal plaque index (71,4%) was quite high. Indices of periodontal status indicated the presence of inflammation of the gingiva (PMA = 42,1%, Muhle-mann index = 0,78). The pH of the oral liquid was the lowest in group 2 (4,86). After 4 weeks compliance increased by an average of 3.5 units. Re-measuring the indices showed a significant decrease in amount of dental plaque and calculus and in inflammation of gums (Green-Vermillon index=1,04, Silness-Loe index = 0,87, Muhlemann index = 0,66, API = 66,4%, PMA = 20%).

With age among patients with type 1 diabetes mellitus compliance decreases, which in a certain way affects the state of the oral cavity. 1 month after the conducted professional oral hygiene complex there was found an improvement in the hygienic and periodontal status of the oral cavity in patients with diabetes, as well as an increase in the level of compliance.

POCKET CLOSURE: A MULTILEVEL ANALYSIS OF PATIENTS TREATED WITH NON SURGICAL THERAPY

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The goal of non-surgical treatment is to obtain shallow probing pocket depth without bleeding on probing. Gain of knowledge about factors which have an impact on the outcomes of non-surgical therapy would be beneficial for treatment plan in clinical practice.

The aim of this study was to investigate efficacy of non-surgical therapy and factors affecting the probability of pocket closure 3 months after non-surgical therapy by mean of multilevel analysis.

This retrospective study included the clinical folders of 32 patients affected from stage III periodontitis that completed non-surgical periodontal therapy at the Periodontology Department of the University of Turin. In order to be included in the study complete anamnesis, periodontal charts at baseline (T0) and 3 months after non-surgical treatment (T1) had to be present. Multilevel analysis was used to assess the impact of a variety of factors at patient, tooth and site level on the probability of pocket closure (PPD≤4 mm without BOP) at T1.

Pocket closure was attained in 63.4% of diseased sites.
Tooth type (single vs. multi-rooted), % of sites with PPD ≥ 5mm, presence of plaque at T1, mobility, furcation involvement, site position (interproximal vs lingual/vestibular) had a significant impact ($p<0.005$) on pocket closure. In particular mobility ≥ 2 degree was the factor which most negatively affected the probability of pocket closure OR 0.17 (CI: 95%, 0,07-0,45%).

Tooth type, plaque at site level, mobility, furcation involvement and site position were significant factors in the determining the probability of pocket closure after non-surgical periodontal therapy.

DIAGNOSTICS IN ORTHODONTIC TREATMENT IN PATIENTS WITH DIFFERENT GINGIVAL PHENOTYPE AND MALOCCLUSION

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Currently, there is a significant increase in the number of patients seeking orthodontic treatment, and thereafter the number of periodontal complications of periodontal after orthodontic treatment increases. The reason for these situations is defective, or insufficiently correctly carried out diagnostics - the wrong definition of the gingival phenotype.

To improve the quality of orthodontic treatment of patients with different periodontal phenotypes by using clinical and laboratory methods, ultrasonic scanning, cone-beam computed tomography.

60 patients aged 19 - 25 years with malocclusion were divided into 2 groups: 30 – with a thin gingival phenotype (A), 30 – with thick phenotype (B). Clinically phenotype was measured by the colorimetric probe – white, green, blue colors (Hu-Friedy). The thickness of the gingiva was measured by MyLabTwice ultrasonic device (Esaote). The condition of the alveolar bone of the jaws of all patients was assessed using cone-beam computed tomography.

According to the scanning in group A gingival thickness amounted to 0.75±0.3 mm ($p<0.005$), in group B - 1.9±0.4 mm ($p<0.005$). Cone-beam computed tomography in addition to the differences of the bone thickness showed that 69% of A group had dehiscence and 17% had fenestrations, in group B – 20% of dehiscence, 3% of fenestrations.

The clinical evaluation of the gingival phenotype does not allow adequate planning of orthodontic teeth movement. Ultrasonic evaluation of gingival thickness minimizes the risk of recessions. Cone-beam computed tomography presents the significantly increased information on the thickness of bone structures on all surfaces. Integrated use of these methods allows to optimize the choice of rational methods of orthodontic intervention and the limits of moving teeth and buccal inclination. This improves the efficiency of orthodontic treatment in general and prevents deep damage to the periodontal structures.

