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PERIODONTAL STATUS AND DENTAL STATUS IN DIABETIC PATIENTS

D. Madhumathi

Saveetha Dental College, Saveetha University, Chennai - 600077, Tamil Nadu, India.

ABSTRACT: Aim: The aim of the study was to evaluate the dental status of diabetic patients. **Objective:** To evaluate the oral change *viz.*, periodontal status, the status of alveolar bone, gingival status in type-1 and type-2 diabetic patients. **Background:** The term diabetes mellitus describes a group of disorders characterized by an elevated level of glucose in the blood and abnormalities of carbohydrate, fat and protein metabolism. Oral disorders like periodontitis, tooth loss, gingivitis, salivary dysfunction, dental caries, oral mucosal diseases, dental caries and oral infections like candidiasis, taste and other neurosensory orders are associated with diabetes mellitus. **Reason:** Diabetes mellitus is an important health care problem. The oral health care providers can have a significant and positive effect on the oral and general health of patients with diabetes mellitus.

Keywords: Periodontal status, Diabetes mellitus, Blood glucose levels

Correspondence to Author:
D. Madhumathi

Undergraduate Student, Saveetha Dental College, Simats 162 Poonamallee High Road, Chennai - 600077, Tamil Nadu, India.

E-mail: madhumathidevaraj@yahoo.com

INTRODUCTION: The major fuel in our body is insulin which uses glucose for our body needs. Sometimes the body does not make enough insulin, or the insulin does not work the way it should. Glucose then stays in the blood and does not reach the cells. Blood glucose levels get too high (hyperglycemia) and can cause diabetes or prediabetes. Prediabetes is when blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. The term diabetes mellitus is used to identify the disorder which is the elevated level of glucose in the blood. This leads to the deficiency in Insulin secretion which leads to metabolic abnormalities involving Protein, fats and carbohydrates. There are two types of diabetes.

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They are type-1 and type-2. Type-1 diabetes (or) Insulin-dependent diabetes is otherwise called as Juvenile diabetes. This type-1 diabetes is most commonly seen in children and young adults. This diabetes results from the autoimmune destruction of the insulin-producing beta cells in the pancreas. Diabetes mellitus type-1 occurs between 5% and 10% of cases of diabetes [2].

Type-2 diabetes or non-insulin dependent diabetes or adult-onset diabetes. It is characterized by hyperglycemia and the lack of insulin. It is the most common form of diabetes and affecting 90-95% of the people. A type-2 diabetic patient has insulin resistance because their body does not produce enough insulin. Numerous oral disorders are associated with diabetes mellitus. The most common disorder is periodontal disease. It is a due elevation in the blood glucose level which causes gum complications that lead to periodontal disease. Periodontal disease has an increased prevalence in both type-1 and type-2 diabetic patients.

Other oral disorder includes dental caries, tooth loss, gingivitis, and other infections include candidiasis and neurosensory disorders. The relation between diabetes and dental caries is due to the lack of metabolic control, increase in crevicular fluid and increase in salivary glucose and a decrease in salivary flow [1].

Oral signs and symptoms in diabetic patients can, therefore, be an important risk factor of periodontal disease and future diabetic complications. The mechanism of diabetes correlation with periodontitis primarily involves vascular changes, neutrophilic activity, impaired collagen synthesis and genetic predisposition. It is known that diabetes induces vascular changes in all tissues, including capillaries of periodontal structures [3]. Gingival capillaries undergo basal membrane thickening and other changes such as membrane disruption, intramembranous presence of collagen and edematous endothelium may also be observed. These changes have been postulated to impair leukocyte migration, immune factor activities and thus contributing to the progression of periodontitis and tooth loss by disordered microcirculation in diabetes [4].

MATERIALS AND METHODS: A study was conducted in 50 diabetic patients, between the ages group from 30-80 years. Oral clinical examination was done with instruments (mouth mirror, dental probe). The study involves the detection of decay, erosion, extraction, motility (dental status) in diabetic patients. This data collection also includes age, gender, blood glucose level and alcohol status. The study was conducted based on two groups. Group-1 includes the patients between 30-50 years and group-2 includes the patients between 50-80 years. After collecting the data, the correlation was done between gender and dental status.

Inclusion Criteria: Diabetic patients with age from 30-80 years.

Exclusion Criteria: Patients with other systemic disorders.

RESULTS: In group-1 patients the dental status includes decay 40%, erosion 20%, extraction 40% and mobility 30%. In group-2 patients decay 40%, erosion 0%, extraction 0% and mobility 20% which are reported in the **Table 1**.

TABLE 1: DENTAL STATUS OF PATEINTS

	Dental Status									
	Gender		Decay		Erosion		Extraction		Mobility	
	M	F	Pre	Abs	Pre	Abs	Pre	Abs	Pre	Abs
Group-1 (30-50 Yrs)	60%	40%	40%	60%	20%	80%	40%	60%	30%	70%
Group-2 (50-80 Yrs)	26.7%	73.3%	40%	60%	0%	100%	0%	100%	20%	80%

Overall calculation explains that diabetic patients are more prone to decay and extraction which are depicted in **Graph 1**.

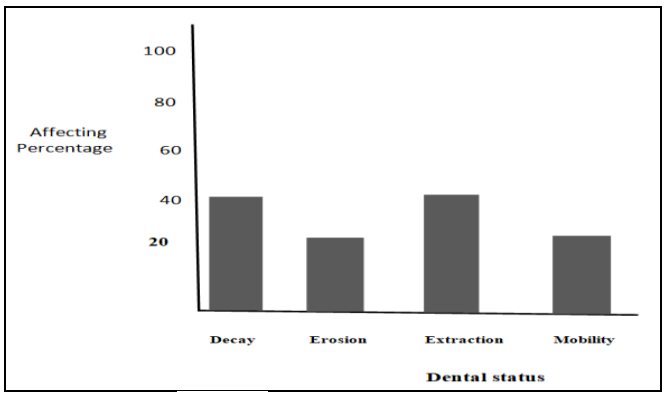

FIG. 1: DENTAL STATUS

DISCUSSION: Several researchers have calculated oral complications in diabetic patients. In this study, the percentage of decay, erosion, extraction and mobility in diabetic patients has been calculated. Periodontal disease involves the apical migration of the junction all epithelium, destruction of the connective tissue attachment, bone loss and simultaneously the loss of affected teeth. This process initiates with the presence of a dental plaque biofilm and with the signs of gingivitis. Several studies have reported that periodontal therapy results in improved glycemic control in some individuals with diabetes [2]. In this present study decay and extraction has a major role in diabetic patients.

Several studies have shown results for periodontal status in diabetic patients. But the present study has results for dental status like decay, erosion, extraction, mobility levels in diabetic patients.

The participants in this study not only the diabetic patients but also the smokers and alcoholics are also involved. As a result of this study 40% of the diabetic patients have done the extraction and 40% of the patients are prone to decay and then 20% of the patients have mobile tooth and then 20% of the patients are affected by erosion.

CONCLUSION: As a result of this study, diabetic patients are more prone to decay and extraction. Diabetes mellitus increases the risk factor for periodontal disease. Diabetes mellitus affects negatively the periodontal health leading to gingivitis, periodontitis and tooth loss [5].

Diabetic patients should be instructed in oral hygiene measures and they should know the importance of routine dental check-ups.

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CONFLICTS OF INTEREST: Nil

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