

## PREVALANCE AND THE SEVERITY RATE OF PERIODONTAL DISEASE IN TYPE2 DIABETIC PATIENTS AMONG CHENNAI POPULATION.

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### ABSTRACT

The objective of the study is to compare the prevalence and the severity rate of periodontal disease among type2 diabetic patients and non diabetic patients among Chennai population. Study population comprised of a total of 50 subjects divided into two groups of each 25 subjects with age group of 35 years 50 years and with atleast 20 teeth was included in the study. Population with systemic disease other than diabetic mellitus is excluded in the study. After obtaining the thorough medical history, oral habits and personal habits both the study groups were examined clinically. Periodontal status of both diabetic and non diabetic patients are examined clinically by using CPI Probe and recorded based on Community periodontal Index [CPI] & LOA. The obtained values were tabulated and statistically analyzed. Chi square test was used to study association between CPI and diabetic status Mann-Whitney test was done to study association between LOA and diabetic mellitus. The prevalence and the severity rate is higher in type2 diabetic mellitus when compared to non diabetic individuals that was statistically significant [0.05] both the CPI and LOA score was high in type2 diabetic patients compared with non diabetic.

**Key words:** systemic, periodontal disease, diabetic mellitus, Community periodontal index, Chi square test.

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## INTRODUCTION

Diabetes mellitus is a metabolic disease in which there is high blood sugar level over prolonged period. It is classified in to 2 types based on the secretion & action of insulin as type1 & type2 diabetes mellitus. Type1 DM (insulin dependent (or) juvenile) results from the failure of pancreatic beta cells to produce insulin thus there is lack of insulin level. Type2 DM (non-insulin dependent) results when the beta cells are resistant to insulin. There are many systemic complications associated with diabetes mellitus such as ketoacidosis, non ketotic hyperosmolar coma, heart disease, stroke, kidney failure, damage to eyes etc. One of the most common oral complications is periodontitis. Periodontal blood vessel thickens and increases the risk of gum disease by reducing the nutrient supply and removal of harmful waste elimination, leukocyte migration, and diffusion of immune factors. One of the pathologic factors attributed to an increase in the number of blood vessels in the gingival connective tissues is the elevated levels of cytokines in the diabetic patients Penmetsa GS *et al.*[1] The risk factors of periodontitis are high poorly controlled diabetes patients when compared to well controlled diabetes patients. Various studies by Khader YS *et al*, Mealey BL *et al*. Epidemiological studies [2, 3] have found a high degree of association between DM and periodontal disease which were proposed as sixth complications of

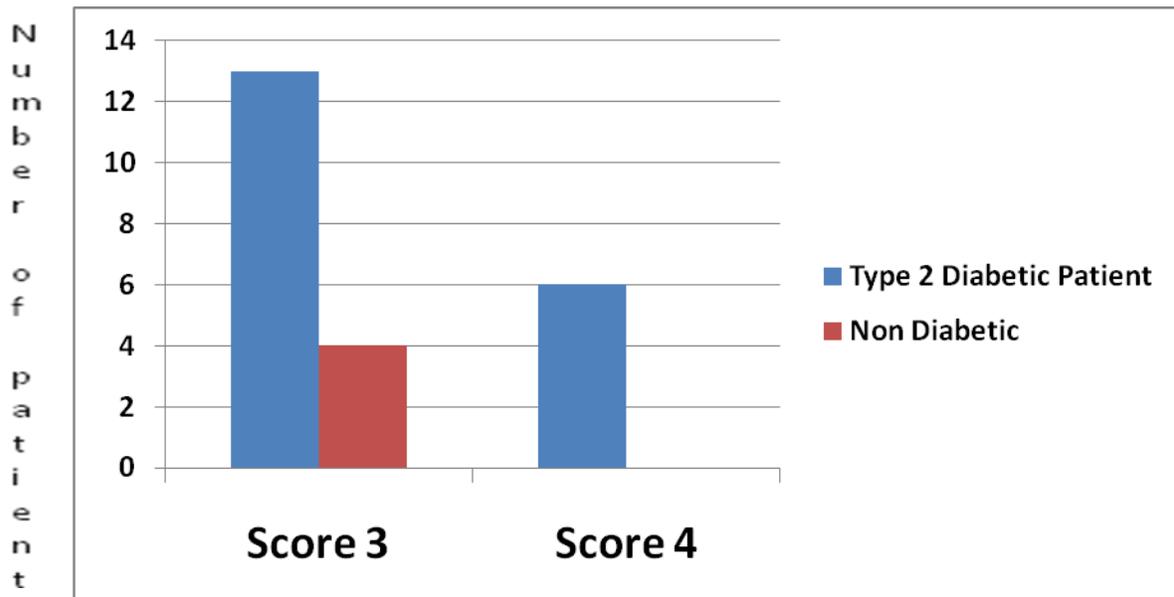
Diabetic mellitus Loe H *et al.*[4] The study was to check the severity rate of periodontal disease of type2 diabetic patients among Chennai population of age group 35 -50 years. Aim of the study is to find the rate and severity of periodontal status among type 2 diabetic mellitus patients.

