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Benzydamine and Dietary Factors as A Preventive Measure in Geriatric Diabetic Patients with Periodontal Disease

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ABSTRACT

Background The purpose of this contribution is to prevent oral complications by presenting the use of mouthwash as an aid in order to improve the signs and symptoms of periodontal disease, as well as promoting dietary factors in geriatric diabetic patients. This research is a clinical, prospective, observational, comparative, and longitudinal study. It was conducted in geriatric diabetic patients controlled by plaque variables, educational intervention on proper brushing technique, mouthwash and diet. Methods and Results It was found that by making the educational intervention, diet, the use of mouthwash reduced the biofilm, periodontal pathogenic flora (80%), periodontal index and postoperative recovery time (100%), salivary flow increased. Conclusion It is necessary to encourage patients to maintain oral hygiene, balanced foods consumption with an appropriate consistency that allows chewing, without hurting the periodontium. Urge the specialists in the area, to keep constantly updated on specific nutritional intake for diabetics

Keywords : benzydamine; periodontitis; diet.

1 INTRODUCTION

Type 2 diabetes mellitus (T2DM) is not a disease, it is a syndrome that occurs as a result of a relative or absolute deficiency of insulin of an endocrine type produced by the pancreas, it is characterized for chronic hyperglycemia and abnormalities of lipid and carbohydrate metabolism.[1,2]

In the oral structures, there are physiological changes of aging; the diabetic patient has lost dental organs. Currently, the consumption of fats and refined foods contributes to the rise of risks and prevalence of systemic diseases.[1]

The recommended diet by the patient's physician with T2DM is cereals, bread, apple and cottage cheese. The texture and consistency of food mentioned above, the disease, as a side effect of pharmacological treatment exacerbates decrease or loss of salivary flow (xerostomia affects 30% of patients aged above 65 years old), causing a food bolus compact, adhering to the surface of the teeth leading them to caries, gingivitis and periodontitis.[3,4,5]

Lack of a proper brushing technique, besides poor culture for dental prevention allows microbial growth. The feed may cause unbalanced malnutrition, which explains reduced resistance to infection and increased oral diseases.[6]

The World Assembly on Ageing, says the protection of either geriatric diabetic patient (GDP) or healthy ones whatsoever, prevent tooth loss, xerostomia, by limiting chewing, microbial growth, promote the formation of dentobacterial plaque composed by food deposits with germs and bacteria, placed on the tooth surface and restorations, etiologic agent of dental caries and periodontal disease.[5,6,7]

In 1965, Egelberg et al., determined the stages of dentobacterial plaque classifying them from phase I to IV[8].

In the 90s, dentobacterial plaque model biofilm was developed, which is the frequent growth of bacteria, (attached to a solid surface and immersed in liquid).[8,9,10]

If dentobacterial plaque is not eliminated, it is calcified; gingiva is inflamed, and by bleeding it generates periodontitis, frequent cause of tooth loss in GDP. Some authors argue that it is a process that occurs as age goes on, other factors point as poor oral hygiene or existence of systemic diseases: diabetes[9,10,11], hypertension, rheumatoid arthritis.

For the basic periodontal examination, we use the standard in preventing gingival and periodontal diseases12 (MINSAL 1998).

In GDP, dentobacterial plaque formation is enhanced by xerostomia, inappropriate brushing technique,6,10 loss of manual skills and diet inconsistency. Doctors recommend: to reduce or avoid eating refined flour, eating "brown bread", patients buy the "economic brand," whose content is high in sodium (259 mg per serving), 30% of GDP are hypertensive and obese (annual report on global health, Diabetic Association of Madrid).[13]

Commercial "brown bread" is extracted from wheat germ, because its oil has a high commercial value, therefore it is not 100% whole wheat bread.

Refined flour, for its composition, is adhered to the surface of the teeth, if presented hyposalivation or xerostomia, GDP generates dental and periodontal susceptibility.11,13 "Homemade" Brown bread box has flour and wheat germ without enhancers, gluten, and wheat bran, the disadvantages are that refer shorter shelf life, natural ingredients for the monetary value increases.

The apple contains pectin, which is a soluble fiber that helps with the dissolution of cholesterol; it is also a good weapon

against diabetes according array.13 There are varieties of mealy meat with oxalic acid that can create salts combined with salivary minerals.

In nutritional therapy, cottage cheese is recommended, in order to elaborate it, direct chemical acidification (DCA) technique is used in Latin America, another one is concentrated acetic acid (which is a dangerous chemical compound against health). The texture and consistency of cottage cheese lets stick to the teeth.

