

*Periodontal health status and Biochemical
study of saliva and Gingival Crevicular
fluid among Diabetics and non Diabetics
(Comparative study)*

*A thesis submitted to the council
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Abstract

Diabetes mellitus is a common disorder that will be encountered by every practicing dentist. There are many causes responsible for the different changes observed in diabetic patients. The main causes are the elevated plasma glucose with the production of advanced glycation end products.

The aim of this study was to determine if a correlation exists between glucose content of GCF, saliva and blood in diabetics and non diabetics group and to determine the relative influence of diabetes mellitus on periodontal parameters and tooth loss.

Total samples composed of 105 participants. Group I composed from 35 healthy subjects, group II composed from 35 patients were well controlled diabetics and group III composed from 35 patients were moderately and poorly controlled diabetics.

All periodontal parameters were recorded for all teeth except the third molar which was excluded while the gingival fluid flow was recorded for buccal site for the teeth 13, 43.

Whole saliva samples were collected, the collected saliva was centrifuged then the centrifuged clear supernatant saliva kept frozen and stored until glucose and total protein determination. For sampling gingival fluid, strips of filter paper were gently inserted in to the selected crevice of 4 teeth; each filter strip was placed in distilled water, and centrifuged. The supernatant was used for assessment of glucose and total protein. For data analysis both descriptive and inferential statistics were used

The result obtained were significantly higher HbA1c was in diabetics groups compared to control group. The mean of glucose in

saliva was higher in group II (1.769 ± 0.972) and in group III (4.054 ± 2.851) in compare to group I (0.993 ± 0.331) Also the mean for the glucose in gingival fluid the highest mean in group III, it was 9.972 ± 4.218 and lowest one in group I it was 3.34 ± 1.612 while in group II it was 5.83 ± 2.7 . Inter-group comparison for PLI showed that there was a significant difference between group I and group II, while there was a non significant difference between group II and group III at p-values > 0.05 .

The mean of gingival index in groups II and III were elevated compared with group I it was 1.503,1.858 while in group I it was 1.346.

Correlation between glucose in saliva and fasting blood sugar was highly significant at p- values <0.0001 with strong correlation in all groups, while correlation between glucose in saliva and HbA1c was highly significant at p-values < 0.0001 with weak correlation in all groups.

In conclusion diabetic groups show significant and highly significant difference in periodontal parameter and tooth loss compared to control group with significant difference between group II and group III. Significant increase in saliva and gingival fluid glucose, total protein in diabetics groups compared with control group with strong correlation between saliva glucose and fasting blood sugar and weak correlation between saliva glucose and HbA1c.

There was weak correlation between clinical periodontal parameters and biochemical parameters at p-values >0.05 .