

ULTRASONIC SCALING AND AIR-ABRASIVE POWDERS DECONTAMINATION ON 9 IMPLANT-ABUTMENT SURFACES

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Aim: the purpose of this study was to examine an investigation through SEM of the efficacy of bicarbonate air-abrasive powders associated with ultrasonic instruments on nine different implant surfaces contaminated with biofilm. The second outcome was to evaluate the ability of fibroblasts to integrate around implant-abutment surfaces.

Methods: nine types of surfaces (zirconia surfaces, titanium sandblasted and acid etched surfaces, titanium machined surfaces, titanium anodized surfaces, titanium grade 5 surfaces) were strewed with withdrawal's patient oral biofilm. Later was examined surfaces' wettability by means of SEM. All the surfaces were decontaminated with bicarbonate air-abrasive powders and ultrasonic instruments. Fibroblasts were cultured on the native and decontaminated surfaces. The results obtained were analyzed with MathLab software.

Results: after the decontamination processing, all surfaces were damaged from the topographical point of view. Residual particles of sodium bicarbonate were noted on all surfaces. While the surfaces of grade 5 titanium are stronger, the other surfaces tend to lose their peaks. Anodized surfaces appear to have a higher number of fibroblasts after decontamination.

Conclusions: the decontamination of the surfaces led to the formation of a surface nanotexture. The presence of salts deriving from the bicarbonate powders used have created surface nanostructures that seem to improve the quantity of fibroblasts present on the surface compared to the control group. The more bioactive surfaces (anodized and grade 5 titanium) have a significantly higher number of fibroblasts after decontamination and this could improve clinical outcomes. Future studies will be needed to understand how bioactive surfaces and cells react to decontamination phenomena.

ORDINARY AND EXTRAORDINARY HYGIENIC MAINTENANCE IN DIFFERENT IMPLANT PROSTHETIC SCENARIOS

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Aim: to present hygienic protocols in different implant prosthetic scenarios. Two levels of implant maintenance are described: ordinary and extraordinary.

Methods: the ordinary hygiene session, performed by dental hygienist, includes clinical evaluation and individual instructions for oral hygiene. Scaling and root planning procedures are achieved with cures, ultrasonic tips, polishing cup or air polishing. Extraordinary maintenance, carried out by both dentist and hygienist, involves the removal of the prostheses to evaluate the state of implant and soft tissues. The same instruments for ordinary hygiene are used. The clinician must calibrate cadence and type in relation to the different implant-prostheses and clinical situations.

Results: in single crown cases, ordinary hygiene should be

performed every 4-6 months and extraordinary hygiene is needed just in case of inflammatory condition. If there are fixed partial prostheses, ordinary protocol should be performed every 4 months and extraordinary protocol should be repeated once a year or in case of inflammation. In case of fixed full-arch prostheses, ordinary hygiene should be performed every 4 months and extraordinary maintenance should be repeated every 6 months or if inflammation occurs. In the event of overdentures, ordinary maintenance should be performed every 4 months and extraordinary maintenance should be repeated only in case of inflammation.

Conclusions: within all the limitation of this study, a maintenance hygienic protocol was proposed in order to prevent peri-implants.

INFORMATION AND COMMUNICATION TECHNOLOGIES TO IMPROVE COOPERATION IN AUTISM

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Aim: children with autism spectrum disorders (ASD) often present inadequate access and cooperation to dental procedures with high frequency of intervention under general anesthesia even for professional hygiene sessions (PHs). Recent papers support use of a multidisciplinary approach by combining behavioral and information and communication technologies (ICT: tablets, mobile phone) to enhance compliance and improve oral health¹.

Methods: patient with ASD were involved in the study. Questionnaire for evaluation of patient cooperation was employed at each visit. ASD patients were assessed at T0, T1, T2. T0: first appointment with patient and caregiver with an attempt to perform PHs without ICT. Materials such as photos, videos and videogames were then given together with instructions for

domestic oral hygiene procedures and information regarding operative procedures of following appointments. T1: PHs with ICT. T2: completion of PHs and questionnaire. Mean score retrieved from questionnaire were calculated to evaluate variation in cooperation (higher score = better compliance).

Results: 13 patients were recruited, 9 males and 4 females: the mean age was 14.7. Variations of the cooperation score were T0: 4,92 T1: 11,31 T2: 17,00.

Conclusions: ICT were recently employed in dental management of ASD patients with good results. We observed good response in terms of cooperation with ICT use in support of specific behavioral approach for ASD children. This confirms value of this specific protocol to enhance access to dental care and reduce necessity of dental procedures under general anesthesia.

EVALUATION OF AEROSOL DISPERSION DURING DENTAL PROCEDURES WITH DIFFERENT METHODS OF ASPIRATION

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Aim: the aim of this clinical study was to evaluate the production of aerosol and droplets in a dentistry environment during the use of various devices. At the same time, the ability to contain aerosol of different aspiration systems was evaluated.

