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College of Dentistry**



**Waterpipe Smoking Effect on Clinical Periodontal
Parameters and Salivary Level of Receptor
Activator of Nuclear Factor-Kappa B Ligand of
chronic periodontitis patient**

A thesis

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By

Dr. Saif Mohammed T. Al-Mufti
B.D.S., H.D.D. (Periodontics)

Supervised by

Assist. Prof. Dr. Saif S. Saliem
B.D.S., M.Sc. Periodontics

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Abstract

Background: Waterpipe tobacco smoking gained popularity and became common among young smokers due to the false belief of being a safer mean of smoking.

Aims of the study: to determine the effect of Waterpipe smoking on clinical periodontal parameters and correlate it with salivary receptor activator of nuclear factor kappa- β , a biomarker of bone resorption, and also their effect on salivary pH and flow rate.

Materials and method: 100 male subjects were selected and categorized into 4 groups each group comprises (25) subjects which are: Waterpipe smokers with healthy periodontium (smokers H), Waterpipe smokers with chronic periodontitis (smokers CP), non-smokers with healthy periodontium (non-smokers H), and non-smokers with chronic periodontitis (non-smokers CP). Clinical measurements include plaque index (PLI), gingival index (GI), bleeding on probing (BOP), probing pocket depth (PPD) and clinical attachment level (CAL). Whole unstimulated saliva was collected subjected to biochemical analysis of RANKL, salivary flow rate (SFR) and salivary PH.

Results: Statistical analysis showed that, in the **H groups:** PLI and salivary PH were higher in smokers than non-smokers but with no significant difference ($P>0.05$). While GI and SFR were higher in smokers than non-smokers and with significant difference ($p<0.05$). In the **CP groups:** PLI, GI and SFR were higher in the non-smokers than smokers and with significant difference ($p<0.05$). While salivary PH was higher in the non-smokers than smokers but with no significant difference ($P>0.05$). BOP was higher in non-smokers than smokers but with no significant difference ($P>0.05$). PPD is higher in non-smokers than smokers with statistical significance ($p<0.05$) while CAL was higher in smokers than non- .

smokers with significant difference($p < 0.05$) .Strong positive correlation found in smokers CP group between RANKL and both PPD as well as CAL, while only CAL in non-smokers CP is positively correlated with RANKL. Salivary flow rate revealed no correlation with other variable in any group, meanwhile salivary pH found to be negatively correlated with GI in non-smokers H group, and negatively correlated with PLI in smokers CP group.

Conclusion: Smoking Waterpipe have a debilitating effect on oral and periodontal health especially in smokers with chronic periodontitis by speeding up their destructive phase.