

EVALUATION OF THE OVERALL METABOLIC EFFECT OF NON-SURGICAL PERIODONTAL THERAPY IN CHRONIC PERIODONTITIS PATIENTS

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Introduction:

Metabolomics is a newly emerging field of research dealing with the high-throughput identification and quantification of small-molecule metabolites in biological fluids. The metabolomic analysis of saliva has demonstrated ability in discriminating patients with chronic periodontitis from healthy subjects by identifying specific signature of the disease. There are no data concerning the effect of scaling and root planing on individual metabolic phenotype.

Aims:

Therefore, in this study the influence of scaling and root planing was determined on salivary metabolic spectra from generalized chronic periodontitis (GCP) patients, in relation to clinical parameters.

Methods:

A total of 25 GCP subjects had periodontal clinical parameters measured and unstimulated saliva samples collected at baseline and 3 months after conventional staged non-surgical periodontal therapy. Metabolic profiling of saliva was performed with nuclear magnetic resonance (NMR), followed by a multilevel partial least square (PLS) approach in order to highlight the within-subject changes introduced by the therapy.

Results:

The non-surgical periodontal therapy led to a statistically significant improvement in all the clinical parameters ($P < 0.001$). The accuracy of the statistical model in discriminating the two time points of each patient was 92%. Despite the almost perfect separation in the multivariate analysis, no metabolite appeared statistically significant in the univariate analysis, even if some metabolites were clearly higher or lower in the pre versus post-therapy.

Conclusions:

Based on these preliminary data, it can be hypothesized that the good classification accuracy for the multivariate analysis comes from a combination of variations of metabolites that is comprehensively discriminant, but none of them is per se statistically different. The complex multifactorial etiology of periodontitis will require clinical trials with larger sample size in order to add consistency and external validity to these results.

RESIDENT MEMORY T CELLS IN PERIODONTAL TISSUES: A POSSIBLE EXPLANATION FOR PERIODONTAL DISEASE SUSCEPTIBILITY AND RECURRENCE

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Introduction:

Recent studies demonstrated that the majority of T-cells remain as memory resident cells (TRM) within epithelial barrier tissues affected by chronic infection. TRM cells provide a first response against infections reencountered at body surfaces, where they accelerate pathogen clearance. As gingival tissues share some characteristics with other barrier tissues constantly exposed to microflora, TRM cells may promote accelerated and higher inflammatory response accounting for larger and faster tissue damage in periodontal patients.

Aims:

Therefore, the aim of this study was to investigate the presence and distribution of TRM cells in periodontal tissues in relation to the periodontal damage and bacterial exposure.

Methods:

Immunohistochemical detection of CD103 was performed in 34 patients: 17 chronic periodontitis patients (test) requiring osseous resective surgery (ORS) and 17 healthy patients (control) with mucogingival problems requiring free gingival graft or laterally sliding flap procedure. In the test group 17 tissue samples were harvested from the secondary flap removed during ORS and in the control group 17 tissue samples were harvested each from the primary flap and from the palatal graft during mucogingival surgery. Intraepithelial and stromal CD103-positive cells per high power field were counted in areas with highest expression.

Results:

CD103 expression was significantly enhanced in the epithelial and connective tissue from patients with periodontitis compared to healthy controls ($p < 0.05$). In the control group epithelial and stromal CD103 expression was absent in 2 and 4 palatal mucosa tissue specimens, respectively, and in the connective tissue from 6 mucogingival primary flaps.

Conclusions:

The role of TRM cells in periodontal sites is still unclear. It can be hypothesized that the excision of gingival tissue harboring these cells could modulate the host immune response to plaque accumulation, leading to a slower and milder reactivation of periodontal disease.

IMPACT OF SMOKING STATUS ON THE OUTCOMES OF REGENERATIVE PERIODONTAL TREATMENT WITH THE SINGLE FLAP APPROACH

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Introduction:

In 2007, a simplified surgical technique (Single Flap Approach, SFA) was introduced for the regenerative treatment of periodontal intraosseous defects.

The combination of enamel matrix derivative (EMD) with deprotenized bovine bone mineral (DBBM) in periodontal regenerative surgery, in general, and SFA, in particular, was shown to ensure a substantial attachment gain while limiting the post-surgery recession. Smoking has been recognized as a factor affecting the outcomes of periodontal treatment.