Methods: a voluntary patient has been recruited as study subject through an experimental model. Some agar plates have been placed at equal distance from the patient's headrest and on the operator's visor, to gather dispersed droplets. The handpiece, the scaler, the turbine and the air-flow were chosen as devices. Among the containment methods, on the other hand, the standard aspirator, the high-volume aspirator (HVE) and the Oral Bio Filter (OBF) were evaluated.

Results: after 72 hours of plate isolation, the device that resul-

ted in the largest growth of colony forming units (CFU) was the air-flow, followed by the handpiece, then the turbine and, lastly, the scaler. The HVE and the OBF have determined a significant reduction in CFUs with respect to the sole use of the standard aspirator. The areas in which the majority of the contaminating droplets deposited were in correspondence of the assistant and the operator and were detected at hour 3 and 9.

Conclusions: the data gathered confirmed the major risk to which dentistry staff is exposed. It was demonstrated that the air-flow caused the biggest production of aerosol. The use of the HVE and the OBF has been crucial for the containment of the droplets. Moreover, some specific areas have been recognized to be those in which larger concentrations of CFUs deposit.

PEDIATRIC NUTRITION & ORAL HEALTH SURVEY BETWEEN AN ITALIAN AND A CANADIAN SAMPLES

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Aim: the survey aims to assess the pediatric nutrition of two sample groups while associating it with their parents' self-perception of their oral health and comparing the given results between the two different populations with dissimilar cultural habits.

Methods: an anonymous questionnaire was administered to the parents of children aged 3 to 12 years of Italian and Canadian nationalities, concerning their frequency of food consumption, therapeutic drugs and supplements intake, carrier of extra-odontostomatological pathologies related to oral health, and their physical activity level and oral hygiene habits.

Results: Canadian sample consists of 51 respondents while the Italian sample consists of 106 respondents. The Canadian children show a more variegated diet than Italian children. Al-

most all children consume more cariogenic foods than protective ones. In the Canadian sample, the consumption of liquid cariogenic foods is higher in preschool age (3-6 years old), with 96% of them having high consumption of fruit juices. Meanwhile, in the Italian sample, the consumption of liquid cariogenic foods is higher in school age (7-9 years old), with 77% of them consuming fruit juice and 71% drinking sweetened tea. Both groups have a high consumption of snacks (100% of Canadian group and 95% of Italian group).

Conclusions: it is necessary to emphasize the need to increase awareness of the importance of healthy eating from an early age, which presents as the optimal period to set up the promotion of the development of healthy habits.

ORAL AND GUT MICROBIOTA IN CHILDREN WITH CARIES AFTER PROBIOTIC TREATMENT: NGS APPROACHES

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Aim: the study aims to evaluate the effect on gut and oral microbiota composition of children with carious lesions treated with *Streptococcus Salivarius* M18 DSM 14685 (Cariobliis) at phylum, family and species level.

Methods: the dmft/DMFT and ICCMS™ indexes were used to evaluate carious lesions: 10 children with high dmft/DMFT (higher than 3) and 9 caries-free children were enrolled in case and control group, respectively. We considered patients that did not have gingivitis, systemic or oral diseases and did not receive an antibiotic, probiotic, symbiotic or fluoride treatment in the past three months. Four samples from different oral niches and faeces samples from each patient were collected by

trained operator and analyzed with 16s Microbiota rDNA sequencing by S5 Ion Torrent (NSG).

Results: probiotic administration showed a positive effect on oral dysbiosis. In children with active caries, in tooth, saliva and oral vestibular regions, and in faeces there were changes in the microbiota composition.

Conclusions: according to the Literature, oral dysbiosis is affected by dental caries and in this study we observed an increase in two gastrointestinal bacterial species, *Bifidobacterium adolescentis* and *Ruminococcus torques*, which are linked to other diseases. Furthermore, *Streptococcus Salivarius* M18 DSM 14685 caused a shift to a healthier microbiota composition.

ORAL HEALTH-RELATED QUALITY OF LIFE AND OBESITY RISK: A CROSS-SECTIONAL STUDY IN ELDERLY

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Aim: the aim of this study is to assess, through a cross-sectional analysis, if any correlation may be observed between the GOHAI (Geriatric Oral Health Assessment Index) and OHRQoL (Oral Health-related Quality of Life) indices, and the risk of developing obesity.

Methods: 205 subjects (mean age 70 years) were investigated. At baseline (T0), anthropometric data, eating habits, oral health indices and numerous haematological parameters (glycemia, HbA1c, insulin, cholesterol, creatinine, hepatic and thyroid markers) were collected. All subjects completed the OHRQoL, under the supervision of two dental hygienists.

Results: the population analyzed (205 subjects) reported values compatible with the obesity in 26.90% of cases (N = 56). In this sub-population as well, a poor perception of the quality of life associated with oral health, and a worse oral health condition, were observed.

Conclusions: this study has highlighted how the oral health in the elderly population may correlate with eating habits. Furthermore, the condition of obesity is likely to be correlated with a poor perception of the quality of life associated with oral health. In conclusion, we may speculate that a greater risk of obesity correlates with a greater risk of oral diseases.

