CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
http://doi.org/10.5281/zenodo.3303261

Available online at: http://www.iajps.com *Research Article*

ANALYSIS OF SALIVARY CHANGES WITH RELATION TO ORAL DRYNESS AMONG PATIENTS OF THYROID DYSFUNCTION

Dr Nousheen Ramzan[1], Dr Hajra Nawaz[2], Dr Kalimullah Khan[3]
[1]Sharif Medical and Dental College, [2]Dental Surgeon at RHC, Farooqabad,
[3]Women & Children hospital/MTI, Bannu.

Article Received: May 2019 **Accepted:** June 2019 **Published:** July 2019

Abstract:

Introduction: *Saliva is fundamental to keep up adequate oral capacities, for example, grease, biting and gulping, discourse, oral pH adjust, taste observation, and regulation.*

Objectives of the study: *The main objective of the study is to analyze the salivary changes with relation to oral dryness among patients of thyroid dysfunction.*

Material and methods: *This cross-sectional study was conducted in Sharif medical and dental college during November 2018 to March 2019. The data was collected from 100 patients. The diagnosis of hypothyroidism was based on increased serum thyroid-stimulating hormone (TSH) >5 mIU/L and low serum free tetra iodo thyroxine (FT4) <0.61 ng/dL. Patient data were collected using a specifically designed form to record basic demographic data, complete history, thyroid profile, and salivary profile. We asked the patients not to eat, drink, smoke, or perform oral hygiene for 60 min before saliva collection.*

Results: *The data was collected from 100 patients. Salivary parameters of control group and selected patients are represented in table 01. It shows that p value is significant in case of unstimulated salivary flow rate and stimulated flow rate. But in case of pH of saliva it's not significant.*

Conclusion: *It is concluded that a factually noteworthy diminishing in salivary parameters, for example, buffering limit and stream rates. Henceforth, a patient with thyroid dysfunction ought to be subjected to customary dental checkups and legitimate preventive strategies ought to be utilized to guarantee great oral wellbeing and cleanliness status to the patient.*

Corresponding author:
Dr. Nousheen Ramzan,
Gujranwala Medical College Gujranwala.

QR code

Please cite this article in press Nousheen Ramzan et al., ***Analysis Of Salivary Changes With Relation To Oral Dryness Among Patients Of Thyroid Dysfunction.,*** *Indo Am. J. P. Sci, 2019; 07[07].*

INTRODUCTION:

Saliva is fundamental to keep up adequate oral capacities, for example, grease, biting and gulping, discourse, oral pH adjust, taste observation, and regulation. Quantitative and subjective changes in salivary stream can trade off these capacities. Therefore, subjects with salivary gland dysfunction are more powerless to periodontal ailment, uncontrolled caries, and fungal and bacterial oral diseases. Longitudinal examinations exploring the progression and force of salivary gland dysfunction in patients submitted to removal with iodine 131 are rare in the writing [1].

Salivation is of rising significance in the medicinal and dental universes. It assumes a significant part in keeping up the soundness of the oral cavity by executing different host protection capacities, for example, homeostatic procedures, grease, antimicrobial movement, and control of demineralization of teeth. Subjective and objective useful misfortunes have been accounted for by different investigations that happen in individuals without the capacity to create adequate volumes of salivation [2]. These useful misfortunes incorporate xerostomia, dysphagia, and an expanded weakness for crafty diseases. Unstimulated salivation is a pointer of the basal generation and gives generally assurance [3]. It predominantly contains minor and submandibular glands' yield. The variables influencing unstimulated salivary stream rate (USFR) are level of hydration, body position, and introduction to light, past incitement, circadian rhythms, circannual rhythms, and drugs. Empowered spit offers assurance amid rumination and aids deglutition. It is predominantly contained parotid gland yield [4]. The elements influencing the invigorated salivary stream rate (SSFR) are nature of boost, heaving, smoking, gland estimate, choke reflex, olfaction, one-sided incitement, and food intake. Any adjustment in the quality and amount of spit will prompt aggravations in the defensive elements of the salivation [5].

Relationship of salivary gland work with different foundational issue has been set up. Certain fundamental factors, for example, unending renal disappointment, menopausal and hormonal effects, and additionally side effects from solutions influence the arrangement, amount, and nature of salivation, straightforwardly or by implication [6].

OBJECTIVES OF THE STUDY:

The main objective of the study is to analyze the salivary changes with relation to oral dryness among patients of thyroid dysfunction.