THE CO-OCCURRENCE OF THE TWO MAIN ORAL DISEASES: PERIODONTITIS AND DENTAL CARIES

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Aim: No studies are available testing, through multivariate models, the association between the two main oral diseases: dental caries and periodontitis.
The aim of this cross-sectional population-based study was to verify whether dental caries and periodontitis co-occur in a representative sample of the South Korea population.
Materials and Methods: A total of 23,405 subjects representative of 36.2 million of adults were examined. Univariate and multivariate regression analyses using 5 different models were applied, controlling for age, gender, smoking status, frequency of tooth-brushing, use of interproximal toothbrushes and flossing, educational level, income, gum diseases treatment and tooth filling in the previous year, BMI, Vitamin D serum levels, alcoholism, diabetes status, stress and carbohydrates dietary intake.
Results: In the fully-adjusted model, participants with periodontitis had, respectively, a mean of 0.82 (95% CI: 0.41-1.23) and of 0.36 (95% CI: 0.22-0.50) more untreated decayed surfaces and teeth than participants without periodontitis, with an OR to have at least one untreated decayed surface of 1.96 (95% CI: 1.66-2.32). However, cumulative caries experience (DF scores) and periodontitis were not associated.
Conclusions: In this large nationally-representative population, periodontitis and untreated dental caries co-occur, independently from common risk factors. However, when considering cumulative caries experience (DF scores), the two diseases appear not to be independently related.

PERIODONTAL INFLAMMATION IS ASSOCIATED WITH INCREASED SERUM CGRP LEVELS IN PATIENTS WITH CHRONIC MIGRAIN

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Recently, a relationship was found between periodontitis (PD) and chronic migraine (CM). Calcitonin gene-related peptide (CGRP) is key in migraine pathophysiology. However, no information exists of the potential association between periodontal inflammation and CGRP in CM. The aim of the study was, therefore, to investigate whether there is a link between PD and peripheral levels of CGRP in a cohort of patients with CM.

We included 102 chronic migraineurs and 77 age and gender matched individuals free of headache/migraine. Full-mouth periodontal parameters were recorded and the periodontal inflamed surface area (PISA) was calculated to quantify the periodontal inflammatory status for each participant. Socio-demographic data and co-morbidities were assessed by means of a standard questionnaire. We collected blood samples and serum concentrations were done for CGRP, interleukin (IL)-6 and IL-10.

In the CM group, patients with PD had greater levels of serum CGRP (19.7±6.5 vs. 15.3±6.2 pg/mL) and IL-6 (15.1±9.2 vs. 9.6±6.3 pg/mL, P<0.0001) while non-significant differences were observed with IL-10 (2.0±1.0 vs. 2.8±1.5 pg/mL, P=0.675) concentrations than those without PD. PISA was independently associated with CGRP in patients with CM (β=0.003; 95%CI: 0.001-0.006, P=0.031). PISA correlated positively with CGRP (r=0.236; P=0.017) and IL-6 (r=0.262; P=0.008) in CM.

Periodontal inflammation is associated with increased circulating levels of CGRP in chronic migraineurs. Elucidating the exact mechanisms through which PD and CGRP are linked in these patients deserves further investigation.

ASSESSMENT OF RESOLUTION OF GINGIVAL INFLAMMATION FOLLOWING ADJUNCTIVE TOPICAL APPLICATION OF OMEGA 3 FATTY ACID AFTER SCALING – A DOUBLE BLINDED INTERVENTIONAL TRIAL

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Periodontal disease is an inflammatory disease of polymicrobial origin. The periodontal therapy is principally targeted to eliminate the microbial plaque, which is responsible for the disease by performing scaling and root planing. Omega 3 fatty acids including docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) were shown to have anti-inflammatory and protective actions in inflammatory disease including periodontitis (Ziboh 1999) due to reduction in superoxide anion generation.

The objective of this study was to evaluate the adjunctive effect of omega 3 fatty acid (topical application) in resolving gingival inflammation after scaling .

A total of 56 subjects were selected from patients visiting the Out- patient Department of Periodontology, Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education. At the baseline visit, all the patients received a complete dental examination and whole unstimulated saliva was collected. Initial therapy was performed on all patients and consisted of complete scaling with ultrasonic instruments following which subjects were randomly assigned to receive omega 3 fatty acid or placebo. The saliva samples were assayed for its total antioxidant capacity. Clinical and biochemical assessment was done at baseline & repeated at 3 weeks post therapy.

Subjects enrolled in this study were randomized into test group (n=29) and control group (n=27). The mean modified sulcular bleeding index, gingival index and oral hygiene index were recorded and in addition to this total antioxidant capacity of saliva was assessed at baseline and follow up visits. Increase in TAO levels attained a statistical significance difference ($p<0.05$) when comparing the test and control groups.

