

**PREVALENCE OF PERIODONTITIS AMONG TYPE 2 DIABETIC PATIENTS IN
NORTHERN INDIA: AN ORIGINAL RESEARCH****Dr. Sumanta Kumar Kolay¹, Dr. Meena Thiyam*² and Dr. Mobeen Khan³**¹Associate Professor, Department of Dentistry, Darbhanga Medical College, Laheriasrai, Darbhanga.²BDS (Dental Surgeon).³Senior Lecturer, Department of Oral Medicine and Radiology, Chandra Dental College & Hospital Barabanki, Uttar Pradesh.***Corresponding Author: Dr. Meena Thiyam**

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ABSTRACT

Aim: Prevalence of periodontitis among type 2 diabetic patients. **Material and Methods:** The present study was carried out in Northern Indian Population. Total of 1000 Patients (700 males and 300 females) satisfying the inclusion criteria were selected of the study. **Results:** Out of 1000 patients, 700 (70%) were male patients and 300 (30%) were female patients. Out of 1000 patients 804 (80.4%) patients were diagnosed with periodontitis and 196 (19.6%) patients were not diagnosed with periodontitis. **Conclusion:** People with type 2 diabetes must be considered at risk for periodontitis and people with diabetes should be informed of this risk.

KEYWORDS: Type 2 Diabetes; Periodontitis.**INTRODUCTION**

Periodontal diseases are one of the more prevalent oral diseases affecting more than 50% of Indian community. Untreated chronic periodontitis is responsible for tooth loss in majority of the cases. Constant presence of chronic inflammation and inflammatory mediators has also been proved to be a significant risk factor of systemic disease like diabetes mellitus (DM).^[1]

Epidemiological research indicates that periodontal diseases are widespread Throughout the world and evidence exists to show that their extent and severity increases with age². This view of a particularly high prevalence of periodontal diseases appears to have originated from early epidemiological studies using an index system that gave weight to gingivitis and moderate periodontitis resulting from poor oral hygiene and calculus deposition.^[3]

India leads the world today with the largest number of diabetics in any given country. In the 1970s, the prevalence of diabetes mellitus among urban Indians was reported to be 2.1%, and this has now risen to 12.1%. According to the World Health Organization (WHO) projections, the present 30 million to 33 million diabetics in India will go up to 74 million by 2025. The World Health Organization (WHO) has issued a warning that India will be the "Diabetes mellitus capital of the world".^[4]

METHODS AND MATERIALS

The present study was carried out in Northern Indian Population. Total of 1000 Patients (700 males and 300 females) satisfying the inclusion criteria were selected of the study.

The inclusion criteria were

- 1) Type-2 Diabetes,
- 2) Presence of ≥ 6 teeth,
- 3) Aged between 20 – 85 years.

The exclusion criteria were

- 1) Patients with Type 1 Diabetes,
- 2) Patients on prophylactic antibiotics,
- 3) Pregnant and lactating female.

An informed written consent was obtained from all the participants. All relevant history was obtained. The HbA1C levels were obtained from the laboratory reports. The depth of the periodontal pocket was assessed using a periodontal probe (William's probe). Diagnosis of Type 2 DM was based on the American Diabetes Association⁵ criteria and clinical history as follows:

- 1) FBS ≥ 126 mg/dl on 2 determinations,
- 2) Symptoms of hyperglycemia and RBS ≥ 200 mg/dl,
- 3) 2-hour plasma glucose ≥ 200 mg/dl after a 75 grams oral glucose tolerance test (performed as described by the World Health Organization),
- 4) On oral hypoglycemic agents.

As proposed by the American Academy of Periodontology, patients with loss of tooth attachment by at least greater than 2mm were considered as having Periodontitis.^[6] The individuals were classified according to severity of periodontitis using the following criteria.^[7]

Advanced periodontitis: 1) two or more teeth (or 30% or more of the teeth examined) having ≥ 5 mm probing depth, or 2) four or more teeth (or 60% or more of the teeth examined) having ≥ 4 mm probing depth, or 3) one or more posterior teeth with grade II furcation involvement.

Moderate Periodontitis: 1) one or more teeth with ≥ 5 mm probing depth or 2) two or more teeth (or 30% or more of the teeth examined) having ≥ 4 mm probing depth, or 3) one or more posterior teeth with grade I furcation involvement and accompanied with ≥ 3 mm probing depth.

