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Thesis Title	A Comparative Study on Serum Adiponectin and Leptin levels in Periodontitis Patients with and without Diabetes Mellitus Type2		
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Abstract	<p>*Periodontal diseases are initiated by microbial plaque, which accumulates in the sulcular region and induces an inflammatory response. Recently, studies found that periodontitis might be related to several systemic diseases especially diabetes mellitus. In recent years, there has been intense interest in the role of the adipose tissue derived substances that named adipokines in the inflammatory diseases of the human being including the inflammatory periodontitis. This study was performed to evaluate the serum level of leptin and adiponectin in periodontitis patients with and without type 2 diabetes mellitus (T2DM), to determine the association between serum level of the biochemical markers (leptin and adiponectin) with clinical periodontal parameters, and to investigate the correlation between leptin and adiponectin.</p> <p>* Sixty subjects with periodontitis consist of (30 periodontitis patients and 30 periodontitis+T2DM patients) their ages range from 32-64 years and 25 apparently healthy volunteers their ages and sexes were matched with the patients were participated in this study. Periodontal parameters used in this study were plaque index, gingival index, probing pocket depth, clinical attachment level and bleeding on probing. Blood samples were collected from all patients and controls, and then serum was separated from blood to estimate the levels of leptin and adiponectin by enzyme-linked immunosorbent assay.</p> <p>* The present data revealed a significant elevation ($p < 0.01$) in mean serum level of leptin in periodontitis group and periodontitis+T2DM group (25.89 ± 5.52 ng/ml and 32.16 ± 7.78 ng/ml, respectively) in comparison to that in healthy control (16.66 ± 3.93 ng/ml) moreover, the comparison between two groups of patients showed that the mean level of leptin was increase in periodontitis+T2DM group but statistically not significant ($p > 0.05$). On the other hand, there is a significant decrease ($p < 0.001$) in mean serum level of adiponectin in both patients groups (60.08 ± 9.61 ng/ml and 50.10 ± 7.64 ng/ml, respectively) when compared to control group (77.57 ± 10.80 ng/ml), additionally, there is slight significant reduction in the mean serum level of adiponectin in periodontitis patients without T2DM when compared to those patients with T2DM, ($p < 0.05$).</p> <p>* The ratio of leptin/adiponectin was significantly higher among patients groups (0.43 ± 0.08 and 0.64 ± 0.03) when compared with the ratio in the control group</p>		

(0.21 ± 0.02), ($P < 0.01$). Interestingly negative significant correlation was noticed between leptin and adiponectin in periodontitis patients ($r = -0.325$, $p = 0.011$) and also in periodontitis+T2DM group ($r = -0.434$, $p = 0.017$).

* Regarding the correlation between serum leptin and adiponectin levels and clinical periodontal parameters, these findings did not observe any significant correlation between serum level of leptin, adiponectin, and ratio of leptin/adiponectin with clinical periodontal parameters ($p > 0.05$).

* In conclusion this study demonstrated that serum levels of leptin and adiponectin play a crucial role in pathogenesis of periodontitis with and without T2DM, and the relative leptin/adiponectin ratio appears to be indicative of disease occurrence. Moreover imbalance between pro and anti-inflammatory mediators could be involved in the initiation and progression of periodontitis and is indicative of a stronger systemic proinflammatory state in disease.