THE ASSESSMENT OF ORAL HEALTH STATUS IN PREGNANT WOMEN

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Introduction: periodontal disease can be compared to an outbreak of infection, so that the bacteria that mediate inflammation may not remain confined only to the gum tissue, but can enter the bloodstream and spread, thus spreading the infection and having a whole-body effect. Therefore, periodontal status is fundamental during pregnancy, in particular to prevent adverse pregnancy outcomes.

Aim: the aim of the present study was to assess the periodontal condition of a population of pregnant women.

Methods: pregnant women between 18 and 40 years at the 12th or 20th week of pregnancy presenting at the Gynecology Department of Vercelli Hospital between May and October 2021 were included. Patients with diabetes, neoplasms, hematological diseases, and hypertension were excluded. All included patients underwent a clinical dental examination including the registration of DMFT, PCR, GBI, OHI-S, WTCI and the assessment of past medical history. Then, all the included patients were administered three questionnaires: the OHIP-14 (Oral Health Impact Profile) questionnaire, the OIDP INVENTO-

RY (Oral Impacts on Daily Performances) test, and a questionnaire including questions about the use of toothbrush and oral hygiene habits.

Results: a total of 50 pregnant patients were included. Mean age was 30 years: 62% (n = 31) was in the 12th week of pregnancy, whereas 38% (n = 19) was at 20th week. As for DMFT, 34% of women had a value of 8 or less. As for OHIP-14, physical pain and psychological discomfort were the domains with most unfavourable values. Statistically significant association were observed between PCR index and type of toothbrush used ($p < 0,0005$; $RR = 0,0001$; $IC95\% = 0,0001-0,052$), between PCR index and the use of dental floss ($p < 0,0005$; $RR = 11,27$; $IC95\% = 2,44 - 55,26$), and between OHI-S index and the use of dental floss ($p < 0,01$; $RR = 7,97$; $IC95\% = 1,42 - 79,60$).

Conclusions: oral hygiene condition among pregnant women has to be improved. The role of dental hygiene practitioners is fundamental to inform such patients and to maintain a good periodontal health in order to avoid possible complications.

PREVENTION AND TREATMENT OF WHITE SPOT LESIONS: REVIEW

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Aim: white spot lesions (WSL) are white/brown spots found on the tooth surface as a consequence of local and systemic factors that cause demineralization of the enamel. On the market there are several products for their prevention and treatment. This work aims to help the clinician choose the most suitable protocol for solving this problem.

Methods: this review was conducted on articles published in PubMed from 2010 to 2020, mainly considering human studies compared to *in vitro* and animal studies.

Results: the constant use of fluorine-based products favors the transformation of hydroxyapatite into fluorapatite, which is more resistant to acid dissolution. Topical use was the most suitable for the prevention of enamel demineralization, while systemic intake proved to be less effective.

Casein phosphopeptide amorphous calcium phosphate (CPP-ACP) is a material deriving from milk proteins which, alone, or in association with fluoride (CPP-ACFP), has a bacteriostatic effect and is able to maintain the saturation of calcium, fluoride and phosphate ions on the tooth surface, hindering demineralization and promoting remineralization. The infiltration of the microporosities of the decalcified enamel with a low viscosity resin has proved to be an effective technique in improving the aesthetics of WSL.

Conclusions: some substances can be applied at home by the patient, others only by the dentist. A correct anamnesis to understand hygiene and food habits, and the degree of collaboration of the patient is essential to choose the most suitable product.

ORAL HYGIENE INSTRUCTIONS AND MOTIVATION. WHAT HAS BEEN DONE? A QUESTIONNAIRE-BASED SURVEY

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Aim: the management of correct oral hygiene allows to prevent the onset of caries and periodontitis and represents an essential tool to ensure the long-term success of any dental treatment. The aim of the study is to inquire patients' home oral hygiene habits and the perception of the importance they give to the daily plaque removal. Another objective is to assess whether dental professionals have conveyed to patients the importance of maintenance care and whether they have provided adequate oral hygiene instruction.

Methods: a questionnaire was administered to 42 adult patients who access the dental clinic of the Policlinico Umberto I in Rome for the 1st time. Exclusion criteria was the inability to understand the questions. The data was collected and analyzed through an online survey using Google form platform.

Results: 42 subjects were enrolled. 95% had a history of caries, 50% had dental prosthesis, 85% independently chose oral hygiene devices. 70% do not use interdental hygiene tools. 61% had never received oral hygiene instructions. 83% bled when brushing their teeth and 81% of these patients did not think that bleeding was a valid reason to see a dentist.

Conclusions: this survey showed that little importance is still attached to oral hygiene instructions and maintenance care for the treatment received. There's a need for dental professionals in future to draw up with patient a personalized protocol for the management of home and professional oral hygiene with scheduled check-ups and teach him to recognize the alarm signals coming from the oral cavity such as gum bleeding.

