EVALUATION OF SERUM AND SALIVARY LEPTIN CONCENTRATIONS IN PERIODONTALLY HEALTHY AND CHRONIC PERIODONTITIS INDIVIDUALS BEFORE AND AFTER NON SURGICAL PERIODONTAL THERAPY

ABSTRACT

Background: Periodontitis, a chronic inflammatory disease is initiated by microbes but progressed by host inflammatory response. Leptin, 16 kDa non glycosylated peptide hormone is related to IL-6 cytokine family. Leptin orchestrates the host response to infectious and inflammatory stimuli, enhancing the proinflammatory cytokine production, leading to breakdown of periodontium. Hence the concentrations of salivary and serum leptin will be assessed in this study. The aim of the present study is to compare the salivary and serum leptin concentrations between healthy individuals and chronic periodontitis patients and to evaluate the effect of non surgical periodontal therapy on serum and salivary concentrations of leptin in patients with chronic periodontitis.

Materials and Methods: A total of sixty individuals with normal BMI (30 healthy individuals and 30 chronic periodontitis patients) were enrolled in the study. Clinical parameters like Plaque Index (PI), Gingival index (GI), Gingival Bleeding Index (GBI), Probing Depth (PD) and Clinical Attachment Loss (CAL) were recorded. Saliva and serum samples were collected to evaluate the concentrations of leptin which is the biochemical parameter, using enzyme linked immunosorbent assay. Both the clinical and biochemical parameters were assessed at baseline and after three months of nonsurgical periodontal therapy (NSPT).
Results: The results showed significant improvement in all the clinical parameters after 3 months of nonsurgical periodontal therapy. The serum leptin levels were significantly higher in patients with chronic periodontitis (288.263±64.7439 pg/ml) than healthy individuals (26.412±8.6102 pg/ml) at baseline but significantly decreased to 77.330± 7.1509 pg/ml after three months of NSPT. The salivary leptin levels were significantly higher in healthy individuals (10.450± 3.9180 pg/ml) than patients with chronic periodontitis (3.153± .2058 pg/ml) at baseline but significantly elevated to 10.897± 3.6653 pg/ml after three months of NSPT. In addition, the results reflected a significant negative correlation of salivary leptin and a positive correlation of serum leptin with probing depth and clinical attachment loss.

Conclusion: The results showed that the altered salivary and serum leptin concentrations in chronic periodontitis can be restored to health after nonsurgical periodontal therapy. Thus the study concludes that leptin serves as a biomarker to provide insight beyond the classic clinical and radiographic findings of the disease.

Keywords: (Leptin, saliva, serum, chronic periodontitis, non surgical periodontal therapy)