**Relationship between type 2 diabetes and periodontal disease**

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**ABSTRACT**

**Purpose:** To assess periodontal status in type 2 diabetes (T2D) to compare the findings between diabetic and non-diabetic individuals using Community Periodontal Index (CPI) and Oral Hygiene Index (OHI). Associations between glycemic control and inflammatory biomarkers were analyzed among T2D patients in comparison with controls.

**Materials and methods:** A total of 135 patients with T2DM (64/71) and 40 healthy controls (CG) (21/19) individuals were assessed. Periodontal status was assessed using CPI, OHI and tooth number. Blood samples were analyzed for glycemic control markers (FPG and HbA1c), inflammatory mediators (CRP, TNF-α, IL-1) and lipids (TG, TC, HDL, LDL). Study participants with T2D were classified into 2 groups according to their level of HbA1c: good metabolic control group (GMC) had HbA1c below 7.0% and poor metabolic control group (PMC) had HbA1c above 7.0%.

**Results:** The prevalence of periodontitis in all patients with T2D was 83.5%, 82.7% in GMC group, and 86.4% in PMC group as compared to CG 57.7%. The number of sextants with CPI codes of 3 was higher in PMC T2D as compared to controls. We observed significant positive correlation between OHI and: age (R=0.566, p<0.001), creatinine concentrations (R=0.377, p<0.01), tooth number (R=0.841, p<0.01), CPI3 (R=0.518, p<0.01) and CPI4 (R=0.498; p<0.001). Negative correlation (R=-0.388; p<0.01) between OHI and IL-1 concentrations and number of sextants with CPI1 was found.

**Conclusion:** The study indicated that type 2 diabetic subjects should improve their oral hygiene practices and that the control of blood glucose levels ought to be emphasized.

**Key words:** Type 2 diabetes, hyperglycemia, periodontitis, Community Periodontal Index, Oral Hygiene Index