STRATEGY TO INTERCEPT AND TREAT ORAL ANOMALIES RELATED TO A PROFESSIONAL WINE CONSUMPTION

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Aim: daily wine intake for a long period could trigger the reduction in the levels of salivary calcium and phosphate ions, and a lowering of the pH values, which can increase the risk of oral diseases.

The purpose of the study is to verify what are the clinical effects of wine intake in the oral cavity of oenologists who have been working for more than five years.

Methods: the data relating to a group of 30 patients are reported. Patients have been allocated into two subgroups:

- Test group A: professional oenologists who have been taking a minimum of 35g of wine per day for at least 5 years (n = 20).
- Control group B: non-professional oenologists (n = 10).

The study design is of an observational case-control type, with a 1:2 ratio.

The main indices of oral health have been detected, such as PI, DMFT, BEWE, Air Blast Test, salivary test, PTC status, PSR, GBI, VSC.

Results: the comparative analyses have shown in the subjects/tests, who have reported the intake of ≥ 35 g of wine/day, numerous oral alterations compared to the control group. Specifically, the following parameters have shown a worsening: salivary pH, presence of halitosis, alterations of the structure of the lingual papillae, recurrent aphthae, altered perception of taste, and xerostomia.

Conclusions: on the basis of such preliminary clinical findings, it would be necessary to set up a personalized preventive and / or therapeutic plan able to allow the maintenance of oral health in such specific category of patients.

PTDM: CORRELATIONS WITH PERIODONTAL HEALTH IN PATIENTS WAITING FOR KIDNEY TRANSPLANTATION

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Aim: Posttransplantation diabetes mellitus (PTDM) is a serious and frequent complication after renal transplantation. Onset is related to anti-rejection immunosuppressive therapy. New evidence suggests that individuals at risk of developing Diabetes Mellitus 2 (DM2) have a higher risk of developing PTDM. Bidirectional correlations between periodontal disease and DM2 may suggest that patients with periodontitis waiting for transplantation are at increased risk of developing PTDM.

Methods: the periodontal health status of 90 patients waiting for renal transplantation or already been transplanted was assessed at the time of the visit for the clearance for transplantation. Patients already diabetic, edentulous or with insufficient data to make a diagnosis according to the 2017 classification

were excluded. The presence of renal insufficiency, pathologies favorable to the onset of PTDM, periodontal records, status and OPT were therefore considered.

Results: 94% of the patients evaluated had renal insufficiency and 70% had arterial hypertension. 8% of patients had hepatitis C and less than 2% had cytomegalovirus. 5% and 12% of cases were localized periodontitis and gingivitis, respectively. 83% of cases were generalized periodontitis with a majority of stages III or IV and grades B and C.

Conclusions: the presence of severe cases of periodontitis among patients waiting for renal transplantation is a serious problem. Currently there are no studies in literature that correlate periodontal health status and PTDM however its similarities with DM2 make this link plausible.

EVALUATION OF SALIVARY PH AFTER TAKING COFFEE WITH AND WITHOUT SUCROSE

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Aim: the aim of this study is to evaluate the salivary pH trend in a sample of people who consume coffee with or without sucrose, having performed or not the usual home oral hygiene.

Methods: a sample of 14 patients in good oral health was selected (PSR = 2 and DMFT = 0). The oral pH was measured for a total duration of 40 minutes with the aid of a pH Day2[®] pH meter. Five minutes after the base pH procedure, the subject was given an espresso (Nescafé Dolce Gusto, Espresso Intenso, Nestlé, S.A Vevey), with or without sucrose, and the pH measurements continued for another 35 minutes. The sample was divided into who take coffee with sugar and who do not, and into who maintained classical oral hygiene and who stopped it the evening before.

Results: in all subjects there was a clear reduction in salivary pH about four minutes after finishing coffee.

Subsequently, in those who had taken coffee without sucrose, there was an immediate increase in salivary pH. In those who had taken coffee with sucrose, pH increased slowly.

In the group of subjects who maintained oral hygiene a clear decrease in pH could be observed with a subsequent sudden increase. In who stopped oral hygiene the night before, pH levels were lower than in the other side.

Conclusions: this study shows that in order to maintain a basic pH of the oral cavity it is advisable to drink coffee without sucrose, and carrying out proper oral hygiene.

ZINC-L-CARNOSINE MOUTHWASH FOR THE TREATMENT OF RADIO AND CHEMOTHERAPY ORAL MANIFESTATIONS

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Aim: the study aims to evaluate the therapeutic efficacy of a Zinc-L-Carnosine mouthwash (Hepilor[®]) in the treatment of oral mucositis in cancer patients treated by radiation and/or chemotherapy.

Methods: the study included 42 patients, randomly allocated to the Test Group (TG) (n. 22) or to the Control Group (CG) (n. 20), hospitalized to the SOD of Medical Oncology, Ancona General Hospital, Italy. The oral mucositis and its adverse events were evaluated by the National Cancer Institute Common Toxicity Criteria scales. To TG was administered Hepilor[®], 4 rinses per day with 10 ml of pure product, for 3 minutes, for 30 days. To CG was prescribed 2 daily rinses with water and sodium bicarbonate, for one minute, for 30 days. Each evaluation was performed at the time of patient enrol-

ment (t0), after 15 days (t1) and 30 days (t2) from the beginning of the treatment.