Aims:

The present study was performed to evaluate the impact of smoking status on 6-month clinical outcomes of the buccal SFA with EMD and DBBM.

Methods:

The present study is a retrospective analysis of a patient cohort. De-identified data were retrospectively derived from periodontal patients seeking care at the Research Centre for the Study of Periodontal and Peri-Implant Diseases, University of Ferrara, Italy, and one private dental office in Ferrara, Italy.

Twenty-two defects were selected in smoker (n= 11) and non-smoker (n= 11) patients. Each defect had been treated with buccal SFA. A sandwich technique had been applied to stratify EMD and DBBM.

Immediately before surgery and 6 months after surgery, the following measurements had been collected: probing depth (PD); clinical attachment level (CAL); interdental REC (iREC). At suture removal, performed 2 weeks after surgery, the Early Healing Index (EHI) had been evaluated.

Results:

Twenty-two patients (14 males; mean age: 50.2 ± 11.4 years; 11 smokers, 11 non-smokers) were included for the analysis. The procedure resulted in significant change in CAL from 10.0 ± 1.9 mm to 5.5 ± 1.9 mm in smokers ($p= 0.003$) and from 10.1 ± 2.5 mm to 6.5 ± 2.0 mm in non-smokers ($p= 0.003$), the 6-month CAL gain being not significantly different between groups. Also, PD was significantly reduced from 8.4 ± 1.6 mm to 3.1 ± 0.5 mm in smokers ($p= 0.003$) and from 7.7 ± 1.2 mm to 3.6 ± 0.9 mm in non-smokers ($p= 0.003$), with a significant difference between groups ($p=0.028$). At 6 month, PD was similar ($p= 0.151$) in smokers and non-smokers.

At 2 weeks, the number of sites showing optimal wound healing (i.e., EHI= 1) was 5 (45.5%) in non-smokers while was 0 for smokers.

Conclusions:

Treatment of intraosseous defects with buccal SFA in association with EMD and DBBM may similarly lead to substantial CAL gain and limited residual PD in smokers and non-smokers.

ENAMEL MATRIX DERIVATIVE ALONE OR IN COMBINATION WITH BONE SUBSTITUTES FOR THE TREATMENT OF PARTIALLY CONTAINED INTRABONY DEFECTS: A COMPARATIVE STUDY

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Introduction:

Periodontal intrabony defects are the result of a bone resorption process in axial direction that is secondary to the presence of periodontal disease. Their classification includes one-, two- and three-walled defects, though they often have a complex anatomical configuration.

Regenerative treatment of intrabony defects has proved to be effective even though the effect of some biomaterials in partially contained defects needs to be further explored.

Aims:

The present comparative study evaluated the regenerative treatment of partially contained intrabony defects with enamel matrix derivative (EMD) with or without adjunctive bone substitute material (deproteinized bovine bone mineral (DBBM)).

Methods:

A total of 29 defects were treated: 9 contained defects were treated with EMD and served as positive control, 10 partially contained defects were treated with EMD alone and 10 with EMD+DBBM. The papilla preservation surgical technique was used in all cases. Clinical (PD, REC, CAL) and radiographic outcomes (radiographic depth and width of the bone defect) were evaluated and analyzed at baseline and six months after surgery.

Results:

Six months after surgeries, in the group where partially contained defects were treated with EMD alone (n = 10) PD was 3.3 ± 1.8 mm, REC was 2.6 ± 2.3 mm, and CAL was 5.9 ± 2.6 mm. In the group where EMD + DBBM (n=10) was used PD was 3.2 ± 1.5 mm, REC was 2.9 ± 2.1 mm, and CAL was 6.0 ± 2.3 mm. These parameters were significantly different from baseline ($P < 0.05$). Radiographic parameters confirmed a visible filling of the defects. No differences between groups were found, even when compared to positive control group.

Conclusions:

The results didn't show evidence in favor of regenerative treatment of partially contained defects through EMD + DBBM. Moreover, the use of an appropriate surgical technique of papilla preservation could reduce the importance of the defect morphology in determining the clinical outcomes, even using EMD alone in partially contained defects.

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DENTAL CARIES AND PERIODONTITIS: IS THERE AN INDEPENDENT ASSOCIATION?

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Introduction:

EFP and ORCA joined in the 1st European Workshop on Periodontal Diseases and Dental Caries with the aim of assessing the interdependency between the two conditions. Only 2 studies analyzing their co-occurrence were sorted and no multivariate risk assessment model were found.

