

Republic of Iraq  
Ministry of Higher Education  
And Scientific Research  
University of Baghdad  
College of Dentistry



***Assessment and Correlation of  
Salivary level of Receptor Activator  
Nuclear Factor KB ligand and  
Alkaline Phosphates with severity of  
chronic periodontitis***

***A thesis***

***Submitted to the council of the college of dentistry at the  
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***Prepared by:***

***Dr. Hussein Ali Mousa***

***B.D.S***

***Supervised by***

***Asst.prof.Dr.Saif.S.Saliem***

***B.D.S,M.SC.Periodontics***

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## **Abstract**

**Background:** The cells of periodontium contain many intracellular enzymes like alkaline phosphatase (ALP)& Receptor Activator of Nuclear Factor-Kappa B Ligand (RANKL) that are released outside into the saliva and gingival crevicular fluid (GCF) after destruction of periodontal tissue.

**Aim of this study:** to determine the activities of alkaline phosphatase & Receptor Activator of Nuclear Factor-Kappa B Ligand enzymes in saliva and its relation to the clinical periodontal parameters(PLI,GI,BOP,PPD,CAL), salivary flow rate(FR) and potential of hydrogen(pH) of the patients with different severities of chronic periodontitis.

**Materials and methods:** Sample population consist of 75 male individuals ; divided into four groups ,the first group (fifteen ):control subject, the second group (twenty):mild chronic periodontitis, the third group(twenty) moderate chronic periodontitis and the fourth group (twenty) severe chronic periodontitis, Measurements of clinical periodontal parameters which include plaque index (PLI), gingival index (GI), bleeding on probing (BOP), probing pocket depth (PPD) and clinical attachment level (CAL), saliva was collected and subjected to biochemical analysis of the alkaline phosphatase enzyme (ALP)& Activator of Nuclear Factor-Kappa B Ligand(RANKL) also measurement of salivary flow rate(FR) and potential of hydrogen (pH).

**Results:** Statistical analysis of the results revealed the presence of a highly significant difference in the enzymatic activity between healthy and chronic periodontitis with different severity subjects with positive correlation between the activities of these enzymes and the clinical periodontal parameters. And negative correlation between these enzymes and salivary flow rate( FR)& potential of hydrogen (pH).

**Conclusion:** Enzymes such as Alkaline phosphatase & Activator of Nuclear Factor-Kappa B Ligand are good biochemical markers of screening chronic periodontitis. Also they can be used as a monitor for healthy individuals and patients with different periodontal diseases.