

ASSESSMENT OF SALIVARY GLAND FUNCTION IN PATIENTS UNDERGOING I¹³¹ TREATMENT



By

DR.S.JYOTSNA

Dissertation Submitted to the
Dr. N.T.R. University of Health Sciences,
Vijayawada, Andhra Pradesh

In partial fulfillment
Of the requirements for the degree of
MASTER OF DENTAL SURGERY
IN
ORAL MEDICINE AND RADIOLOGY

UNDER THE GUIDANCE OF
DR.RAJKUMAR BADAM, MDS,
ASSOCIATE PROFESSOR

t. 1009



DEPARTMENT OF ORAL MEDICINE AND RADIOLOGY
PANINEEYA MAHAVIDYALAYA INSTITUTE OF DENTAL SCIENCES AND
RESEARCH CENTRE, HYDERABAD

2011-2014

ABSTRACT**Background and objectives:**

Thyroid carcinoma is the most common endocrine malignancy, even though it represents less than 1% of all cancer cases. The first-line of treatment for thyroid cancer is thyroidectomy; most commonly, a total or near-total thyroidectomy is recommended.⁵⁵

High-dose I^{131} therapy is commonly used in patients with well differentiated thyroid carcinoma after total thyroidectomy. In this process, the non thyroidal tissues, such as, salivary gland, stomach, and breast tissues also take up radioactive iodine.⁴⁶

The concentration of I^{131} in salivary glands is about 30–40 times of that in plasma and is sufficient to cause salivary gland injury by high-dose I^{131} therapy for differentiated thyroid cancer.⁴⁵

Dose related damage to the salivary parenchyma results from the I^{131} irradiation.

Generally, Salivary gland scintigraphy is widely accepted as a sensitive and valid method for evaluation of salivary gland dysfunction after Radioactive Iodine Therapy (RIT).⁴⁰

The purpose of this study is to assess the damage to the salivary glands after RIT.

Methods: An observational cohort study was conducted in 24 patients diagnosed with well differentiated thyroid carcinoma, who, underwent total thyroidectomy and due for radioactive iodine therapy in MNJ INSTITUTE OF ONCOLOGY &

REGIONAL CANCER CENTER, Hyderabad and NIZAM'S INSTITUTE OF MEDICAL SCIENCES, Hyderabad.

Salivary gland assessment was done by salivary gland scintigraphy before and after radioactive iodine therapy.

Results: when the data was analysed, there was a statistically significant difference in the uptake%, relative uptake % and ejection fraction % in the parotid and submandibular glands before RIT and one month after RIT.

Conclusion: This study was carried out to assess the dynamic changes in the salivary glands before RIT and one month after RIT³⁶. We inferred from the study that there was an overall decrease in uptake%, relative uptake % and ejection fraction % one month post RIT in parotid salivary glands and significant difference was noted in uptake%, and ejection fraction % one month post RIT in submandibular glands but no significant difference was noted in the relative uptake % of the submandibular gland which can be attributed to the mucinous nature of the gland. And also statistically significant difference was noted between Group A (60 – 100 Gy) and Group B (100 – 150 Gy) concluding the fact that the damage is dose related.³⁷

Key word: Well differentiated thyroid carcinoma, Radioactive iodine therapy, Group A, Group B, salivary gland scintigraphy , Uptake % , Relative uptake % , Ejection fraction % .