Results: two patients were excluded from the study. In TG, the moderate mucositis (t0: 62%), its related symptoms (t0: 5-57%), and the use of analgesics (t0: 62%) were considerably reduced, both at t1 (28%; 0-14%; 14%) and at t2 (14%; 0-5%; 0%). In CG, the patients with severe mucositis (t0: 10%) and oral symptoms (t0: 0-56%) notably increased, especially at t2 (33%; 11-78%), as well as the use of analgesics (t0: 33%; t2: 68%).

Conclusions: these data confirm the clinical efficacy of Hepilor[®] in the treatment of oral mucositis in cancer patients. Together with an adequate oral hygiene, it reduced the severity of oral mucositis and its related symptoms, improving patients' quality of life.

SELF-PERCEPTION OF THE SMILE AND INFLUENCE ON ORAL HYGIENE: A MULTI-PARAMETER ANALYSIS

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Aim: to evaluate how important a person considers his smile and how this self-perception affects his oral hygiene practices at home, considering gender, age and geographical provenience.

Methods: submission of an anonymous multiple-choice survey with questions concerning gender, age, native nationality, perception of the smile and oral hygiene attitude; additional data such as PI (plaque index) and BOP (bleeding on probing index) were collected by a dental hygienist. The only condition of recruitment was to be above the age of 14; parameters such as health status, diseases, drugs intake or smoking habits were not considered limitation in order to take place into the study.

Results: 231 people replied to the survey. The analysis of the data revealed subjects from various ages and with several ge-

ographical origins (Europe, America, Africa, Asia). The data were collected to see if there were relations between them, and, to be considered statistically significant, a p-value $\leq 0,05$ was needed. Gender resulted related to smile importance and PI; age resulted related to PI, BOP, daily use of aids and dental control frequency; geographical provenience resulted related to self-appreciation of the smile, daily use of aids, daily brushing times and dental control frequency.

Conclusions: this study shows that population's age, gender and geographical provenience influence significantly the self-perception of the smile and the quality of daily oral hygiene practices. Moreover, the average PI and BOP indexes in the male sex is lower than the female one; females also consider the smile more important than males.

HYDROXYAPATITE VS FLUORIDE FOR REMINERALIZING AND DESENSITIZING WHITE SPOT LESIONS

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Biomimetic hydroxyapatite-based toothpastes have been studied recently for their remineralizing potential on teeth. The aim of the present study was to evaluate a toothpaste containing biomimetic hydroxyapatite compared to a conventional 1450 Ppm fluoride one on white spot lesions. The following indexes were considered: remineralization (Basic Erosive Wear Examination, BEWE), desensitization (Shiff Air Index, SAI), pain (VAS score), and patients' perspective. 40 patients were randomly assigned to two different domiciliary oral hygiene treatments: toothpaste containing 1450 Ppm of fluoride (Colgate® Protection Caries - control group) and toothpaste containing biomimetic hydroxyapatite (Biorepair® Advanced Sensitive - experimental group). For outcomes as-

essment the following timeline was considered: baseline (T0), 15 (T1), 30 (T2), and 90 (T3) days. Data were submitted to statistical analysis. SAI significantly decreased after 3 months (T3) of treatment only in the Trial group and VAS values resulted significantly decreased already at T2 in the trial group with a further significant reduction at T3. Conversely, BEWE scores and patients' perspective did not significantly vary during the follow up in neither group. Therefore, the use of the tested toothpaste containing hydroxyapatite could be effective for the domiciliary management of dental white spots with a reduction on pain and hypersensitivity higher than a conventional fluoride toothpaste and with the same appreciation by the patients.

PARAPROBIOTICS IN NON-SURGICAL PERIODONTAL THERAPY: CLINICAL AND MICROBIOLOGICAL ASPECTS

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Aim: periodontal disease represents a progressive destruction of tooth-supporting tissues. Recently, paraprobiotics are regarded as an adjunctive therapy to the non-surgical Scaling-and-Root-Planing (SRP). The aim of this study is to evaluate the efficacy of two new formulations of paraprobiotics, a toothpaste and a mouthwash for the domiciliary hygiene.

Methods: a total of 40 patients were randomly assigned to the following domiciliary treatments: control group (SRP + Curasept Intensive Treatment 0.2% chlorhexidine) and trial group (SRP + Biorepair Peribioma toothpaste + Biorepair Peribioma Mousse mouthwash). Periodontal clinical and microbiological parameters were recorded at baseline (T_0) and after 3 and 6 months (T_1 - T_2).

Results: the use of these products resulted in a significant reduction of most of the clinical indices assessed, which occurred at a major degree with respect to the conventional chlorhexidine considered as control. Additionally, after 6 months of use, the abovementioned products significantly decreased the percentage of pathological bacteria and the counts of those bacteria constituting the “Red Complex”, more related to the periodontal disease.

