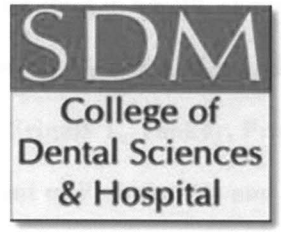
AN ESTIMATION AND COMPARISON OF THE LEVELS OF RESISTIN IN THE GINGIVAL CREVICULAR FLUID IN HEALTH, CHRONIC PERIODONTITIS AND TYPE 2 DIABETES MELLITUS. - A CLINICO-BIOCHEMICAL STUDY.



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ABSTRACT

Background and Objectives: Resistin, a cysteine rich molecule, has been proven to be associated with both, local and systemic, inflammatory conditions. A direct correlation of resistin levels with type 2 diabetes mellitus has been established with a suspected role in insulin resistance. The aim of this clinico-biochemical study was to estimate and compare the levels of resistin in the gingival crevicular fluid (GCF) in health, chronic periodontitis and type 2 diabetes mellitus.

Materials & Methods: Sixty subjects (> 35 years) participated in this cross sectional study and were divided into four groups of 15 each based on their gingival index (GI) scores, probing pocket depths (PPD), random blood sugar levels (RBS) and glycated hemoglobin levels (HbA1C) as follows - group 1: healthy subjects, group 2: subjects with chronic periodontitis, group 3: subjects with diabetes mellitus and, group 4: subjects with diabetes mellitus and chronic periodontitis. Four µl of gingival crevicular fluid was collect and analyzed for resistin levels using an enzyme linked immunosorbent assay (ELISA).

Results: Resistin was detected in the GCF of all subjects. The mean resistin levels (ng/ml) for group 1, group 2, group 3 and group 4 was 13.32 ± 5.47, 24.55 ± 7.91, 22.89 ± 11.72 and 37.02 ± 10.94 respectively. A statistically significant difference was observed when GCF resistin levels from group 1 was compared to group 2 ($p=0.0093$), group 3 ($p=0.0341$) and group 4 ($p=0.0002$); when group 2 was compared to group 4 ($p=0.0032$); and when group 3 was compared to group 4 ($p=0.0008$). Correlation analysis showed a positive correlation between GCF resistin levels and GI, PPD, RBS and HbA1C when all the samples were grouped and analyzed together.

Conclusion: Resistin is detectable in GCF. Resistin 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. This suggests that resistin may play a role in the etiopathogenesis of periodontitis as well as type 2 diabetes mellitus.

Key words: Resistin, periodontitis; type 2 diabetes mellitus; GCF; gingival index; probing pocket depth; random blood sugar; glycated hemoglobin.