Aims :

To corroborate whether there was an independent association between periodontitis and caries prevalence in a representative sample of the South Korea population (KNHANES 2012 data).

Methods:

The number of decayed, missing and filled teeth and the number of decayed teeth (DMFT and DT, respectively) were used. Periodontitis was assessed using the Community Periodontal Index (CPI), which was dichotomized using CPI \geq 3 in at least one sextant as cutoff.

Linear regression analyses were carried out to examine the "crude" association between periodontitis prevalence and the DMFT or DT. Then they were adjusted for age, gender, smoking status, carbohydrates dietary intake, oral hygiene, income, educational level, serum levels of Vitamin D, BMI, alcohol consumption, stress and diabetes.

Results:

A total of 6120 subjects were examined, representative of 41.3 million of adults. The participants affected by periodontitis were 1435. The mean number of decayed teeth was 0.75 (RSD: 0.051), while the mean DMFT score was 5.90 (RSD: 0.017).

In the crude models, a higher number of decayed teeth (MD: 0.37 - 95% CI: 0.21-0.55; p<0.001) and of DMFT score (MD: 0.80 - 95% CI: 0.36-1.25; p<0.001) was found in subjects with periodontitis.

After adjustment, subjects with periodontitis had 0.42 more decayed teeth than the no periodontitis ones (95% CI: 0.22-0.62; p<0.001), but not a higher DMFT score (MD: 0.27 - 95% CI: 0.29-0.82; p=0.348).

Conclusions:

Within this sample, participants with periodontitis had a slight but highly significant higher number of caries and DMFT score than no periodontitis participants. The association was independent from the effect of confounders only for DT. The co-occurrence of these two diseases should be taken into account.

TOPICAL DOXYCYCLINE ADMINISTRATION ADJUNCTIVE TO MECHANICAL DEBRIDEMENT IN PATIENTS WITH PERSISTENT OR RECURRENT PERIODONTITIS: 3 MONTHS RESULTS OF A PERSPECTIVE COHORT STUDY

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Introduction:

Residual periodontal pockets after non-surgical therapy are conventionally candidate for surgical treatment. Since these 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”.

Aims:

To evaluate the effect of a session of SCRCP + local antibiotic in the management of residual or recurrent periodontal pockets.

Methods:

3 months perspective, cohort study on patients referring to authors' private practice who during supportive periodontal therapy with at least 1 site showing PPD \geq 5 mm and BoP +

Participants should be cooperative adults, systemically healthy without known hypersensitivity to tetracyclines; FMPS and FMBS < 25%.

Parameters: PPD, BoP, REC.

Procedure: thoroughly SCRCP by mean of hand instruments, ultrasonic and airflow devices followed by application of a doxycycline gel.

Results:

21 patients (9 male, 12 female, average age 62, 18 non smokers) were enrolled providing 45 sites. At baseline mean PPD was 7,0 mm, 54 % ranging between 4 and 6 mm and 46 % >6mm. According to inclusion criteria all the sites were BoP +.

At 3 months, PPD = 3,9mm (-3,1 mm); 57% of the sites showed a PPD < 4mm, 41% ranging between 4 and 6 and only 2 % still > 6. Furthermore no sites showed worsening, 3 sites (7%) did not improve; 43 (93%) improved at least 1 mm. Recession increased 0,8 mm as an average.

For what concern BoP, 54% of the sites resulted to be negative at the end of the study.

Conclusions:

Thus, from the data of the present investigation it appears that tested procedure was effective in promoting healing of residual and recurrent pockets in well controlled maintenance patients.

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.

A 10-YEAR PROSPECTIVE COHORT STUDY ON SINGLE CROWNS SUPPORTED BY 6 MM LONG IMPLANTS

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Introduction:

If one or more dental elements are missing, the use of dental implants is considered a consolidated method to guarantee a correct oral rehabilitation. The absence of ideal anatomic conditions might result in insufficient bone volume. In these circumstances, bone augmentation surgical techniques or use of short implants are often required.

Aims:

To evaluate prospectively the clinical and radiographic outcomes after ten years of early loading of 6 mm implants with a moderately rough surface supporting single crowns in the posterior regions.