MATERIAL AND METHODS

This cross-sectional study was conducted in Sharif medical and dental college during November 2018 to March 2019. The data was collected from 100 patients. Patients were enrolled in this study as cases along with 45 age-and sex-matched controls from the outpatient department (OPD). Pregnant women and patients with a history of tobacco use and significant variations from normal body mass index were not included in the study. Newly diagnosed patients with hypo/hyperthyroidism, aged 18–45 years, and who were satisfying the selection criteria were included as cases in the study. The diagnosis of hypothyroidism was based on increased serum thyroid-stimulating hormone (TSH) >5 mIU/L and low serum free tetra iodo thyroxine (FT4) <0.61 ng/dL. Hyperthyroidism was diagnosed based on decreased serum TSH <0.3 mIU/L and high serum FT4 >2 ng/dL. Patient data were collected using a specifically designed form to record basic demographic data, complete history, thyroid profile, and salivary profile. We asked the patients not to eat, drink, smoke, or perform oral hygiene for 60 min before saliva collection. Saliva was collected at the same time of the day for each patient.

Estimation of pH of saliva: The stimulated whole saliva was then analyzed for its pH and buffering capacity. A handheld digital manual pH meter (Hanna) was used to measure the pH of saliva.

Oral dryness: Symptoms of subjective oral dryness were recorded using a short questionnaire adopted from the study conducted by Farsi in 2007. The responses of the participants were assessed according to the criteria of Farsi, wherein the people who answered at least one question in affirmative were considered as positive for subjective complaints of oral dryness.

STATISTICAL ANALYSIS:

The collected data were analyzed using SPSS software (version 17). The results are presented as a mean with 95% confidence interval limits or standard deviations. The significant value for P <.05 was accepted as statistically significant.

RESULTS:

The data was collected from 100 patients. Salivary parameters of control group and selected patients are represented in table 01. It shows that p value is significant in case of unstimulated salivary flow rate and stimulated flow rate. But in case of pH of saliva it's not significant.

Table 01: Salivary parameters of patients and control group

Variables	Group	n	Mean ± SD	P-value
Un stimulated salivary flow rate	Case	50	0.245 ± 0.154	<0.001
	Control	50	0.564 ± 0.176	
Stimulated salivary flow rate	Case	50	1.461 ± 0.455	<0.001
	Control	50	1.982 ± 0.244	
pH of saliva	Case	50	6.978 ± 0.373	0.217
	Control	50	6.789 ± 0.374	

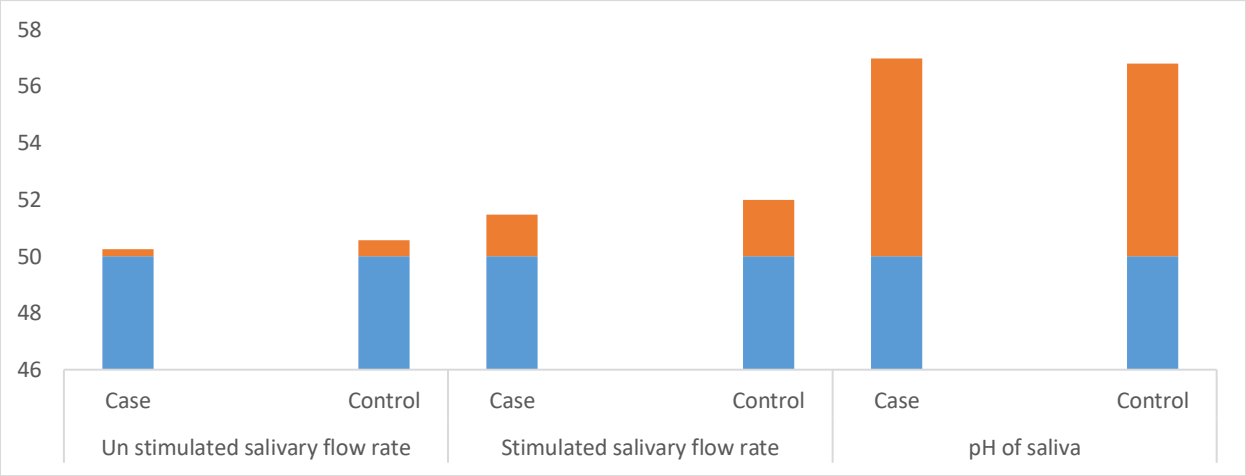

Figure 01: Salivary parameters

DISCUSSION:

The relationship of salivary capacity with different fundamental ailments has been cited by various creators. There is a settled relationship of salivary capacity with regular sicknesses, for example, diabetes, oral sub mucous fibrosis, and asthma. Thyroid issue is a standout amongst the most well-known endocrine issue all inclusive and broadly, yet at the same time there is a critical deficiency of value prove that can build up its association with salivary capacity [7]. Prior examinations in human subjects either evaluated just hypothyroid members or utilized scintigraphy or parotid gland stream rates. Muralidharan et al., 2013, surveyed just animated entire mouth salivation stream rate in thyroid issue patients. In our investigation, we have assessed unstimulated and SSFRs in hyperthyroid and hypothyroid patients [8].