The topical application of omega 3 fatty acid was found to increase the total antioxidant levels of saliva. Omega 3 fatty acid are useful adjuncts for non-surgical periodontal therapy.

MULTIPLE ADJACENT RECESSION DEFECTS TREATED WITH CORONALLY ADVANCED FLAP AND ACELLULAR DERMAL MATRIX IN TWO DIFFERENT GINGIVAL THICKNESS POPULATIONS: 6 MONTH FOLLOW-UP

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Gingival thickness is known to have an impact on root coverage procedures, with thicker flaps at baseline generally achieving higher root coverage. In this controlled clinical trial 22 patients contributed with 2 adjacent Miller I and II defects each. Patients were divided into different groups (thick or thin gingiva) based on their initial gingival thickness and a threshold value set at 0.8 mm. The primary outcome was percent root coverage at 6 months, while secondary outcomes were recession height, recession width, keratinized tissue width, probing depth, clinical attachment level and complete root coverage. All data was collected by an examiner, blinded to the initial group assignment of the patient. Results showed no significant differences between or within groups for the parameters percent root coverage and complete root coverage. Recession height and width were significantly different between baseline and 3 months and baseline and 6 months, while gingival thickness was different between groups at each time-point.

Gingival thickness also changed within groups from baseline to 3 and 6 months while it remained stable between 3 and 6 months. The selected therapy yields stable results over time with no significant difference between groups, despite a trend for higher root coverage values in the thick group.

THE IMPACT OF ENAMEL MATRIX DERIVATIVE APPLICATION ON ACUTE SYSTEMIC INFLAMMATION AFTER PERIODONTAL SURGERY: A RANDOMIZED CONTROLLED CLINICAL TRIAL

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The aim of this study was to compare surgical treatment of periodontal intrabony defects with and without the adjunct of enamel matrix derivative (EMD) in terms of acute-phase responses in healthy patients.

Thirty-eight periodontitis-affected subjects were randomized to surgical treatment or surgical treatment + EMD. Periodontal parameters were recorded at baseline and 6-months. Serum samples were collected at baseline, 1, 7 and 180 days after treatment.

Both treatment modalities resulted in an acute inflammatory response at 24-hr that regressed to its baseline values at day 7. The intergroup comparison showed statistically significant difference with regards to CRP values (P=0.004). The increase of CRP and fibrinogen was higher for control group at day 1, when compared to its baseline values ($p<0.05$ vs. baseline). Better periodontal healing was observed for test group, where the clinical attachment level gain was 4.26 ± 2.182 mm compared to 3.26 ± 2.207 mm for control group.

The adjunction of EMD during surgical treatment was associated with lower increase of CRP and fibrinogen in test group after 24-hr. These findings suggest a possible systemic anti-inflammatory effect of EMD which can be of special interest when treating patients with systemic comorbidities. NCT03590093.

MELATONINE AS HOST MODULATING AGENT SUPPORTING NON SURGICAL PERIODONTAL THERAPY IN PATIENTS AFFECTED BY UNTREATED MODERATE TO SEVERE PERIODONTITIS: A PRELIMINARY RANDOMIZED, TRIPLE-BLIND, PLACEBO-CONTROLLED STUDY

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The aim of the current clinical trial was to evaluate if the oral supplementation of melatonin (1mg/die for 30 days) after non-surgical periodontal therapy (NSPT), determined a better periodontal healing than NSPT alone, in patients affected by untreated moderate (stage II) to severe (Stage III) periodontitis.

This is a randomized, triple-blind, placebo-controlled study. Twenty patients who fulfilled inclusion criteria were blindly randomized either to melatonin or placebo group. The melatonin group received NSPT and melatonin capsules 1mg/die for 1 month, while the placebo group received NSPT and placebo capsules for 1months. The patients were evaluated at baseline and 6 months after. Mean change from baseline probing depth (PD) was the primary outcome. Mann-Withney test was used to evaluate statistical significance (α=.05).

Melatonin was well tolerated by all patients. Melatonin administration resulted in greater mean PD change at 6 months if compared to control group: p-value 0.00015 when considering teeth with at least one pocket 4-5mm and p-value 0.00025 when considering teeth with at least one pocket ≥6mm

Current study, within its limitations, concluded that oral administration of melatonin (1mg/die for 30 days) after one-stage full mouth NSPT determined a greater change from baseline PD if compared to NSPT alone, in untreated severe to moderate periodontitis. This could provide a non-pharmacological support to improve periodontal healing after NSPT.