Methods:

40 short (6 mm long) implants were installed in 35 consecutive patients. Early loading, after 6 weeks of healing, were performed with cemented single porcelain fuse to metal crowns. Implant survival rate, marginal bone loss, clinical crown/implant ratio and periodontal parameters (FMPS, full mouth plaque score; FMBS, full mouth bleeding score; PD, peri-implant probing depth) were analysed at various time intervals until 10 years after loading.

Results:

Two out of 40 implants were lost before loading, one implant was lost due to perimplantitis at 7 years. One patient with two implants was considered as drop out, and survival rate at long term follow up was 92.1% (n=38). A mean marginal bone loss after 10 years of function was 0.8 ± 0.7 mm. Between 5 and 10 years the bone loss was 0.2 ± 0.4 mm. The mean bone level after 10 years was located at 2.8 mm from the shoulder (at the level of the interface between the smooth implant neck and the coronal margin of rough surface). The clinical crown/implant ratio increased with time from 1.6 at the delivery of the prosthesis to 2.0 after 10 years of loading with no increase between 5 and 10 years. No technical complications were registered during the 10-year follow-up period. Patients registered mean FMPS 8% and FMBS 16% and peri-implant probing depth ≤ 4 mm.

Conclusions:

6 mm implants with a moderately rough surface supporting single crowns in the distal region maintained full function for at least 10 year with low marginal bone loss.

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IMPLANTOPLASTY IN THE SURGICAL TREATMENT OF PERI- IMPLANTITIS: 1-YEAR FOLLOW-UP CASE SERIES

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Introduction:

Peri-implantitis is a biofilm-related disease characterized by soft tissues inflammation and bone resorption. Different surgical approaches associated to various decontamination methods were proposed. Implantoplasty usually consists of removing the implant threads and smoothing rough implant surfaces with rotary instruments and secondly making the affected implant surface less plaque-retentive.

Aims:

The aim of this study was to observe the clinical effects of implantoplasty applied in different surgical approaches as resective and regenerative surgery.

Methods:

Eleven patients with peri-implantitis were enrolled during a period of 36 months; the overall number of implants involved was 30. The surgical treatment was performed 8 weeks after non-surgical therapy. Implants with intrabony defects ≤ 4 mm were treated with resective surgical approach while with intrabony defects > 4 mm with a regenerative surgical approach. Implantoplasty was performed on the exposed implant surface of all implants. Probing depth, radiographic bone level and peri-implant soft tissues inflammation parameters were recorded in all patients six months, one year and then every 6 months after surgery.

Results:

Four implants in four different patients failed, two of them were treated with regenerative approach while the other two with resective approach. One year after surgery the remaining implants showed no signs of peri-implant inflammation, the mean probing depth was $3,22 \pm 1,07$ mm. 91% of the sites recorded probing depths (PD) ≤ 4 mm and the mean probing depth reduction was $2,66 \pm 2,48$ mm ($3,50 \pm 2,23$ mm for the regenerative approach and $2,20 \pm 2,52$ mm for the resective one). Furthermore, no negative side effects linked to the dispersion of metal filing were recorded.

Conclusions:

The association of implantoplasty and either a resective or a regenerative surgical approach in the treatment of peri-implantitis resulted in an improvement of all clinical parameters and seems to be a safe and effective treatment option.

COMPARISON OF DIFFERENT CHEMICAL AND MECHANICAL DECONTAMINATION MODALITIES ON TITANIUM DENTAL IMPLANTS: A IN VITRO MODEL OF A PERI-IMPLANTITIS DEFECT.

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Introduction:

Resolution of peri-implantitis lesions can occur following implant surface decontamination. However complete plaque removal with mechanical devices is jeopardized by limited access to the implant surface.

Aims:

The aim of this in vitro study was to evaluate the efficacy of chemical and mechanical methods used for decontamination of titanium dental implants previously infected with polymicrobial biofilms in a model simulating a peri-implant defect.

Methods:

Polymicrobial biofilms were grown on 25 titanium implants with SLA surface. The experimental groups were divided into 5 different disinfection modalities as follows: (i) no treatment (C), (ii) air polishing device without any powder (AW), (iii) air polishing device with erythritol powder (AE), (iv) use of sulfonic/sulfuric acid solution in gel (H), and (v) the combination of H and AE. Group C and AW were used as negative and positive control. Before treatment implants were kept into a model simulating a peri-implant bony defect (10mm wide; 5mm deep) by mean of a metal structure. The decontamination effect of each modality was evaluated by microbial culture analysis in aerobic and anaerobic conditions. Kruskal-Wallis and pairwise comparisons were used to compare differences between colony-forming units per millilitre [$\log_{10}(\text{CFU/ml})$] values and treatments modalities ($P < 0.05$).

