

**Ministry of Higher Education
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**Selected Salivary Physico- Chemical
Characteristics in Relation to Oral Health
Status for a sample of Pregnant Women**

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Abstract

Background: During pregnancy many physiological, anatomical and biochemical changes take place that affect almost all body systems. In the oral cavity pregnant women experience an increase in severity of dental caries and gingival inflammation.

Aims of the study: To assess the severity of dental caries, gingival inflammation in addition to selected salivary variables (salivary flow rate, PH, viscosity, salivary total protein, and glycoprotein-2 (GP-2) levels. Also to find the relation of these selected salivary variables with oral variables among a group of pregnant women.

Subjects, Materials and Methods: The study group consisted of 60 pregnant women that were divided into three equal groups according to trimester (20 pregnant women in each trimester). They were selected randomly from the Primary Health Care Centers in Baghdad city, the age range was (20-25) years. In addition to 20 un married women as a control group and matched with age. Stimulated salivary samples were collected and salivary PH, flow rate and viscosity were measured. Then salivary samples were analyzed biochemically to determine total protein and glycoprotein-2 levels. Dental caries severity was recorded by using Decay, Missing and Filled index (D_{1-4}) using the criteria described by **Manjie et al, (1989)**. Plaque index system by **Silness and Løe, (1964)** was used for measuring dental plaque thickness. For measuring dental calculus the calculus index component of the periodontal diseases index (PDI) by **Ramfjord (1959)** was used. Gingival inflammation was assessed by using gingival index system (**Løe, 1967**).

Results: Results of the current study revealed that dental caries parameter represented by (DMFT ,DMFS,DS and MS) were higher among pregnant than un-married women with significant differences ($p < 0.05$) for DMFS, DS and MS. Also all grades of lesion severity (D_{1-4}) were higher among pregnant than non-

pregnant women but with non-significant differences ($p > 0.05$). Also almost all dental caries parameters were higher in the second trimesters with highly significant differences ($p < 0.01$) for D_1 , DS, DMFS and DMFT among four groups. Both plaque and calculus indices were higher among pregnant than non-pregnant women with highly significant differences ($p < 0.01$) and significant ($p < 0.05$) differences for plaque and calculus indices respectively. Concerning gingival inflammation pregnant women showed higher value of gingival index than un-married with highly significant difference ($p < 0.01$) that was especially higher in the second trimester with highly significant ($p < 0.01$) difference among four groups.

Regarding salivary variables, salivary flow rate showed higher mean value among pregnant than non-pregnant women but with non-significant difference ($p > 0.05$). It was especially higher in the second trimester but with non-significant difference ($p > 0.05$) among four groups. Salivary PH was lower among pregnant than non-pregnant women with highly significant difference ($p < 0.01$) and it was lowest in the second trimester with highly significant difference among four groups ($p < 0.01$). Salivary viscosity recorded higher mean value among pregnant women with highly significant difference ($p < 0.01$) especially in the third trimester with high significant differences among four groups ($p < 0.01$). Both salivary total protein and glycoprotein-2 recorded higher values among pregnant women, statistical difference was close to the confidence limit ($p = 0.05$) for glycoprotein-2 only. Also both salivary total protein and glycoprotein-2 recorded higher values in the first trimester with highly significant difference for glycoprotein-2 only ($p < 0.01$) among four groups.

Conclusions

During pregnancy there is an increased severity of dental caries and gingival inflammation due to the effect of pregnancy itself on oral hygiene (higher plaque and calculus indices) and salivary variables (increased salivary acidity

and viscosity). Therefore, intensive educational and preventive programs should be directed for pregnant women.