The perceptions of our examination propose that thyroid dysfunction is more normally found in females as opposed to guys and that hypothyroidism was the most ordinarily experienced thyroid dysfunction [9]. These discoveries are as per the present writing. Our examination barred subjects producing medicine that have a result on salivary emission, subjects experiencing restorative head-and-neck illumination, and subjects with a history suggestive of foundational diseases, for example, hypertension, rheumatoid joint inflammation, and diabetes mellitus as these components affect the salivary gland work and could influence the outcomes [10].

The data received from the investigation led by Farsi in 2007 was utilized to decide the impression of subjective oral dryness among the members. To the best of our insight, such an evaluation in thyroid dysfunction patients has not been distributed in writing. One of the inquiries gave the patient's view of resting spit while the other three concentrated on the animated salivation [11].

CONCLUSION:

It is concluded that a factually noteworthy diminishing in salivary parameters, for example, buffering limit and stream rates. Henceforth, a patient with thyroid dysfunction ought to be subjected to customary dental checkups and legitimate preventive strategies ought to be utilized to guarantee great oral wellbeing and cleanliness status to the patient.

REFERENCES:

1. Solans R, Bosch JA, Galofré P, Porta F, Roselló J, Selva-O'Callagan A, et al. Salivary and lacrimal gland dysfunction (sicca syndrome) after radioiodine therapy. J Nucl Med. 2001; 42: 738-43.
2. Prasanthi B, Kannan N, Patil R. Effect of diuretics on salivary flow, composition and oral health status: A clinico-biochemical study. Ann Med Health Sci Res 2014; 4:549-53.
3. Almeida JP, Sanabria AE, Lima EN, Kowalski LP. Late side effects of radioactive iodine on salivary gland function in patients with thyroid cancer. Head Neck. 2011; 33: 686-90.
4. Liu B, Kuang A, Huang R, Zhao Z, Zeng Y, Wang J, Tian R. Influence of vitamin C on salivary absorbed dose of 131I in thyroid cancer patients: a prospective, randomized, single-blind, controlled trial. J Nucl Med. 2010; 51: 618-23.
5. Muralidharan D, Fareed N, Pradeep PV, Margabandhu S, Ramalingam K, Ajith Kumar BV, *et al.* Qualitative and quantitative changes in saliva among patients with thyroid dysfunction prior to and following the treatment of the dysfunction. Oral Surg Oral Med Oral Pathol Oral Radiol 2013;115:617-23.
6. Ericsson Y, Hardwick L. Individual diagnosis, prognosis and counselling for caries prevention. Caries Res 1978;12 Suppl 1:94-102.
7. Farsi NM. Signs of oral dryness in relation to salivary flow rate, pH, buffering capacity and dry mouth complaints. BMC Oral Health 2007;7:15.
8. Rooban T, Mishra G, Elizabeth J, Ranganathan K, Saraswathi TR. Effect of habitual arecanut chewing on resting whole mouth salivary flow rate and pH. Indian J Med Sci 2006;60:95-105.
9. Jentzen W, Balschuweit D, Schmitz J, Freudenberg L, Eising E, Hilbel T, et al. The influence of saliva flow stimulation on the absorbed radiation dose to the salivary glands during radioiodine therapy of thyroid cancer using (124)I PET(/CT) imaging. Eur J Nucl Med Mol Imaging. 2010; 37: 2298-306.
10. Rosário PWS, Cardoso LD, Barroso AL, Padrão EL, Rezende LL, Purish S. Safety of radioiodine therapy in patients with thyroid carcinoma younger than 21 years. Arq Bras Endocrinol Metabol. 2005; 49: 241-5.
11. Bomeli SR, Desai SC, Johnson JT, Walvekar RR. Management of salivary flow in head and neck cancer patients - a systematic review. Oral Oncol. 2008; 44: 1000-8.