Results:

This study demonstrated that the use of H and the combination of H and AE were superior to C in reducing bacterial counts [$3.75 \log_{10}(\text{CFU/ml})$ and $3.91 \log_{10}(\text{CFU/ml})$ respectively vs. $7.48 \log_{10}(\text{CFU/ml})$]. H performed better than AW [$7.48 \log_{10}(\text{CFU/ml})$]. A significant decontaminant effect on the implant surface despite the limited accessibility due to the model simulating the peri-implant defect was achieved using the sulfonic/sulfuric acid solution in gel. No differences were shown between the groups receiving other treatments.

Conclusions:

The use of chemical decontamination reduces more the bacterial load on previously infected implants compared to other treatment modalities.

CONTROLLED RELEASE DOXYCYCLINE GEL APPLICATION IN PERIIMPLANTITIS NON SURGICAL THERAPY: 3 MONTHS RESULTS OF A PERSPECTIVE COHORT STUDY

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Introduction:

Treatment of peri-implantitis, infectious disease characterized by mucosal inflammation and radiographic bone loss, is based on biofilm removal to stop its progression. Mechanical cleaning of the Implant surface is difficult to achieve in a blind approach and corrective surgery is often necessary. Addition of a controlled release antibiotic on implant surface could improve non-surgical therapy.

Aims:

To evaluate the potentiality of a chemical-mechanical approach in managing peri-implant inflammation parameters.

Methods:

3 months perspective, cohort study 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 tetracyclines.

Parameters, assessed at the most compromised implant site: PPD, BoP, REC (distance from the most cervical point of the prosthetic appliance).

Procedure: full mouth supra/sub gingival removal of soft and hard deposits by mean of hand instruments, ultrasonic and airflow devices. At experimental implant sites, a doxycycline gel was applied. Individual oral hygiene instructions were given.

Results:

26 patients (12 male, 14 female, average age 65, 6 smokers) were enrolled providing 49 implants. At baseline the mean FMPS and FMBS were 45% and 41% respectively with 82% of the patients showing FMPS > 25% and 70% FMBS > 25%. Mean PPD was 6,7 mm, BoP 100% and REC=0,6 mm.

At 3 months, FMPS and FMBS were 19,6% and 22,1%; PPD = 4,8mm (-1,9 mm), REC =1,4 (+0,8 mm); 61% of the implants showed no bleeding that might result in a decreased need for surgery.

Conclusions:

This approach resulted in reduction of PPD and inflammation but increase of REC. 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 is encouraging and needs further investigations.

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**TAILOR-MADE MAINTENANCE APPROACH OF IMPLANT
SUPPORTED FULL-ARCH: A RETROSPECTIVE STUDY**

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Introduction

Peri-implant diseases have a variable prevalence. There are risk factors related to the patient (including history of periodontitis and presence of pathogenic plaque) and risk factors related to the rehabilitation treatment. The objective of the present study was to analyze the implant survival rates of patients treated with full-arch immediate loaded rehabilitations which have been subjected to a personalized, shared and integrated tailor-made approach of home and professional hygiene.

Materials and methods

A total of 70 patients treated with immediate loaded full-arch rehabilitations were included in the study with a seven-phase periodontal, surgical and prosthetic treatment plan. Demographic parameters, treatment variables, and clinical and radiographic evaluations were collected.

Results

93 arches of 70 subjects were analyzed. All patients were periodontal and 23 were also smokers. None of the patients reported severe prosthetic complications. The success rate was 98.13% of the implants and 97.14% of the patients.

Conclusions

A personalized professional and home oral hygiene maintenance approach, shared and integrated into the patient's treatment plan, is effective in determining the success of immediate-load full-arch rehabilitation.

ER:YAG LASER GINGIVAL MELANIN DEPIGMENTATION - 2 YEARS FOLLOW UP CASE REPORT

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Introduction:

Gingival hyperpigmentation can be physiological in cases with dark patients but causes esthetic problems to those with “gummy smile”.

Clinical case: A 38- years old women in good general health from Arab origin came for esthetic reason because of melanin hyperpigmentation of the attached gingiva in the frontal area of the upper and lower arch. Dummet’s oral pigmentation index (DOPI) revealed scores 2,25- heavy pigmentation for the upper and 3- heavy pigmentation for the lower arch.

