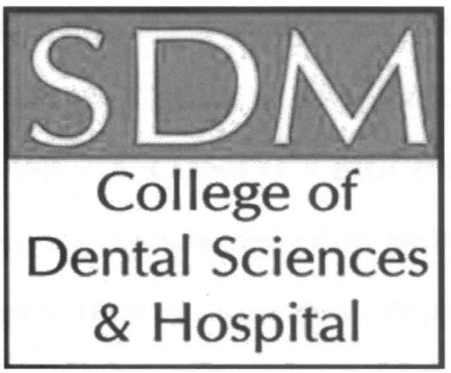
EVALUATION OF TREFOIL FACTOR 3 IN GINGIVAL CREVICULAR FLUID IN PERIODONTAL HEALTH AND DISEASE : A CLINICO - BIOCHEMICAL STUDY



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ABSTRACT

Background and Objectives: Trefoil factors are secreted molecules mostly derived from mucin producing epithelial cells of the gastrointestinal tract and other tissues such as salivary glands, ducts and oral mucosa. They are involved in cytoprotection against tissue damage and immune response. Altered expression of trefoil factor 3 (TFF 3) in saliva and gingival tissue is noted in patients with chronic periodontitis. The objective of this study was to determine whether TFF 3 is expressed in GCF and whether its expression is altered in periodontal pathology and after treatment.

Materials & methods: Fifty subjects (25-55years) participated in this longitudinal study and were divided into two groups of 25 subjects each as follows: group 1(G1) - healthy subjects and group 2 (G2) – systemically healthy subjects with chronic periodontitis. Gingival index (GI) and plaque index (PI) scores and probing pocket depth (PPD) were recorded at baseline and at the 30 days follow up period without any treatment for G1, while 30 days after scaling and root planing for G2. Three µl of gingival crevicular fluid (GCF) was collected at baseline for both the groups and post treatment after 30 days for G2 and analyzed for TFF 3 levels using an Enzyme linked sorbent assay (ELISA).

Results: TFF 3 was detected in the GCF of all subjects. The mean TFF 3 levels for group 1 and group 2 were 30.12 ± 2.20 and 5.95 ± 1.10 (ng/ml) respectively. A statistically significant difference was observed when GCF TFF 3 levels of group 1 were compared to group 2. ($p = 0.0001$) A significant difference after scaling and root planing in TFF 3 levels of group 2. ($p = 0.0001$). Correlation analysis showed a negative correlation between GCF TFF 3 levels and GI, PI and PPD when all the samples were grouped and analyzed together.

Conclusion: TFF 3 is detectable in GCF. Altered expression of TFF 3 in GCF was detected in patients with chronic periodontitis. TFF 3 concentration negatively correlated with the

disease activity. Also, the levels of TFF 3 in GCF responded to reduction in inflammation as demonstrated after non - surgical periodontal therapy. This suggests that TFF 3 has a role in maintaining the integrity of periodontal tissues and may promote the healing process.

Keywords: Trefoil factor 3, chronic periodontitis, GCF, ELISA.