

**Ministry of Higher Education
& Scientific Research
University of Baghdad
College of Dentistry**



**Study of Orofacial Complications, Salivary IgA,
Interleukin-6 and Tumor Necrosis Factor-Alpha
Markers in Saliva of Beta-Thalassemia Major
Patients in Missan Governorate**

A thesis

Submitted to the Council of the College of Dentistry, University of Baghdad, in
Partial Fulfillment of the Requirements for the Degree of Master of Science in
Oral Medicine

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2014 A.D.

1435 A.H.

Abstract

Background:

Beta-thalassemia is the most common monogenic known disorder in the Middle East, characterized by anomalies in the synthesis of the beta chains of hemoglobin resulting in variable phenotypes ranging from severe anemia to clinically asymptomatic Individuals. Several immunological defects can be found in patients with beta-thalassemia major patients, among which circulating cytokines levels, impairment of neutrophil, macrophage phagocytic and killing functions, this impairment may be due to iron overload.

Aims of study:

Aims of this study was to evaluate the prevalence of Orofacial complications in beta -thalassemia major patients, salivary flow rate, salivary levels of salivary immunoglobulin A, interleukin-6 and tumor necrosis factor alpha and to evaluate correlations between salivary parameters (salivary immunoglobulin A, interleukin-6, tumor necrosis factor alpha and salivary flow rate) in beta thalassemia major patients.

Methods:

Sixty subjects were participated in this study, they were divided into two groups, patients group composed of 30 patients with major beta –thalassemia, age range (5-23), and 30 healthy looking subjects of both sexes as a control group, age range (5-25). Data was collected using a special formula for general, medical and Orofacial examination sheet. Whole non-stimulated saliva was collected, measured and analyzed by enzyme linked immunosorbent assay.

Results:

Most patients were in the first and second decade of life (90%), 20 (60%) were males and 10 (40%) were females with an age range (5-23 years). The prevalence of Orofacial complications in beta-thalassemia major patients increased with age.

The prevalence of orofacial complications in beta -thalassemia major patients were color change of oral mucosa (73.3%), rodent face (66.7%), maxillary

protrusion (66.7%), saddle nose (63.3%), deep bite (26.7%), open bite (13.3%) and spacing (10%).

Regarding the salivary flow rate there was a statistically significant decrease in mean of salivary flow rate in patients group as compared with control group (P= 0.013).

Laboratory investigations for salivary concentration of interleukin-6, tumor necrosis factor alpha and salivary immunoglobulin A revealed highly significant to significantly in mean of these parameters in beta thalassemia major patients as compared with control group, interleukin-6 (p=0.001), tumor necrosis factor alpha (p= 0.01) and salivary immunoglobulin A (p= 0.05) at P value ≤ 0.05 .

Conclusions:

Beta -thalassemia major patients have specific Orofacial complications and a particular salivary cytokines compared to normal individuals.