The foods mentioned, cause a compact consistency cud, adhering to teeth surfaces inducing them to caries, gingivitis and periodontitis.[14]

As dentists, we encourage the use of medical nutrition therapy: intake of natural grains, homemade bread, cottage cheese, made from pasteurized cow's milk, rennet, no preservatives or artificial flavors, perform proper hygiene, use benzydamine mouthwash up to 20% as a preventive measure in improving the signs and symptoms of periodontal disease (PD) and xerostomia.

In clinical practice, specific signs are detected at the oral cavity in GDP, who is a highly damaged group on mouth health by not receiving prevention measures, and balanced diets.12,15 The aim is to implement educational intervention (EI) on dietary factors , maintenance of the oral cavity, check advantages of GDP PD benzydamine16 located in postoperative treatment scraping / curettage, and improving oral hygiene.

Among the identified restrictions: once the GDP get older, the brushing technique11 gets impoverished by loss of manual skills, decreased salivary flow3,4, type of consumed diet1 and resistance to change (hygiene, diet).

2 MATERIAL AND METHODS

The high incidence of PD requesting GDP dental clinics in the Dental Faculty of the Benemérita Universidad Autónoma de Puebla Puebla (FEBUAP) denotes inadequate food intake, hyposalivation and xerostomia. It is pertinent to intervene to prevent stomatognathic repercussions, lack of salivary flow limits the patient causing greater periodontal conditions2, and dietary factors affect the formation of bacterial plaque.

Material to be used:

1. to periodontics
2. saliva collection and quantification
3. stationery, computer software (Sigma Plot 8.0), statistical test (McNemar)

Design: Clinical, prospective, observational, comparative, longitudinal section.

- Universe: GDPT2 attending clinics (FEBUAP 2011-2012).
- Sample: 60 GDP PD moderately located (EPML), both genres, 65-75 years of age.
- Excluded: type 1 diabetic patients, other systemic diseases, use of mouthwash, periodontal treatment prior teeth or molars with cervical lesions, erosion, abrasion, restorations, prostheses, former smokers, smoking, mouth breathing, depressed, pharmacological treatments.

METHOD

HC, consent informed (Helsinki ethical principles and FEBUAP academies).

Participants were surveyed about brushing technique, the use of mouthwash, GDP diet. The HC collected general family, personal, clinical-radiographic diagnosis, dental chart, periodontology, collection of saliva (according to ALAIS parameters) pre and post-treatment background for each group (65-70 and 71-75 years of age) the revelation of the dental biofilm was carried out by applying swab with dual tone substance following the O'Leary index (1972), it was therefore diagnosed tooth mobility, periodontal and brushing technique.

Left lower quadrant scaling and curettage therapy was initiated, EI, brushing technique and dietary factors.

15 days later, under the same procedures, data were recorded on right lower quadrant: including mouthwash based on benzydamine. Two weeks following data were recorded.

The collection of data was marked on the format and conducted by two researchers (calibrated).

3 RESULTS

Following O'Leary parameters for analysis, they were classified by age 65-70 years, both genres, 30 patients, 87% showed detecting biofilm preoperative in the "wrong" category; postoperatively with EI, 12% nutrition and mouthwash detected.

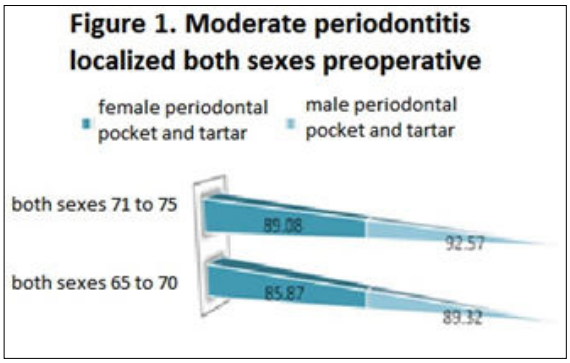
The statistical results of the McNemar test preoperatively without mouthwash, or EI = 25.94 (p 0.001) postoperatively with mouthwash and EI within 30 days is = 11.04 (p 0.0001) indicating significant difference.

71-75 year-old patients, presented same parameters, preoperative candidates representing 92% of biofilm in the "wrong" category; postoperative 15%.

