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A randomized clinical trial study comparing efficacy between two salivary substitutes in radiotreated patients for head and neck cancer

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BACKGROUND: Management of xerostomia following radiation therapy is difficult. When residual gland function remains it may be possible to stimulate gland function by means of local measures or with systemic medication. When saliva cannot be stimulated, use of wetting agents or salivary substitutes are considered. The aim of this study is to compare differences in salivary flux, salivary pH and VAS in patients using two types of salivary substitutes, Hydral Gum® and Biotene®, before and after the radiotherapy in order to identify the most satisfactory for the radio-treated patients, to keep the oral conditions under control and to guarantee the best possible lifestyle to the patient.
METHODS: Subjects were recruited from patients starting the radiation therapy to the head and neck at Città della Salute e della Scienza di Torino. The patients have been divided randomly in group A (Biotene®) and group B (Hydral Gel®). At T0 salivary flux and pH before radiotherapy were registered; at T1, one months after the beginning of radiotherapy, results of VAS scale have been collected; at T2, two months after the end of radiotherapy, salivary flux, pH and VAS have been registered. Criteria of inclusion were dyagnosis of head and neck tumors, need of radiation therapy, age between 18-75, minimum 10 teeth. Patients with preexistent hyposalivation, radiotherapy already started, advanced periodontal disease, diabetics and severely debilitated patients with advanced tumors (stage IV) or threated only with surgery or chemotherapy has been excluded. Patients were motivated and instructed to the correct techniques of oral hygiene, and to use the oral gel a minimum of four times a day. Whole unstimulated saliva was collected in the morning for 5 min and paraffin-stimulated saliva was collected after 5 min at each visit; pH measurements and the buffering capacity has been recorded. Patients were asked to record the severity of symptoms using visual analogue scales (VAS) for the following symptoms: dry mouth at rest/when eating, difficulty speaking/swallowing due to dry mouth, altered taste.
RESULTS: A group of 26 subjects (23 men and 3 women, medium age 55 years old) were recruited. Every test has a 5% level of significance, the maximum error that allows to make is 0,05. Data from both groups have been analyzed using T-student test: 1) Group A (Biotene®): VAS T1-T2 p value > 0,5; salivary flux T0-T2 p value <0,5; salivary pH T0-T2 > 0,5; 2) Group B (Hydral Gel®): VAS T1-T2 p value >0,5; salivary flux T0-T2 < 0,5; salivary pH T0-T2 p value > 0,5; 3) Comparison between group A and B reveals p value > 0,5 at T2 for VAS, p value > 0,5 at T2 for salivary flux, p value > 0,5 at T2 for salivary pH.
CONCLUSIONS: The statistical analysis reveals 1) in Group A no significant differences for salivary flux and VAS but statistically significant improvement of salivary flux 2) in Group B no significant differences for salivary pH and VAS but a significant improvement of salivary flux 3) no differences between substitutes A and B at T2 for VAS, salivary flux and salivary pH. However, patients went through an improvement assessable from the statistic analysis of the single group; patients from both groups reported improvement in swallow, speaking, dysphagia and gum burning. The study underlines how continuative use of salivary substitutes improves the quality of life of patients undergoing radiation therapy of head and neck.

Risk factors between I, II, III class occlusion and periodontal disease: appraisal through TC-Cone Beam

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BACKGROUND: The aim of this study is to measure the periosteal bone loss of some dental elements, previously chosen as benchmarks, in the I, II and III skeletal class and to evaluate the correlation between malocclusion and periodontal disease.
METHODS: 90 TC-Cone Beam of healthy patients, between the ages of 14 years and 20 years, in the pre-orthodontic phase will be examined. 30 of these TC-Cone Beam will be related to patients with I skeletal class, 30 with II skeletal class and 30 with III skeletal class. The TC-Cone Beam for each group studied will be randomly selected. Some dental elements will be taken as samples for each patients. Maxillary and mandibular dental incisors (11, 21, 31, 41), maxillary and mandibular canines (13, 23, 33, 43) and maxillary and mandibular first permanent molars (16, 26, 36, 46) will be the samples. Through the use of the Materialise 3-matic software, the distance between the cementoenamel junction (CEJ) and the alveolar bone will be evaluated considering all the sites of the dental elements: disto-vestibular, vestibular, mesio-vestibular, distal-lingual / palatal, lingual / palatal and mesio-lingual / palatal. If a correlation between a specific skeletal class and periodontal disease is noticed, in vivo studies will be performed in order to confirm what has been noted in TC-Cone Beam. In the oral clinical examination will be evaluated periodontal disease in relation to some indices like FMPS (full-mouth plaque score), FMBS (full mouth bleeding score), loss of attachment, gingival recession, mobility and furcations. The dental elements considered in this exam are the same of the evaluation on the TC-Cone Beam.
RESULTS: The study of TC-Cone Beam relative to the bone level of the dental elements taken into consideration could reveal a correlation between malocclusion and periodontal disease in pre-orthodontic patients. There could also be a different incidence of bone defect between I, II, III skeletal class.
CONCLUSIONS: It is important to evaluate the periodontal parameters in patients in the pre-orthodontic phase to intercept any problems related to the skeletal class. In this way it may be possible to draw up personalized protocols during the orthodontic treatment plan in order to prevent any periodontal risks.

Treatment of periodontal pockets with hydrogen peroxide and hyaluronic acid: evaluation of oral microbiota

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BACKGROUND: Evaluation of the oral microbiota after treatment with hydrogen peroxide and hyaluronic acid, of periodontal pockets in order to alleviate the pain symptoms, reduce the pathogenic bacterial load, the probing depth and reduce bleeding in the survey.
METHODS: 25 adult patients of both sexes are randomly