

**Oral Manifestation Biochemical and  
IgA Analysis of Saliva  
In Hyperthyroid (Grave's disease) Patients  
(Comparative study)**

A thesis

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# Abstract

Hyperthyroidism is a condition caused by unregulated production of thyroid hormones. It might appear in different appearances according to special clinical signs, in Graves' disease the most clinical signs that differentiate it from other type of hyperthyroidism are exophthalmas, and diffuse goiter, and to lower extent pretibial myxidema .Other types of hyperthyroidism are: Solitary thyroid nodule and toxic multinodular goitre.

The aim of this study was to determine the prevalence of oral manifestation in hyperthyroidism patients treated with antithyroid drugs (carbimazole and radioactive iodine), and to correlate the clinical finding according to age, sex, onset of the disease.

Determine the level of total salivary protein, salivary calcium, potassium, and to investigate the changes of immunoglobulin A (IgA) in relation to hyperthyroid patients receiving antithyroid drugs (carbimazole and radioactive iodine) and to compare with clinically healthy.

## **Subjects, material and methods**

The study included 52 hyperthyroid patients (30 patients treated with carbimazole and 22 patients treated with Radioactive iodine) of both sexes (13 male and 39 female), those patients were matched in age and sex with 16 healthy control subjects. Those patients were examined to see the oral manifestations, saliva was collected and biochemical analysis was done to determine the level of salivary Calcium, Potassium, and total salivary protein, and to determine salivary flow rate, and the level of salivary IgA was measured by Enzyme Link Immunosorbent Assay.

## **Results**

The most frequent oral manifestations in the hyperthyroid patients in this study were dry mouth (56.7%), dysguesia (30%), and burning mouth sensation (16.7%), respectively.

There is highly significant difference in salivary flow rate between hyperthyroid patient treated with radioactive iodine and those treated with carbimazole.

This study revealed a difference in mean value of IgA parameter between hyperthyroid patients treated with radioactive iodine and those treated with Carbimazole in compared with control group (but statistically non-significance).

In total salivary protein the concentration is slightly higher in patients treated with carbimazole than those treated with radioactive iodine.

There was significance difference between the mean value of salivary calcium concentration in study groups treated with radioactive iodine and those treated with carbimazole.

The study revealed that salivary potassium was increase in the two studied groups in comparison to control, but statistically non-significance.

## **Conclusions**

The most frequent oral manifestations in hyperthyroid patients were dry mouth, the two medications that used for treatment of thyrotoxicosis lead to several salivary changes according to the study parameters. Radioactive iodine leads to improvement in salivary IgA, and decrease in salivary flow rate, total protein. Carbimazole lead to decrease salivary IgA, an increase in salivary flow rate, total protein. The statistical analysis showed difference in concentration in salivary calcium and potassium between the two treatments groups ( statistically non significance).