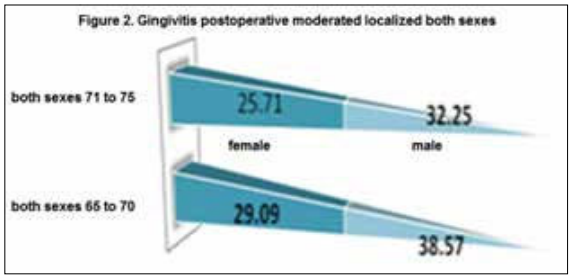
Statistical results preoperative 22.22 (p 0.001) postoperatively with mouthwash and EI within 30 days 12.01 (p 0.0001) indicating significant difference.

O'Leary index parameters:
Good = 0-20% of tooth surfaces with biofilm.
egular = 21% -30%
Wrong = 30%

Initial treatment: periodontal index rising in GDP, both genres. Results: More than 85% of the patients present periodontitis located on periodontal bag in first molars (3.5 to 4mm) Figure 1.



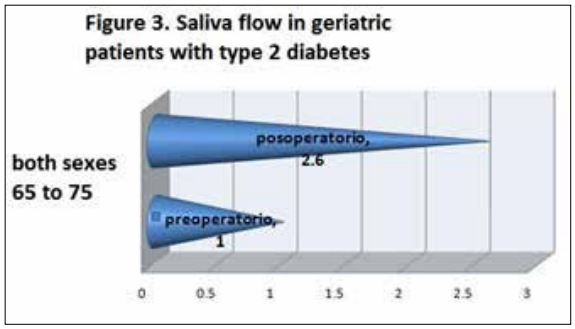
Considering the results, we proceeded to carry out the scaling and curettage treatment, EI was implemented regarding oral hygiene, food and mouthwash three times a day after brushing teeth, favorable results were obtained clinically in periodontal index in GDP, after 15 days of treatment, PML passes through gingivitis, without periodontal bag or bleeding, being the results discharged in figure 2. Within 30 days moderate inflammation is detected (7%) of the total patients.



The results were analyzed by age and genre, preoperative and postoperative male had a higher number of PD; there is change of the signs and symptoms so that postoperative

treatment is significant, the PD passes through gingivitis or the disease disappears. The older one gets, the higher incidence of PD and gingival is.

The use of mouthwash, increased the salivary flow from 1.0 to 2.6 postoperatively to treatment, see Figure 3. The flow rise helped tissue regeneration and reduced inflammation.



The results show that carrying out the EI, diet performance and use of mouthwash, the results are favorable (87%).

4 DISCUSSION

The effectiveness of the program allows to develop and perform EI strategies on oral hygiene and nutrition in geriatric patients, it is observed within 15 and 30 days after surgery biofilm, gingivitis and periodontitis rates improvement, similar results to those reported by some authors.10,11 and literature of oral health Clinic Guidelines for 60-year-old adults reported by Jonsson B, Ohrn K, et al.12

Once someone gets older, the clinical signs of PD are more severe and such rate increases, similar report with authors11. The oral hygiene results in GDP, display a dental biofilm index with "wrong" category and corresponds to 92% according to O'Leary index, Chaves Cortes´ similar results, Madrigal Gutierrez (2009),17 demonstrating that the reduction of the disease decreases the risk factor on tooth loss preventing secondary infections by PD in GDP.

The GDP (1 to 6% of the general population) have hyposalivation or xerostomia. GDP, following dietetics directions and using mouthwash conceived greater salivary flow influx allowing the PD, proper chewing, swallowing food and nutritional improvement. GDP are recommended to consume normal diet with modified texture. Foods that are easy to chew and swallow.18 Data from the literature14 and articles15 pose nutritional problems and mention that inappropriate chewing (periodontal pain) and insalivation modify the pattern of food consumption, swallowing and digestion19. So we agree on the concepts and results.

GDP were found to suffer from oral diseases such as stomatitis, leukoplakia, xerostomia3, dental caries and PD, cause of tooth loss in this age group, with predominantly polymicrobial infection with anaerobic bacterial predominance Negative Gram 20, data and results are consistent with those reported.4,6,11. Not everyone agrees that the younger GDP is, PD gets greater incidence17, and therefore, our results are the opposite.

There is proportional relationship between variables T2 DM - periodontal condition2, consistency of food and oral hygiene. It is necessary to continue increasing community dental care in order to raise the rates of oral health and prevention21 goals to be achieved in the area of health, it was fulfilled throughout the study, patients aged 65-75 with periodontal problems, once the work was done, the 76% of patients got better.

The GDP consume drugs, leading to functional impairment by side effects such as salivary flow decrease increasing iatrogenias, pre and postoperative treatment was clinically observed and agreed on the concepts of Schiller22 (1998).-

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