Salivary Antioxidants and Nutritional Status among Chronic Periodontitis Patients

A Thesis
Submitted to the Council the College of Dentistry at theUniversity of Baghdad, In Partial Fulfillment of the Requirements for the Degree of Master in Science in Periodontology

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2010 A.D. 1431 A .H.
Baghdad-Iraq

Abstract

Background: Chronic periodontitis is an inflammatory disease that affects the supporting tissues of the teeth and it's a common chronic adult condition. Malnutrition, particularly characterized by deficiencies of the essential necessary antioxidants micronutrients including vitamins (C, E and A), which they had a significant effects in relation to oral health.
Aims of the study: The aims of this study were to assess the salivary antioxidants vitamins (C, E and A) levels and their relation to periodontal parameter among individuals with underweight and normal weight.
Materials and Methods: The study sample is consist from 80 males with age group (25-50) years old without any systemic disease and divided into 4 groups: group 1 (20) individuals had underweight and chronic periodontitis, group 2 (20) individuals had underweight and normal periodontium, group 3 (20) individuals had normal weight and chronic periodontitis and group 4 (20) individuals had normal weight and normal periodontium. Nutritional status of the individuals was assessed by using body mass index (BMI). Periodontal parameters used in this study were plaque index (PLI), gingival index (GI), probing pocket depth (PPD) and clinical attachment level (CAL). Unstimulated salivary samples were collected and salivary flow rate (SFR) and saliva PH was determined. Salivary samples then were chemically analyzed for the detection of salivary antioxidants vitamins among all groups.
Results: The salivary levels of vitamins were significantly lower in the groups of underweight in compare with the group of normal weight and normal periodontium. For the group with (N.W. & CH.Perio.) the salivary levels of vitamins C and A was significantly lower in compare with the group (N.W. & N.Perio.), whereas vitamin E had lower non significant levels in these groups. Plaque index and gingival index were significantly higher in groups with chronic periodontitis, only gingival index were higher in group (U.W. & N.Perio.) in compare to group (N.W. & N.Perio.). Concerning saliva flow rate and saliva PH were significantly lower in group (U.W. & CH.Perio.) and (N.W. & CH.Perio.) in compare to group (N.W. & N.Perio.). Statistically vitamins had a negative non significant correlation with plaque index, while for gingival index vitamin C only had a positive significant correlation in group (U.W. & CH.Perio.). For probing pocket depth, vitamin C had a negative significant correlation in group (U.W. & CH.Perio.) and (N.W. & CH.Perio.) with PPD≥7, vitamin A also had a negative significant correlation in group (U.W. & CH.Perio.) with PPD≥7 and in group (N.W. & CH.Perio.) with PPD≤6, while vitamin E had a negative non significant correlation in group (U.W. & CH.Perio.) and (N.W. & CH.Perio.).

Concerning clinical attachment level vitamin E had a positive significant correlation in group (N.W. & CH.Perio.) with CAL≥6; vitamin A had a negative significant correlation in group (U.W. & CH.Perio.) with CAL≤5, while vitamin C had no significant correlation with clinical attachment level.

Conclusions: Periodontal disease revealed a higher occurrence and severity among individuals with malnutrition therefore good nutrition and special oral health care are needed for them. Salivary antioxidants were found affects the oral health and additional supplementation of vitamins (C, E and A) are necessary during periodontal treatments to improve the healing.