Mild Periodontitis: 1) one or more teeth with ≥ 3 mm probing depth or 2) one or more posterior teeth with grade I furcation involvement.

No Periodontitis: persons with 6 or more teeth present who did not fulfill any of the above criteria.

Categoric variables were summarized as percentages. The data thus collected was subjected to statistical analysis.

RESULTS

Out of 1000 patients, 700 (70%) were male patients and 300 (30%) were female patients. Out of 1000 patients 804 (80.4%) patients were diagnosed with periodontitis and 196 (19.6%) patients were not diagnosed with periodontitis. Out of 804 patients 505 (62.81%) were found with mild periodontitis, 213 (26.49%) were found with moderate periodontitis and 96 (11.94%) were found with advanced periodontitis.

Table no. 1: Gender wise division of patients.

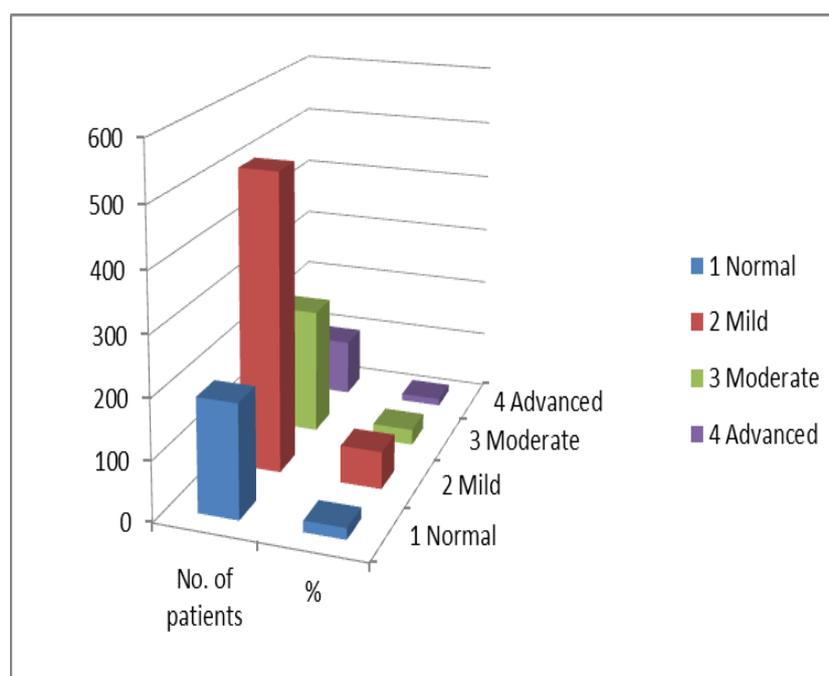
Total number of patents	Male patients	Female patients
1000	700	300

Table No. 2: Periodontitis according to severity.

S. No.	Severity of periodontitis	No. of patients	%
1	Normal	190	19.0
2	Mild	505	62.81
3	Moderate	213	26.49
4	Advanced	96	11.94

Table no. 3: Distribution of Periodontitis in Diabetic Patients.

Total no. Diabetic patients	With Periodontitis	Without Periodontitis
1000	804	196



Graph No. 1: Periodontitis according to severity.

DISCUSSION

Diabetes mellitus (DM) is a systemic disease with several major complications affecting both the quality and the length of life. Diabetes mellitus is certain to be one of the most challenging health problems in the 21st century. It is now one of the most common non-communicable diseases globally. Diabetes mellitus is the fourth leading cause of death in most developed countries and there is substantial evidence that it is epidemic in many developing and newly industrial nations.^[8]

A study conducted by Khamrco from Ninevah, Northern Iraq, showed that periodontal disease was seen in 87.5% of persons.^[9]

Another study conducted by Hussain et al. showed in the Eastern Mediterranean Region, in Lebanon, the prevalence of periodontal disease reaches as much as 94.5%¹⁰. In our study out of 1000 patients 804 (80.4%) patients were diagnosed with periodontitis and 196 (19.6%) patients were not diagnosed with periodontitis. Our study has some limitations. We have not included loosening of teeth and gingival recession as diagnostic criteria for periodontitis. We have also not included smoking and other systemic diseases.

CONCLUSION

With increasing prevalence of type 2 diabetes in India, patients with diabetes should be screened for periodontitis and other periodontal disorders. Complete knowledge of systemic disorders is very important for management of oral complication of systemic disorders. Regular oral and maxillofacial check-up can play important role in early diagnosis and can help in the treatment.

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