Aims:

The aim of the present case report was to examine the effectiveness of the Er:YAG laser in gingival melanin depigmentation.

Methods:

The pigmentation was managed with Er:YAG laser (2940 nm) with the following energy settings: 200 mJ, 15 Hz, 4 water spray level under local anesthesia. Treatment went uneventful without excessive bleeding. The healing process was without bleeding, pain, swelling or any discomfort to the patient.

Results:

The follow-up at 6 months showed no recurrence - DOPI for both arches 0. The follow-up at 2 years showed again gingival discoloration significantly lower than the initial pretreatment one - DOPI for upper arch 1 and for the lower- 1,75. Second Er: YAG laser depigmentation was performed.

Conclusions:

Er:YAG laser is safe and effective treatment modality for gingival depigmentation without side effects. In this particular clinical case the improvement of the color remains for 2 years.

MINIMALLY INVASIVE THERAPY FOR THE TREATMENT OF INFRABONY DEFECT. A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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Introduction:

Emerging evidence suggests that minimally invasive therapy (MIT) including surgical (MIS) and not surgical treatments (MINS) may be successfully used in the treatment of residual pockets associated with deep infrabony defects.

Aims:

The aim of the present systematic review (SR) and network meta-analysis (NM) is to explore the comparative effectiveness of MIT.

Methods:

A literature search on PubMed, Cochrane libraries, EMBASE, and hand-searched journals until October 2017 was conducted to identify Randomized Clinical Trials using MIS techniques. Data were retrieved and a Network Meta-analysis (NM) was performed to merge evidence from direct and indirect comparisons by different trials. Outcome variables were Clinical Attachment Gain (CAL), Probing Depth (PD) and Gingival Recession (Rec).

Results:

A total of 11 RCTs were enclosed in SR and 9 in the NM. The Ranking of treatments by effectiveness in terms of final CAL demonstrated that MIS+growth factors (best probability 24.6%), MINS (best probability 23.5%), double flap approach (best probability 14.6%) and MIS+enamel matrix proteins (best probability 12.9%) showed the highest efficacy. Our confidence on the treatment ranking was moderate due to limitation in terms of number of studies.

Conclusions:

Both minimally invasive surgical (MIS) and not surgical therapy (MINS) showed high efficacy in the treatment of residual pockets associated with infrabony defects. Data suggest caution in applying combinations of bone replacement biomaterials for minimally invasive approaches.

SURGICAL PROCEDURES FOR SOFT TISSUE AUGMENTATION AT IMPLANT SITE. A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

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Background and Purpose:

The aim of this Systematic Review (SR) is to assess the current evidence on soft tissue augmentation procedures at implant site.

Methods:

Manual and electronic database searches were performed up to October, 10 2017 to identify randomized clinical trials (RCTs) comparing different techniques for augmentation of periimplant soft tissue. Two investigators extracted data independently. The Cochrane tool was used for evaluation of data quality.

Results:

A total of 13 RCTs accounting for 439 patients and 462 implants were enclosed in this SR. Three clusters of studies were identified: a. soft tissue augmentation before prosthetic treatment (five RCTs); b. soft tissue augmentation after prosthetic treatment (five RCTs); c. soft tissue augmentation at post-extraction implants (three RCTs). Only five studies were judged as at low risk of bias; four RCTs were included in two meta-analyses. Connective Tissue Graft (CTG) was more effective than Xenogeneic Collagen Matrix (XCM) to improve soft tissue thickness before prosthetic treatment (MD: -0.30mm; 95% CI -0.43; -0.17; p<0.00001). Furthermore, buccal CTG was associated with higher bone level stability than no soft tissue augmentation after post-extractive implants (MD: -0.10mm; 95% CI -0.14; -0.06; p<0.0001).

Interpretation:

The evidence is limited, however initial data showed the benefit in adding CTG to improve peri-implant soft tissue thickness and promote bone levels stability after post-extractive implants.

ANTIBIOTIC PROPHYLAXIS AT DENTAL IMPLANT PLACEMENT: WHICH IS THE BEST PROTOCOL? A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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Aim:

This systematic review of randomized controlled trials (RCTs) aims to answer to the following question: "In patients undergoing dental implant placement, which is the best antibiotic prophylaxis protocol to prevent implant failures?"