Conclusions: the paraprobiotics-based products tested in this study seem to represent a valid support to SRP with a benefit on both clinical indices and on specific periodontal pathogens.

EFFICACY OF PLAQUE DISCLOSURE IN ORTHODONTIC PATIENTS: PRELIMINARY RESULTS

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Aim: to evaluate the effectiveness of a plaque disclosing agent (PDA) as visual guide for biofilm removal in patients with fixed orthodontic appliances.

Methods: 32 adult patients systematically and periodontally healthy (with PI \geq 25%) with fixed orthodontic appliances at upper and lower jaw have been enrolled. After screening and informed consent signature patient have been divided in test and control group according to a randomization process. In the test group PDA was applied before and after the non-surgical periodontal therapy, while in the control one PDA was applied only at the end of the treatment. The residual plaque area has been detected by using standardized pictures analyzed by Image-J software.

Results: these preliminary results have been calculated analyzing data by the first 13 patients. All the frontal photos have been elaborated to avoid the residual area covered by plaque disclosing agent percentage (RPA) assessment.

In test group RPA was 3,58% (1,8% - 5,38%) while in control group was 18,38% (14,12% - 22,63%), with a statistically significant difference of 14,8% (10,2% - 19,3%) and a P-value $> 0,001$.

Conclusions: results show a significant benefit in plaque disclosing agent appliance at the beginning of non-surgical periodontal therapy, helping dental hygienist in biofilm careful detection and accurate removal in patients with fixed orthodontic appliance.

NEW DIGITAL HOME MOTIVATION TECHNIQUES IN CHILDREN

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Aim: during childhood, behaviors are learnt which promote oral health, these influence children's growth and development. It is important to sensitize parents since their habits determine those of their children. The purpose of this literature review is to evaluate the effectiveness of new technological devices in motivating oral hygiene in patients under 12 years of age.

Methods: an electronic search on PubMed was performed by entering appropriate Keywords. Only studies published between 2011 and 2021 were selected, and inclusion and exclusion criteria were established.

Results: apps would seem to be the first choice for the improve-

ment of oral hygiene habits in the home, offering the child motivation in the form of entertainment. However, no app has yet been found with all the necessary features to ensure adequate health care. A new frontier of digitalization is represented by virtual reality, which increases awareness and interest in oral health. Digital tools can help parents make proper habits part of their children's daily routines. However, in low developed countries, traditional motivation techniques remain more effective.

Conclusions: the new digital tools would seem to be a valuable support for dentists and dental hygienists in the motivational interviewing of pediatric patients.

TECHNOLOGICAL INNOVATIONS IN SUPPORT OF THE DENTAL SECTOR DURING THE COVID PANDEMIC

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Aim: the pandemic caused economic and psychological problems for both the patient and the practitioner; the world of technology was supportive for the whole health sector.

Methods: an electronic search was performed on PubMed and Eureka by entering specific key words.

Results: 12806 articles were found, according to the inclusion criteria 39 articles were selected. 8 papers underlined the economic consequences caused by the pandemic in dental facilities, highlighting a mark-up loss of more than 100%. 7 papers addressed the issue of reduced employment. 3 papers highlight the change between pre- and post-pandemic in the use of digital instruments. 8 papers highlight an increase in

protective measures taken to cope with the emergency. The last 13 addressed psychosocial issues caused by lockdown in both health care workers and patients.

Conclusions: technological innovations present throughout the patient pathway have made it possible to minimize the risk of SARS-CoV-2 infection. In particular, the use of telemedicine, of innovative tools both in the administrative and procedural spheres, and of disinfection, sanitization and sterilization protocols have led to an increase in the patient's confidence in the structure and in the professional, as well as to economic savings also in terms of oral health prevention.

CONTAMINATION AND DAMAGES OF AIR POLISHING: LITERATURE REVIEW AND *IN VITRO* EXPERIMENTATION

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Aim: the aim of the study is to investigate the effect that air polishing dusts have on the operator, continuously exposed to them, and on the surrounding environment; secondly to provide practical advice to minimize the risk of contamination to the operator and the environment

Methods: 5-minute air polishing sessions were performed on mannequins by two operators. A 50% mixture of glycine and bicarbonate powder with sodium fluorescein tracer was used. Several patches were placed on the face, arms and body of the operators and in the surrounding environment, 1m and 2m from the mannequin respectively, to observe the presence of trace amounts of fluorescein in the dental office. Various protective devices (goggles, FFP1/2/3 masks, gowns, face-shields) were tested to observe material deposition.

Results: the study found that there was 100% contamination of the samples under gowns, smocks, face-shields, goggles and also under all types of filtering face masks. This is because some powders have extremely fine particle size (< 30µm). The validity of the data collected was confirmed by the positive result of the Kruskal-Wallis test.

Conclusions: the presence of sodium fluorescein tracer detected in the various body districts and environment shows that there is a strong possibility that molecules of dust released by the air-polishing device and droplets coming from the oral cavity of the patient are transported with it. To reduce this contamination risk, all equipment and protective devices should be always used, and the dental office should be equipped with fume hoods.

