

Oral Health Status and Dental Treatment  
Needs in Relation to Salivary Constituents  
and Parameters among a Group of Patients  
with Hypertension

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## *Abstract*

**Background:** Hypertension is one of the serious systemic diseases that may cause general systemic changes, which may be reflected in the oral cavity.

**Aims of the study:** To investigate caries-experience and periodontal health status in addition to oral hygiene among patients with hypertension, in relation to salivary variables and constituents and to compare results with healthy individuals.

**Materials and Methods:** Study groups consisted of 30 newly diagnosed hypertensive males, 30 hypertensive males under the captopril treatment, in addition to 30 healthy looking individuals. Their age was (49-50) years. Diagnosis and recording of dental caries was according to the criteria of WHO 1987. Plaque index (Silness and Loe, 1964) and calculus index (Ramfjord, 1959) were used for recording oral cleanliness. Periodontal disease was evaluated using the gingival index (Loe and Silness, 1963), periodontal pocket depth (Carranza, 1996) and loss of attachment level (Ramfjord, 1959). Stimulated salivary samples were collected (Tenovuo and Lagerlof, 1996) and salivary flow rate and pH were determined. Salivary samples then were chemically analyzed to determine the concentrations of salivary calcium, phosphorus, sodium, potassium ions, in addition to total protein and lipid profile.

**Results:** The total mean values of caries-severity (coronal and root caries) were highest among study groups compared to the control with statistically no significant difference. The highest need for dental care among the three groups was the need for one surface filling, while the lowest was the need for extraction among the newly diagnosed group and the need for crown or bridge abutment and pulp care among hypertensive under medication and control groups. Values of gingival, calculus, pocket depth and loss of attachment were

recorded to be highest among study groups compared to the control group with statistically highly significant difference for pocket depth.

In regard to saliva, lowest values of pH and flow rate were among study groups compared to the control group with statistically highly significant difference for the pH and non significant for the flow rate. The correlation between salivary variables with dental caries, oral hygiene, and periodontal disease revealed; a positive highly significant correlation between the flow rate and calculus index and positive significant correlations between the flow rate with (DS) and (DFS) and with plaque index among the newly diagnosed group, the hypertensive under treatment group, and the control group respectively. Negative significant correlations were found between the pH with (FS) and (DFS) among the newly diagnosed group. Results of salivary phosphorus, sodium, potassium ions, in addition to lipid profile (except high density lipoprotein) were highest among study groups compared to the control group with statistically highly significant difference for all of these constituents except for sodium it was significant and for phosphorus it was not significant. Negative significant correlations were found between cholesterol, low density lipoprotein with decayed coronal and root surfaces while it was positive with pocket depth among the newly diagnosed group. The concentrations of calcium and high density lipoprotein were highest among the control group compared to study groups with statistically highly significant difference for high density lipoprotein. Although, there was no alteration in the total protein concentration among the three groups but a positive highly significant correlation was found between total protein and (DMFS) among the newly diagnosed group.

**Conclusions:** The severity of periodontal disease was highest among hypertensive groups compared to the control one, so a special preventive program needs to be designed for this target group. While statistically non significant differences were recorded concerning caries-experience among the three groups.