OZONIZED-OIL, POVIDONE-IODINE, CHLORHEXIDINE-DIGLUCONATE AGAINST ORAL-BIOFILM ON MICROSTRUCTURED-TITANIUM SURFACE

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Implant surface decontamination is a crucial aspect for peri-implantitis treatment.

The purpose of this preclinical-study was to compare the efficacy of 100% ozonated-oil (O3-OIL) to 0.2% chlorhexidine-digluconate (CHX) and 10% povidone-iodine (PVP-I) against an oral-biofilm developed on a microstructured-titanium surface.

Four overly-healthy adults with good oral-hygiene and good oral-health were enrolled. Oral-biofilm was formed in-situ on 144 sandblasted titanium specimens (Ra: 1.68). Specimens were fixed on custom-made splints and exposed into the oral cavity overnight (12h). Biofilm-covered specimens were then randomly assigned to four groups: O3-OIL(n=36), CHX(n=36), PVP-I(n=36) and phosphate-buffered-saline (PBS)(n=36) as negative-control. Specimens were tested for a 1min of incubation-time. Viable biofilm was than quantified by bioluminescence on microtiter-plates.
A linear mixed effects model was used to evaluate the influence of the type of antiseptic on the effectiveness, considering as fixed effects the antiseptic and the experiment. The distributive normality of the bioluminescence was evaluated with the Shapiro-Wilk test. The Mann-Whitney U-test was performed for the comparison among the antiseptics. The α significance level was set at 0.05; for the multiple comparisons was applied the Bonferroni correction (α=1.7e-2).

Each antiseptic was able to significantly reduce ($p<0,001$) the oral-biofilm when compared to the negative-control. The comparison among the tested antiseptics reveals that O3-OIL was less effective than both PVP-I ($p<0,001$) and CHX ($p<0,001$) against the oral-biofilm. PVP-I and CHX showed to be equally effective against the oral-biofilm since the difference between them was not significant ($p=0,386$).

The present work contrast with previous promising findings, where O3-OIL resulted as effective as or superior to CHX and PVP-I against planktonic microorganisms. Biofilm seems to be a significant limit to O3-OIL effectiveness.

SONIC DEVICE OR CONVENTIONAL DRILLS FOR IMPLANTS SITES PREPARATION: A BONE HEALING HISTOMORPHOMETRIC RANDOMIZED CONTROLLED CLINICAL TRIAL

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A recent systematic review evaluated the influence on bone-implant interface of recipient sites preparation performed with conventional drills, osteotomes and piezoelectric devices (Tretto et al. 2018). No differences were found. The use of piezoelectric or sonic devices has become widespread during the last years due to the precision, the reduced risk of damaging soft tissues and the clear view of the surgical sites (Vercellotti et al 2003; Viganó et al 2015).
Given that, the evidences that may support the use of sonic devices seem not to be sufficient yet (Ruga et al. 2017).

To evaluate histologically the early healing at implants installed in sites prepared with either a sonic device or conventional drills.

Sixteen patients were recruited. Two mini-implants, were inserted in the posterior maxilla in sites prepared either with a sonic device or conventional drills. Biopsies containing the mini-implants were retrieved after 2 and 6 weeks in eight patients for each group. Histometric (BIC, Bone-to-implant contact) and histomorphometric analyses were performed.

Histological slides were available from 7 patients for both groups.
After 2 weeks of healing, new bone in contact with the implant (BIC) was 5.5±7.3% and 3.8±10.0% at the sonic and drill groups, respectively.
From histomorphometric analysis new bone and old bone were 3.5±3.9%, 43.1±9.1% in the sonic group and 6.3±13.0%, 37.9±12.2% in the drill group.
After 6 weeks of healing, new bone in contact with the implant (BIC) was 46.9±15.5% at the sonic group, and 46.4±14.9% at the drill group.
From histomorphometric analysis new bone and old bone were 48.1±8.6%, 20.1±5.7%, in the sonic group, and 47.5±4.4%, 20.0±4.3% in the drill group.
None of the differences was statically significant.

Similar amount of newly formed bone were observed at implant sites prepared either with a sonic device or drills.
The present outcome suggested that sonic devices may be used in clinical practice for implant site preparation.

