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Diabetes and periodontal disease

Name : Marwa Ramadan Tahir

Roll No :1155

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Abstract

The relationship between diabetes mellitus and periodontal disease is not clear, even though studied intensively. Like other complications of diabetes, gum disease is linked to diabetic control. People with poor blood sugar control get gum disease more often and more severely, and they lose more teeth than do persons with good control. The study was to clinically evaluate the relationship of diabetes mellitus with periodontal disease and the Results indicated that the prevalence of periodontal disease in diabetic patients was 86.8%. And the aims of study to analysis was used to investigate the relationship between prevalence and severity of periodontal disease and various other factors such as glycemic status, and duration of diabetes mellitus.

Introduction

The periodontal disease is the sixth most common disease in the world. People with diabetes are more likely to experience periodontal disease if they've had poor blood sugar levels for a long period of time and poorly controlled high glucose level in the mouth fluids help the growth of bacteria and can cause gum disease. The diabetes mellitus is a complicated metabolic disorder characterized by hypofunction or lack of function of the beta cells of the islets of langerhans in the pancreas, leading to high blood glucose levels and excretion of sugar in the urine. Diabetes is the commonest among metabolic disorders and its incidence is on the increase all over the world. It affects 2 to 10% of the human population. Periodontal disease has been labeled as the "Sixth Complication" of diabetes. However, there is no unanimity about the exact relationship between diabetes mellitus and occurrence of periodontal disease. Opinions still differ regarding the correlation of diabetes and periodontal disease .The periodontal disease are infection of the gum and bone that hold the teeth place. The periodontal disease include gingivitis (in which the inflammation is confined to the gingiva and is reversible with good oral hygiene) and periodontitis (in which the inflammation extends to result in tissue destruction and alveolar bone resorbtion). Tissue destruction in periodontitis result in breakdown of the collagen fibers of the periodontal ligament resulting in the formation of the periodontal pocket between the gingiva and tooth.

Discussion

In one studies was carried out in multiple hospitals. A total of 1500 patients were selected from Out Patient Department of Periodontics, These patients were diagnosed as having diabetes mellitus and were under treatment. The patients were selected by the following inclusion criteria: (1).Under treatment or had diabetes mellitus diagnosed for at least last one year or more. (2).Not having any other systemic diseases. (3).Not having any history of diabetic complications like neuropathy, nephropathy, retinopathy etc.(4).Not using drugs such as phenytoin, nethidipine etc. (5) .Not undergone any periodontal treatment .

The relevant history was recorded for all the patients. A careful oral examination was carried out with the help of mouth mirror and graduated periodontal probe and Determination of blood glucose levels In all the patients ,Following inferences was drawn from the study: (1).The prevalence of periodontal disease in diabetic patients was 86.8% (gingivitis 27.3% and periodontitis 59.5%) and complete edentulousness was 10.7%. Remaining 2.5% was periodontal healthy. (2) . Glycemic status had a significant effect on the prevalence and severity of periodontal disease. (3) .The number of missing teeth increased with increase in age of the patient and duration of diabetes mellitus, and had the direct correlation with the severity of periodontal disease.

In this study, it can be speculated that poorer the control and longer the duration of diabetes, cause blood Vessel Changes. Thickening of blood vessels is a complication of diabetes that may increase risk for gum disease. Blood vessels deliver oxygen and nourishment to body tissues, including the mouth, and carry away the tissues' waste products. Diabetes causes blood vessels to thicken, which slows the flow of nutrients and the removal of harmful wastes. This can weaken the resistance of gum and bone tissue to infection.. had suggested that hyperglycemia impairs overall cell function, as insulin is required for glucose to enter cells to provide a source of energy. It also decreases PMN cell chemotaxis, phagocytosis and intracellular killing of bacteria. The ability of glycosylated hemoglobin to carry oxygen would be impaired, thereby decreasing tissue oxygenation. Hyperglycemia induces blood flow abnormalities including increased blood viscosity, reduced erythrocyte deformability, and

increased platelet aggregation, which further enhance tissue hypoxia. All these factors result in increased periodontal destruction. And the severity of periodontal disease can be because the high amount of bacteria. Many kinds of bacteria (germs) thrive on sugars, including glucose -- the sugar linked to diabetes. When diabetes is poorly controlled, high glucose levels in mouth fluids may help germs grow and set the stage for gum disease. Also the mobility of teeth because altered collagen metabolism in diabetes can lead to osteopenia and osteoporosis. demonstrated that essentially all the aspects of bone growth and mineralization are diminished in the absence of insulin i.e. hyperglycemia. The vascular changes also increase with increase in blood glucose levels, which leads to loss of teeth in sever cases.

Conclusion

Through this research show that there is no clear relationships between diabetes and periodontal disease research has suggested that the relationship between diabetes and periodontal disease goes both ways - periodontal disease may make it more difficult for people who have diabetes to control their blood sugar and severe periodontal disease can increase blood sugar, contributing to increased periods of time when the body functions with a high blood sugar. This puts people with diabetes at increased risk for diabetic complications.

References

1. ADA -2012-. Diabetes Statistics. American Diabetes Association Web site, <http://www.diabetes.org/diabetes-statistics.jsp>. Google Scholar.
2. Jones JA, Garcia RI, Wehler C, Rich S, Miller D, Rothendler J, et al. -2015-. Recruitment and baseline characteristics: the VA dental diabetes study -VA-DDS- - abstract-. J Dent Res 84-Spec Iss A-:2584 -www.dentalresearch.org-. Google Scholar.
3. -Samaranayake, Lakshman. Essential Microbiology for Dentistry E-Book. Elsevier Health Sciences, 2011.
4. Al-Murbarak S, Ciancio S, Aljada A, Mohanty P, Ross C, Dandona P. Comparative evaluation of adjunctive oral irrigation in diabetics. J Clin Periodontol 2002;29:295–300. Wiley Online Library PubMed Web of Science@Google Scholar .

