

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



Evaluation of Salivary Cortisol, Alpha- Amylase, Melatonin and IgA levels in Stress Related Oro-facial Conditions

A Thesis

Submitted to the council of the College of Dentistry at the
University of Baghdad in partial fulfillment of the requirements
for the Degree of Master of Science in Oral Medicine

By

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Baghdad - Iraq

2020 A.D.

1441 A.H.

Abstract

Background: some people had special problems causing them to have a stress and also university dental students perceived a stress with certain examinations. So, there was a need for measuring the stress level in those participants by using useful biomarkers. Several studies considered cortisol as a biomarker of stress with other biomarkers that were used in conjunction. The association between these salivary stress biomarkers was established and also, in comparison with the opposite values of control group. By clinical diagnosis and the appearance of the lesions, the associations between these markers and stress disorders were explained.

Aims of the study

The aim of the study is to estimate and compare salivary (IgA, cortisol, a amylase and melatonin) levels in stress related oro-facial conditions and normal people. Also, the differences between these markers in relation to these conditions. This could give an understanding to the role of stress in developing oro-facial conditions.

Subjects, materials and methods

This study group was composed of patients clinically diagnosed for stress related oro-facial conditions compared with healthy persons as a control group. The participants were undergraduate students in Baghdad and Babylon university who gave saliva samples at the period of academic examinations and some of other people with orofacial conditions who were exposed to stress, included in the study. While, those who were pregnant or taking hormone supplementation or having causes other than stress were excluded. ELISA kits (cortisol, melatonin, α -amylase and IgA) were used to measure the variables in the saliva samples. The clinical diagnosis was depended in this study.

Results: This study comprised of 107 patients and 30 controls, their age ranged between (15-63) years. There was a statistically highly significant difference of

salivary cortisol ($P=0.001$), a significant difference of salivary melatonin ($P=0.035$) and a non-significant difference of salivary α -amylase ($P=0.223$) and IgA ($P=0.179$) in the patients group (stress with oro-facial conditions) in light of control group. According to subgroups; there was a highly significant difference in the salivary cortisol level between case group of patients with (traumatic cheek biting, and RAS) in comparison with controls. There was a significant difference between tongue indentation group and control group, while there was a non significant difference between both of (TMJDs and herpes labialis) patients and control group. According to salivary melatonin level; there was a highly significant difference between stressed patients with traumatic cheek biting and control group, while there was a non significant difference with the other comparisons. According to salivary IgA level; there was a highly significant difference between stressed patients with herpes labialis and control group, where as there was a non significant difference with the rest comparisons. There was a highly significant difference in salivary α -amylase (sAA) level between case group of RAS and control group, while there was a non significant difference with the other comparisons.

Conclusions: This study showed that salivary cortisol and melatonin can be used as stress biomarkers to asses stress level in persons with some oro-facial conditions, such as level of cortisol in (cheek biting, RAS and tongue indentation) groups and level of melatonin in cheek biting group in comparison with controls.