CONTROLLED RELEASE DOXYCYCLINE GEL IN NON SURGICAL THERAPY OF PERIIMPLANTITIS, 1 YEAR RESULT OF A PROSPECTIVE COHORT STUDY

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Results from non-surgical treatment of perimplatitis lesions, according to data present in literature, are highly variable; complete biofilm removal is difficult to achieve due prosthetic and implant surface difficulties. The addition of a controlled release antibiotic on affected implant surfaces could improve non-surgical therapy outcomes and might reduce the need for subsequent corrective surgery.

The aim of this 1 year prospective cohort study was to evaluate the potentiality of a chemical-mechanical approach in managing peri-implant inflammation parameters on patients referring to authors' private practice with at least 1 implant site showing BoP + and bone loss > 2mm on x-rays. Participants should be cooperative adults, systemically healthy and without known hypersensitivity to tetracycline.

Full mouth supra/sub gingival debridement of soft and hard deposits by mean of hand instruments, ultrasonic and airflow device was performed. Individual oral hygiene instructions were given and at experimental implant sites, a doxycycline gel was applied. At baseline, three months and 1 year PPD, BoP, REC (distance from the most cervical point of the prosthetic appliance) were recorded. 26 patients providing 49 implants (12 male, 14 female, average age 65, 6 smokers) were enrolled.

Baseline PPD was 6,7 mm, BoP 100% and REC=0,6 mm. At 1 year PPD was 4,6 mm, REC 1,6, 71,4% of the implants showed no bleeding, and 68,6% achieved a PPD<5mm; this might result in a decreased need for surgery. 11 implants on 4 patients dropped out due to a lack of improvements and persistence of suppuration during therapy, they all underwent either surgery or extraction.

This approach obtained a PPD reduction, despite a REC increase, and the evident reduction in the number of sites bleeding or probing 5 mm or more is encouraging and may lead to fewer surgical needs. Further investigations are needed to fully understand of the role of the antibiotic, and the potentiality of the protocol.

EFFECTS OF TOOTHPASTE CONTAINING OXYGEN-RELEASING COMPOUND ON IMPLANT SURFACES EXPOSED TO THE ORAL CAVITY: A MORPHOLOGICAL CONTROLLED CLINICAL TRIAL

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The development of toothpaste containing molecules that reduce the biofilm formation on dental implants without degrading the titanium-based surface may help the patient to prevent the peri-implant disease progression.

Aim of the present study was to assess in vivo if a toothpaste containing an antibacterial compound with sodium perborate (AX) is able to reduce the amount of biofilm formed on implants with the rough surface exposed to the oral cavity, without affecting the morphology of the tested surface.

In this double-blind, cross-over, controlled clinical trial, 2 splints with an implant fixed on the right lingual side of the mandibular arch were prepared for 14 patients. In the first phase of the study, each volunteer received one splint, and randomly the test (with AX) or the placebo toothpaste for daily hygiene according to randomization tables and was asked to wear the splint for five days without interruptions. After this phase, the volunteers repeated the experiments with the same modality but switching the treatment. After removal, splints were processed for observation at scanning electron microscope. Morphological and semi-quantitative analyses of the plaque covering the implant surface were performed together with micro-morphological alterations of implant surface that may occur after treatment. Mann-Whitney test for paired data was applied for between group analyses.

No differences were found in the morphology and organization of the biofilm between treatment groups. The area free from biofilm resulted significantly higher for samples of the test group (AX) than for samples of the control group ($p<0.001$). Morphological signs of micro-degradation or changes of the surface double-blind on any implant after both treatments.

The toothpaste containing sodium perborate seems to reduce the amount of biofilm adherent to the rough implant surface and formed after 5 days of exposition to the oral cavity and seems not to corrode or degrade the titanium.

NON-SURGICAL TREATMENT OF PERI-IMPLANT MUCOSITIS WITH THE ADJUNCTIVE USE OF DIODE LASER: A RANDOMIZED CLINICAL TRIAL

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Laser therapy for the treatment of peri-implant infections has been proposed in recent years due to several advantageous characteristics such as its anti-bacterial action, hemostatic effects or easy handling.
Whilst mechanical therapy alone has been the main treatment modality around implants, current data also indicate that resolution of inflammation was not achieved in all patients. Thus, this study hypothesized that if mechanical therapy is enhanced by antibacterial effects of laser it should result in a more successful outcome.

The aim of this study was to assess the clinical outcomes and to make a comparative evaluation of professionally administered plaque removal with or without the adjunct of diode laser (DL) for the treatment of peri-implant mucositis (PIM).

