

Comparison of Salivary pH in patients with a prevalence of periodontitis with and without type 2 diabetes

INTRODUCTION:

Diabetes mellitus (DM) is a common chronic metabolic disease that affect millions of people in Pakistan from the age of 20-79.

- There are three types of diabetes. Type 1, type 2, and gestational diabetes.
- Type 1 diabetes is found in youngsters mainly, and they need insulin on daily basis to stay alive. Type 2 diabetes is often found in middle aged people due to lack of tissues responding to metabolic effects of insulin. Whereas, gestational diabetes is developed in pregnancy, and end afterwards.
- Diabetic patients have numeral oral manifestations. People from diabetes also suffer from hypo salivation .



AIM



The aim of the study was to determine the relationship between salivary pH and periodontitis among patients with diabetes mellitus, and those without it.

METHODOLOGY:

Study setting

All patients were recruited for this investigation at Islamic International Dental Hospital, G-7/4 Islamabad.

Study population

50 (Diabetes & Periodontitis)
50 (Normal)
50 (Periodontitis)
Total= 50+50+50 = 150

Sample Size

Sample size of 150 was finalised, and a convenience sampling technique was used.

Study Design

A cohort study design.

Data Analysis

The data was collected between months of September 2019 to February 2020.

LIMITATIONS

- We had to rely on patients to provide accurate information which is not always as truthful as stated by the patient.
- We did not consider medications as a confounding variable.
- Certain medications can disturb salivary pH. Using an electronic pH meter would have produced more accurate results.

DISCUSSIONS:

- There are two mechanisms by which salivary pH is maintained. Firstly, the salivary amylase that digests carbohydrates produces acid as a by product. Secondly, the buffering capacity of saliva balances the acidity from bacterial action. If either one is disturbed, salivary pH can no longer be optimal.
- In diabetic patients, a prolonged increase in blood glucose level leads to high levels of aggregated irreversibly glycated proteins called Advanced glycation end protein (AGE's) in the periodontal ligament.
- Therefore, a diabetic patient suffers from compromised wound healing, and increased periodontal tissue destruction.
- Diabetes is found to have diverse oral manifestations including salivary, and taste dysfunction, fungal infection, bacterial infections, xerostomia and poor wound healing.

CONCLUSION:

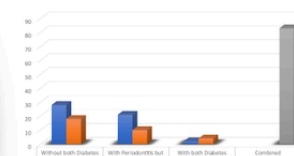
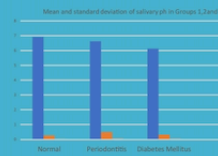
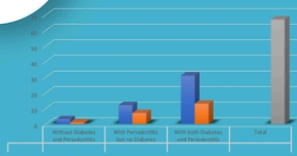
Our study concludes that the salivary pH of patients with DM, and periodontitis is lower than that of the control group. The difference in mean pH value between Group1, Group2, and Group3 was statistically significant (P<0.05).

Take home message:

"You need a good honest relationship with health care."

RESULTS:

- Mean value of salivary pH scores were taken individually for each group, and the data for all values was analysed using One-way Anova.
- Group1, Group2, and Group3 was highly significant (P<0.05).



Supervisor: Dr. Sobia Bostan

Authors: Muhammad Sarmad Mohyuddin, Fahim Sarwar, Hassan Ahmad, Hamza Baig, Affan Ejaz.

References:

- C. Seethalakshmi RCJR, [...], and S. Prabhu. Correlation of Salivary pH, Incidence of Dental Caries and Periodontal Status in Diabetes Mellitus Patients: A Cross-sectional Study. 2016 March;10(3):12-4.

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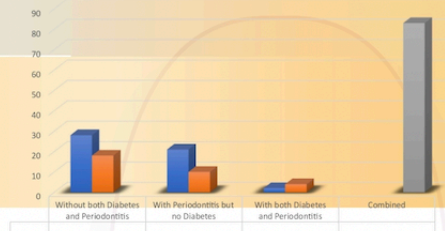
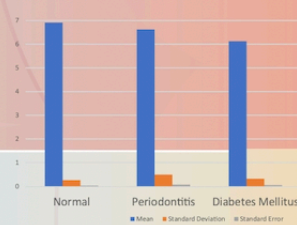


RESULTS:

•Mean value of salivary pH scores were taken individually for each group, and the data for all values was analysed using One-way Anova.

•Group1, Group2, and Group3 was highly significant ($P < 0.05$).

Mean and standard deviation of salivary pH in Groups 1,2 and 3



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