EFFICACY OF INSTRUMENTS FOR PROFESSIONAL ORAL HYGIENE ON DENTAL IMPLANTS: A SYSTEMATIC REVIEW

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Aim: professional oral hygiene is fundamental to prevent peri-implant disease. Appropriate instruments should be used in patients with restorations supported by dental implants: they should be effective in deposits removal without damaging the implant components surface. The aim of the present study is to investigate and summarize the results regarding the efficacy of oral hygiene techniques described in the literature in the last 10 years in patients rehabilitated with dental implants not affected by perimplantitis.

Methods: the present systematic review was conducted according to guidelines reported in the indications of the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA). The focused question was: "Which are the most effective instruments for professional oral hygiene on implants not affected by perimplantitis?". The initial database search

yielded a total of 934 entries found in PubMed®/MEDLINE and Cochrane Library. The risk of bias of included studies was assessed using the Newcastle Ottawa scale (NOS) and the Cochrane Handbook for Systematic Reviews of Interventions.

Results: after full text review and application of the eligibility criteria, the final selection consisted of 19 articles. Curette, scalers and air polishing were the devices most frequently investigated in the included studies. The application of the more recent erythritol powder air polishing also yielded good clinical outcomes.

Conclusions: glycine powder air polishing appeared to be significantly effective in reducing peri-implant inflammation and plaque around implants. Further studies are needed to improve the knowledge on the topic in order to develop standardized protocols and understand the specific indications for different types of implant-supported rehabilitations.

MARKETING STRATEGIES IN THE RELATIONSHIP BETWEEN PATIENT AND DENTAL HYGIENIST

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Aim: digital communication has spread over time thanks to continuous progress in the world and technologies, until it became fundamental in social relations, in economic activities and in everyday life. The purpose of this review is to draw up a valid protocol for the dental hygienist for patient education, motivation and awareness about oral hygiene.

Methods: a literature search was conducted on the PubMed database with the relevant keywords. The search field was restricted selecting only studies performed from 2011 to 2021 and articles not available in full version were excluded.

Results: 35 articles were found, 21 of which are included within the review. Among the included studies, 12 deal with

social media in oral health communication as the main topic: 6 tele-dentistry; 1 marketing for the dental hygienist and 1 communication between doctor and patient. The results show that 74% of dentists and 44% of patients consider it inappropriate for dentists and patients to be friends on social media.

Conclusions: communication and marketing strategies between the patient and the dental team are implemented by the new technological and social aids. The analysis of these articles shows that most patients feel more supported if the teleconsultation is combined with traditional oral hygiene procedures. Further studies will be needed to be able to demonstrate the long-term effectiveness of telemedicine.

HYGIENE PROTOCOLS AFTER SURGICAL BONE REGENERATION: A REVIEW OF THE LITERATURE

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Aim: to find evidence of the best hygiene protocol to be adopted after surgical bone regeneration in angular defects or furcations.

Methods: the study is based on a review of the literature. For the choice of the hygiene protocol were considered number of days without brushing teeth, concentration of CHX used by number of days, type of toothbrush used, any interdental devices suggested and recall to professional oral hygiene procedures, both in terms of timing and methods used.

Results: 7 articles among case reports and clinical trials about the therapy after surgical bone regeneration have been selected and analyzed; everyone of which suggest a different

post-surgical hygiene protocol. Each of these protocols, however, present limitations because they don't provide clear and exhaustive post-surgical indications. In order to provide for it, additional 7 articles about post-operative hygiene protocols in case of clinical advanced flap surgery has been taken into account. The statistical analysis of these articles shows that the best protocol is the one proposed by Zucchelli et al.

Conclusions: even though Zucchelli's hygiene protocol was created for mucogingival surgery, it could be the best also after surgical bone regeneration, since it proposes professional and domestic oral hygiene instructions that support optimal healing of the surgical site.

THE EFFECTS OF CETYLPYRIDINIUM CHLORIDE (CPC) ON GINGIVITIS AND PERIODONTAL DISEASE

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Aim: to evaluate the effects of mouthwashes containing cetylpyridinium chloride (CPC) in subjects suffering from gingivitis and periodontal disease.

Methods: a search in the MEDLINE-PubMed database was conducted, which identified 6 full-text articles, with publication dates from 2008 to 2020, with data relating to CPC, gingivitis and periodontitis. The quality of the methodology of the five included studies was assessed based on a quality rating scale, the Jadad Scale. In the Jadad Scale, the methodological quality of studies is assessed by assigning points and having a range of scores from 0 to 5. Three studies scored 3, while the remaining two studies scored 4. From the selection of papers that met the criteria, data were extracted regarding the efficacy of products (toothpastes and mouthwashes) containing

CPCs compared with treatments containing other products (most frequently chlorhexidine and essential oils) or compared with a control rinse.

Results: analyses and comparisons are made between products containing CPC and products containing essential oils, chlorhexidine or others. Mouthwashes containing CPC were found to have an anti-gingivitis effect and are able to maintain plaque composition in a healthy and immature state. This effect ultimately prevents or slows the progression of gingivitis.