A total of 220 patients diagnosed with PIM were selected and contributed to 1 implant each. Patients were randomly assigned to either test (n=110) or control group (n=110). In the test group, patients were treated with a conventional non-surgical therapy in combination with 980nm DL application while patients in the control group received only conventional non-surgical therapy. Clinical parameters were measured at 6 sites per implant at baseline, 30 days and at 3 months after professional treatment. The primary endpoint was defined as disease resolution i.e. absence of bleeding upon probing at the diseased sites at 3 months with probing depth (PD) ≤ 6mm.

Both therapeutic modalities gained similar clinical improvements with comparable reduction in the number of BoP-positive sites, plaque scores and PD values at 3 months (all P-value > 0.05). Complete disease resolution was achieved in 34.5% of the treated implants in the test group compared to 30.9% of control implants at 3 months.

Based on the present results, adjunctive therapy of PIM with DL has demonstrated no statistically significant additional improvement in clinical parameters as compared to mechanical therapy alone.

PREVALENCE OF PERIODONTITIS AND EFFECT OF GLYCAEMIC CONTROL ON CAL IN TYPE 1 DIABETES PATIENTS. A SYSTEMATIC REVIEW

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A large body of evidence suggested a strong association between Type 2 Diabetes and the risk of Periodontitis. The possible link between Type 1 Diabetes and Periodontitis is still controversial.

The aim of this Systematic Review (SR) was to assess the prevalence of Periodontitis (PD) and the effect of glycaemic control on Clinical Attachment Loss (CAL) in patients with Type 1 Diabetes Mellitus (T1DM).

The revision protocol was designed and conducted according PRISMA statement guidelines.

Literature search retrieved 16 studies for a total of 5945 T1DM patients. Prevalence of PD ranged from 4% to 57.9%. Eight studies reported data on mean CAL in T1DM cases (from 0.6 mm ± 0.8 to 2.62 mm ± 0.09) and systemically healthy controls (from 0.5 mm ± 0.8 to 2.49 mm ± 0.06) matched for sex and age. Three studies showed CAL at an early age, less than 15 years old. An association between higher severity of PD and higher Glycated Hemoglobin levels (HbA1c) was shown by the present SR.

There is an association between periodontal disease and T1DM, even if a final estimation of PD prevalence was not possible due to data heterogeneity. T1DM patients with poorer glycaemic control showed more severe forms of PD at early age compared with controls.

EFFICACY OF DENTAL IMPLANTS AFTER BONE REGENERATION/RECONSTRUCTION PROCEDURES IN SEVERE BONE DEFECTS. A SYSTEMATIC REVIEW OF RCTS.

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Advanced bone reconstruction has been suggested at severe horizontal and/or vertical defects before implant application. Guided Bone Regeneration (GBR) and different Bone Grafts (BG) have been described as effective techniques. Efficacy of dental implants after major bone regeneration are poorly investigated.

The aim of this Systematic Review was to evaluate the efficacy of dental implants in regenerated alveolar bone and related complications with at least 1 year of function.

A protocol was designed according PRISMA.

Twenty-nine RCTs were included for 478 patients and 1141 implants. The mean follow-up was 3,39 years. All studies were at high risk of bias.
Defects were treated with resorbable or non-resorbable membranes in association with particulate BG or block BG.
In 22 studies vertical alveolar defects were treated (207 patients, 487 implants, SR 94%, mean follow-up 3.54 years). Sub-group analysis showed an implant SR of 95.7% after autologous BG, 94.9% for xenogenic BG and 100% for GBR (autogenous plus not-resorbable membranes). Corresponding marginal bone levels were 0.81 mm±0.91 for autologous BG, 1.64 mm±1.77 after xenogeneic BG and 1.40 mm±1.73 after GBR. Total number complications reported at final follow-up were very frequent for xenogenic BG (63 cases of 88).
In 7 studies horizontal alveolar defects were treated (271 patients, 654 implants, SR 96,3%, mean follow-up 3.28 years). Sub-group analysis showed SR of 98.8% after autologous BG, 94.76% after allogenic BG and 97.6%% after GBR. Marginal bone levels reported after GBR were 0.32 mm±0.82. Minor complications were often described in this subgroup

Clinical efficacy of dental implants applied in treated severe bone defects seems to be satisfactory at short-term observations with minimal reported bone loss after loading. Further studies at low risk of bias are mandatory. Bone reconstruction procedures are often associated with complications and this finding should be carefully evaluated before therapy.