## MATERIALS AND METHODS

The study was conducted at the outpatient department of Sathyabama General Hospital after the ethical clearance from Institutional Review Board .The study population of 25 non-diabetic and 25 diabetic patients of age group 35-50 years were included in the study. The population with systemic diseases other than diabetic mellitus and those who having smoking, tobacco chewing and alcoholic habits where excluded from the study. Six investigators examined the patients. After obtaining the thorough medical reports – both fasting and +random blood sugar level reports . Periodontal status of both the study groups were examined clinically and recorded based Community Periodontal Index jukka ainamo, David Barmes, George Beagrie, Terry Cutress -1982 The obtained values are entered in the excel sheet and statistical analysis were done using SPSS version 16. Chi-square test is used to study the association between the LOA and Diabetic status. Similarly, Mann-Whitney test is used to study the relationship between CPI score and diabetic status.

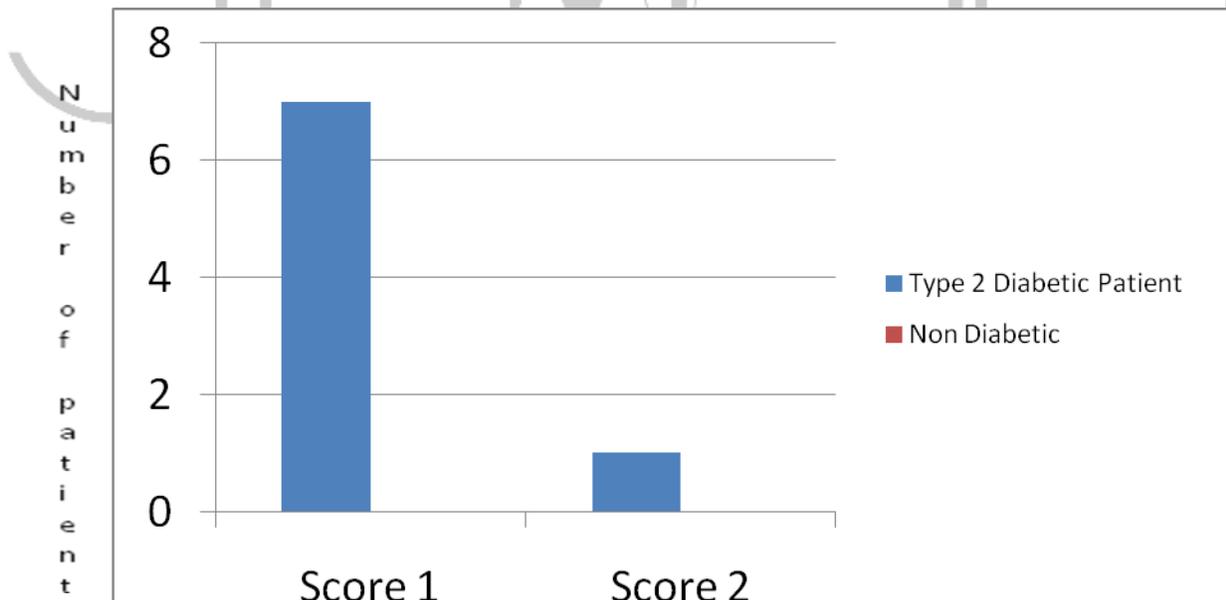
RESULT

Fig. 1 CPI Score



From the above chart, we observe that CPI score is slightly higher in type2 diabetic mellitus when compared to non diabetic individuals.

Fig. 2 LOA Score



From the above chart, we observe that LOA score is slightly higher in type2 diabetic mellitus when compared to non diabetic individuals.[1]

## DISCUSSION

This study was under taken to assess the periodontal disease among type2 diabetic patients and non diabetic in Chennai population. A total of 25 type2 diabetic patients and 25 non diabetic individuals have been examined and results were tabulated and analyzed statistically. CPI and LOA was used for assessment of periodontal status. The CPI and LOA score was higher in diabetic patients when compared with non diabetic individuals and was statistically significant(0.05). Similar study by Apoorva SM *et al* has consolidated that type2 diabetes mellitus subjects manifested relatively higher prevalence and severity of periodontal disease as compared with non diabetic individual. Another study by Toshiko Ohtake *et al* also resulted 94% of diabetic patients have periodontal pockets over 4mm (score3 and 4), compared to 56% in controls . Similarly study by Patil VA *et al* type2 diabetic mellitus subjects manifested relatively higher prevalence and severity of periodontal disease as compared to non-diabetic. Similarly study by Vinay Kr Gupta *et al* also resulted strong association was found between diabetes and periodontal health. Prevalence and severity of periodontal disease in type2 diabetic patient is higher when compared to non-diabetic. Also, loss of attachment is proved to

be elevated in type2 diabetic patients by the chi-square test. The oral hygiene has to be maintained in order to overcome the prevalence of periodontitis. The general practitioners also should create awareness about the changes in the periodontium and measures to overcome the complications among the diabetic patients.

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