Conclusions: existing studies in the literature support that CPC provides benefits in reducing plaque and gingival inflammation as well as reducing certain bacterial species, i.e. *S. oralis* and *T. denticola*, *P. gingivalis* and *T. forsythia*, in periodontal disease.

CHILDREN&CARIES: CARIES RISK ASSESSMENT

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Abstract: Childhood caries (ECC) remains the most common chronic disease in children, with a significant impact on society. The key factors that cause caries in adults and children are similar, but there are some UNIQUE risk factors present in young children. In addition, defective dental surfaces may present hypoplastic prevention to date supported by scientific literature. However, as shown in the literature, risk factors have increased over time.

Methods: the book ChildrenandCaries is a useful tool to identify the main risk factors of caries and contains advice and food recipes, instructions for home hygiene, pediatric deconstruction maneuvers, safe cutting of food, Coloring pages and stories to help the child get closer to the prevention of this disease. childrenandcaries.com calculates the real risk of caries and based on the scientific evidence that this factor represents, shows on a web diagram of a spider and offers a specific result and treatment plan that depends on the result that can be low, medium or high. The framework is designed to contain the following risk factors: DMFT and Caries Activity,

the presence of enamel defects, erosions, wearers of orthodontic equipment, diet, quality and quantity of saliva, whether or not supplementation with fluoride or fluorine substitutes, eating disorders and gastroesophageal reflux, quality of oral hygiene, socioeconomic status and oral health of the family, radiation therapy, systemic dysfunction.

Results: Childrenandcaries provides a dedicated functional chart for dental hygienists, dentists and pediatricians to categorize their patients into different groups and record data to have a better method of monitoring their patients. Patient risk assessment for caries recurrence can be evaluated according to a variety of clinical conditions. The full spectrum of risk factors and indicators should be assessed simultaneously.

Conclusions: each parameter has its own scale for minor, moderate and high risk profiles. A complete assessment of the functional chart will provide an individualized total risk profile and determine the frequency and complexity of visits. Modifications to the functional chart may be made if additional factors become important in case of new evidence.

PROLONGED BREASTFEEDING AND ECC? KNOWLEDGE OF DENTAL HYGIENISTS AND MIDWIVES

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Aim: the aim of the study is to assess the knowledge of Dental Hygienists and Midwives about prolonged breastfeeding as a risk factor or protection for ECC (Early Childhood Caries), related to scientific evidence, OMS references and ministerial guidelines. Appetite for multidisciplinary approach and collaboration have been assessed too.

Methods: two difference and anonymous questionnaires were proposed to Dental Hygienists (15 questions) and Midwives (13 questions) through social networks, email and SMS.

Results: analyzing collected data most of Dental Hygienists showed a lack of knowledge about positive effects of prolonged breastfeeding on mouth evolution, and they also didn't know the relationship between short duration of breast feeding (< 6 Months) and higher risk of ECC. The answers also showed

gaps in training during University and some Dental Hygienists claimed to recommend stop breastfeeding to prevent or combat ECC, totally disagree with scientific evidence.

Questionnaires of Midwives showed a lack of knowledge about ECC and any link with breastfeeding, gaps in training during university also emerged from questionnaires. Most of Midwives affirmed they never read "National guidelines for oral health promotion and oral disorders prevention in childhood".

Conclusions: it is clear and obvious that gaps at university must be filled and the relationship between Dental Hygienists and Midwives must be based on training, information, and cooperation. Health care professionals could train each other, could collaborate, solve case, and inform parents and caregivers.

DENTAL HYGIENIST: NEW MEMBER OF CLEFT TEAM FOR MANAGING PATIENTS WITH CLEFT LIP AND PALATE

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Aim: the aim of the study is to evaluate the awareness of patients and families regarding the importance of oral hygiene and knowledge of the figure of the Dental Hygienist. Furthermore, the drafting of a home-hygiene protocol shared with the Cleft Team is proposed in order to improve the oral health conditions of patients.

Methods: a questionnaire with 44 queries was developed and proposed through social networks, that has been filled in completely anonymously both by patients with cleft lip and palate (> 18 y) and by their parents. The questions mainly concerned the quality of oral hygiene, the use of home aids and nutrition.

Results: from the analysis of the answers obtained with the survey, a significant lack of quality of home oral hygiene and the privation of knowledge of the Dental Hygienist figure emer-

ged in 25% of the completed questionnaires. 44.7% of attendees don't perform regular dental checks, 23.6% of them are unaware of the figure of the Dental Hygienist. The shortage of quality of good brushing combined with the non-use of interdental aids by 46% of participants and the use of a good toothpaste certainly leads the subject to develop plaque-related gum disease and carious lesions.

Conclusions: families and patients with cleft lip and palate are rarely aware of the role of the Dental Hygienist in maintaining oral health and in counseling regarding tools for home oral hygiene. It would be desirable to include specific courses for the management of patients with cleft lip and palate in the training course of the professional figure of the Dental Hygienist.