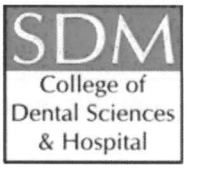
ASSESSMENT OF CREVICULAR VISFATIN LEVELS IN HEALTH AND IN PERIODONTALLY DISEASED SUBJECTS WITH OR WITHOUT TYPE 2 DIABETES MELLITUS BEFORE AND AFTER NON SURGICAL PERIODONTAL THERAPY - A CLINICO BIOCHEMICAL STUDY.



By

Dr. Vandita Mishra

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Under the guidance of

Dr. Leena Shettar

Professor

Department of Periodontics and Oral Implantology

S.D.M. College of Dental Sciences & Hospital.

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ABSTRACT

BACKGROUND: Visfatin, previously characterized as pre-B-cell colony enhancing factor, has been proven to be associated with both, local and systemic, inflammatory conditions. A direct correlation of visfatin levels with type 2 diabetes mellitus has been established with a suspected insulin like action. Also, evaluation of visfatin in gingival crevicular fluid of periodontally diseased individuals has shown elevated levels. Thus the aim of this clinico-biochemical study was to estimate and compare the levels of visfatin in the gingival crevicular fluid in health at baseline and at the end of 30 days to record any changes, and in subjects with chronic periodontitis with or without type 2 diabetes mellitus before and 30 days after scaling and root planing.

MATERIALS AND METHODS: Forty two subjects (30-65 years) participated in this longitudinal study and were divided into three groups of 14 subjects each as follows - group 1: healthy subjects, group 2: systemically healthy subjects with chronic periodontitis, group 3: subjects with chronic periodontitis, having controlled diabetes mellitus as determined by their HbA1c scores. Gingival index (GI) and plaque index (PI) scores, and probing pocket depths (PPD) were recorded at baseline and at the 30 days follow up period without any treatment for group 1, while 30 days after scaling and root planing for group 2 and 3 subjects. Three µl of gingival crevicular fluid was collected at both the visits in all groups and analyzed for visfatin levels using an enzyme linked immunosorbent assay (ELISA).

RESULTS: Visfatin was detected in the GCF of all subjects. The mean visfatin levels (ng/ml) for group 1, group 2, and group 3 were 13.32 ± 5.47, 24.55 ± 7.91, and 22.89 ± 11.72 respectively. A statistically significant difference was observed when GCF

visfatin levels from group 1 was compared to group 2 (p=0.0093) and group 3 (p=0.0341) and also when group 2 was compared to group 3 (p=0.0032). A significant difference after scaling and root planing was observed in visfatin levels of group 2 and group 3. However no significant difference in the visfatin levels was seen in group 1 at the follow up visit. Correlation analysis showed a positive correlation between GCF visfatin levels and GI, PI, PPD and HbA1C when all the samples were grouped and analyzed together.

CONCLUSIONS: Visfatin is detectable in GCF. Visfatin concentration correlate directly with the disease activity and severity of chronic periodontitis as well as the glycemic state of individuals with type 2 diabetes mellitus. And also the levels of visfatin in GCF respond to reduction in inflammation as demonstrated after non-surgical periodontal therapy. This suggests that visfatin may play a role in the etiopathogenesis of periodontitis as well as type 2 diabetes mellitus

KEYWORDS: Visfatin, periodontitis; type 2 diabetes mellitus; GCF; gingival index; plaque index, probing pocket depth; glycated hemoglobin