Materials and Methods:

The MEDLINE, SCOPUS, CENTRAL and Web of Knowledge electronic databases were searched in duplicate for RCTs up to July 2017. Additional relevant literature was identified 1) hand-searching on both relevant journals and on reference lists, and 2) searching in databases for grey literature. A Network Meta-analysis (NMA) was conducted and the probability that each protocol is the Best was estimated.

Results:

Nine RCTs were included, with a total of 1,693 participants. The protocol with the highest probability (32.5%) of being the Best to prevent IF was the single dose of 3g of amoxicillin administered 1-h pre-operatively. Even if the single pre-operative dose of 2g of amoxicillin is the most used, it achieved only a probability of 0.2% to be the Best.

Conclusions:

Basing on the limited evidence available from RCTs, a single-dose of 3 g of amoxicillin 1-h pre-operatively should be preferred when an antibiotic prophylaxis is required at dental implant placement.

ORTHODONTIC TREATMENT AND RISK OF GINGIVAL RECESSION. A SYSTEMATIC REVIEW ON CLINICAL AND ANIMAL STUDIES

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Introduction:

Gingival recession refers to the exposure of the tooth's surface which might lead to poor esthetics, tooth hypersensitivity and periodontal inflammation. Several Authors report that orthodontic movement might be related to gingival recession when the roots are pushed close to or through the alveolar cortical plates

Aims:

The aim of the present systematic review (SR) is to evaluate the body of evidence describing possible risks of gingival recession after orthodontic treatments, with reference to the class of malocclusion, the type of orthodontic appliance as well as to the general movement performed

Methods:

A literature research on PubMed, Cochrane libraries, EMBASE, and hand-searched journals until November 2017 was performed. Out of a total of 6583 articles, 22 clinical articles and 7 animal studies met the research criteria and were enclosed in the SR. STROBE (Strengthening the reporting of observational studies in epidemiology) and ARRIVE (Animal Research: Reporting of In Vivo Experiments) guidelines were used for quality assessment. The SR article was realized according to PRISMA Checklist (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

Results:

10 clinical studies reported an increased risk of gingival recession after buccal movement while 12 studies did not. Similarly, a total of 6 animal studies showed an increased recession risk and buccal tooth displacement. A great heterogeneity among studies including sample size, treatment modalities and type of measurements impaired the possibility to perform a meta-analysis. The overall body of evidence seems to suggest that age at the beginning of the orthodontic treatment, thin periodontal biotype, buccal movement at lower incisor and poor plaque control may be considered possible predictors of the risk of recession during/following orthodontic treatments

Conclusions:

A limited and controversial evidence suggests that buccal movement may be associated with gingival recession development.

LONG-TERM EFFECT OF FIXED PROSTHETIC TREATMENT IN PERIODONTAL PATIENTS. A SYSTEMATIC REVIEW

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Introduction:

Tooth loss is a frequent complication of periodontal disease progression. Prosthetic treatment by means of fixed partial dentures (FPD) remains a viable treatment option in patients with history of treated periodontitis.

Aims:

The aim of the present systematic review (SR) was to evaluate the long-term effect of prosthetic treatment in periodontal patients.

Methods:

Only long-term studies reporting prosthetic treatment in periodontal patients and at least 5 years of supportive periodontal care (SPC) duration were enclosed in the present SR. A literature search on PubMed, Cochrane libraries, EMBASE, and hand-searched journals until January 2017 was performed. Quality assessment using STROBE was also carried out.

Results:

A total of 11 articles were enclosed in the SR, reporting on 1032 patients with history of treated periodontitis and 1176 fixed bridges. Studies showed a high heterogeneity and low quality level. Very often, data on periodontal treatment and achieved outcomes were not reported. Considering 6 studies, data covering a total of 2919 prosthetic abutments was evaluated. After at least 5 years, 94.6% of prosthetic abutment and 91.9% of fixed bridges were maintained. After 10 years the mean survival rate of fixed bridge was 91,2% (5 studies). Among 159 extracted abutment teeth (5.4%), 30.4% was lost due to root fracture, 20.7% for periodontal reasons, 16.4% for decay, 13.8% for endodontic reasons and 10.7% for mechanical/technical failures.

Conclusions:

Prosthetic treatment using natural teeth in treated periodontal patients is highly predictable after at least 10 years of SPC with minimal complications and low periodontal disease progression.