

8. Clinical Profile of Thyroid Dysfunction: A Cross Sectional Study from Akola District

Kohchale S. R.
Research Student.
S. R. Rathod
Research Student.
Devika N. Pathar
Research Student.

Introduction

The thyroid is an endocrine gland which is situated at the root of the throat under the control of thyrotrophic hormone of anterior pituitary gland, having two fairly symmetrical lateral lobes, joined by a thin portion of thyroid tissue called the isthmus crossing in front of the second, third and fourth tracheal rings. When the thyroid gland is examined microscopically it is found to consist of follicles of vesicles which are lined in the resting state by a simple cuboidal epithelium cell. The follicular cells are arranged as in spherical follicles surrounding colloid. The interior portion of these follicles forms the follicular lumen. They have thyrotropin receptors on their surface, which are influenced by the thyroid stimulating hormone. The parafollicular cells (C cells) are scattered along the basement membrane of the thyroid epithelium. Thyroid hormones are synthesized from amino acid tyrosine. The synthesis of thyroid hormone requires the iodination of tyrosine molecules and the combination of two iodinated tyrosine residues.

Aims and Obectives

Study of thyroid hormone deficiency is becoming an important task on the basis of studies, carried out at international as well as National level government realized importance of study of thyroid and launched many programmes. As thyroid hormone plays important role in physical and brain development, deficiency in thyroid level can lead to mental and growth retardation in growing age also in elders. It gives invitation to many disorders also. As thyroid hormone affects all metabolic activities and processes study was conducted



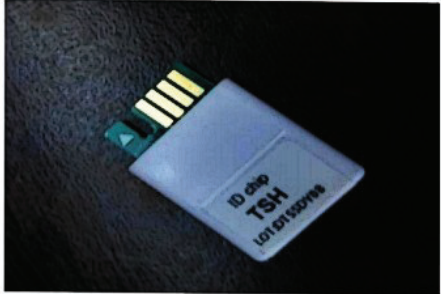

1. For the management of strategies of health to know the status of thyroid hormone.
2. To evaluate TSH for subclinical hypothyroidism and hyperthyroidism.
3. To know the status of TSH in male and female.

4. To correlate thyroid disorder and associated symptoms.
5. To determine burden of thyroid disorder and usefulness of thyroid hormone screening.

Materials and Methods

- **Study Design:** The cross-sectional study was conducted in Akola city from August 2022 to January 2023 by visiting the pathology and prior permission was taken. Samples were collected from the patients of Akola and were subjected for test of TSH.
- **Study Setting:** Study was conducted in Life Care Clinical Laboratory with prior permission of doctors who sends the samples for testing purpose.
- **Participants in Study:** All types of participants including male and female.
- **Data Collection:** Patients were interviewed and were ask the question while collecting the reports. Data was kept confidential.

Ichroma test

	
<p style="text-align: center;">Ichroma machine</p>	<p style="text-align: center;">Test cartridge</p>
	
<p style="text-align: center;">ID chip</p>	<p style="text-align: center;">Detector diluent</p>

Statistical analysis: Data was analysed statistically with standard process

Observations and Results

In the present study, total 71 subjects were selected during study duration from the month August 2022 to January 2023. Among these subjected subjects 20 were male and 51 were female. The subjects were classified according to the status of hypothyroidism and hyperthyroidism. After screening for TSH considering 71 subjects 15% of male were suffering from hyperthyroidism with no hypothyroidism case, whereas in case of females 19.60% were suffering from Hypothyroidism and 3.92% were screened as Hyperthyroidic.

Table 1: Showing TSH Concentration in male and female

Sr No.	Male	Female	TSH
1		Female	0.42
2	Male		1.65
3	Male		0.57
4	Male		1.62
5		Female	0.41
6	Male		0.79
7	Male		1.18
8		Female	0.57
9		Female	0.41
10		Female	20.49
11	Male		2.45
12	Male		1.91
13		Female	2.40
14		Female	4.43
15		Female	6.81
16		Female	0.46
17		Female	2.35
18		Female	1.17
19	Male		2.23
20		Female	2.15
21		Female	0.12
22		Female	0.34
23		Female	1.36
24		Female	2.51
25		Female	10.57
26		Female	4.50
27	Male		4.03
28		Female	25.41
29		Female	2.81
30	Male		1.94
31		Female	3.58
32		Female	1.68
33		Female	0.85
34	Male		0.28
35	Male		0.30
36		Female	35.35
37		Female	2.56
38		Female	2.53
39	Male		1.16
40	Male		1.27
41		Female	2.57
42		Female	1.90
43	Male		0.38

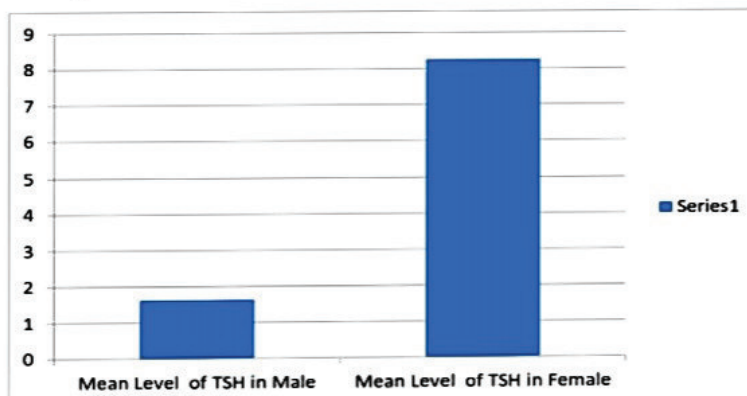
44	Male		0.40
45		Female	3.87
46		Female	4.09
47		Female	1.70
48	Male		6.12
49		Female	0.46
50		Female	6.08
51		Female	1.65
52		Female	27.63
53		Female	4.40
54		Female	1.10
55	Male		0.12
56		Female	0.61
57		Female	0.59
58		Female	2.38
59		Female	0.52
60		Female	2.54
61		Female	0.53
62	Male		1.99
63		Female	2.44
64		Female	2.79
65	Male		1.64
66		Female	0.48
67		Female	0.11
68	Male		0.46
69		Female	14.10
70		Female	100
71		Female	100

Table 2: Distribution of Thyroid Dysfunction in Male and Female

Total no. of males.	20
Total no. of females.	51
Total no. of males suffering from hypothyroidism.	0
Total no. of males suffering from hyperthyroidism	3
Total no. of females suffering from hypothyroidism	10
Total no. of females suffering from hyperthyroidism	2

Table 3: Showing concentration of TSH in Male and Female (Values are mean \pm SE)

Sr. No.	Particular	Mean in μ IU/ml (mean \pm SE)
1	Mean Level of TSH in Male	1.6240 \pm 1.4210
2	Mean Level of TSH in Female	8.2551 \pm 2.8146

Graph 1: Showing Concentration of TSH in male and female (Values are mean \pm SE)

Conclusion

In our cross-sectional retrospective study, which was conducted at Life Care Clinical Laboratory, it is revealed that thyroid dysfunction is common in females where hypothyroidism is common disorder encountered and females are undergoing many medications for thyroid dysfunction. In case of males, they are less prone to thyroid disorders. We recommend screening of high-risk group particularly female and above 45 years. Our study suggests, there should be routine evaluation of susceptible population and should be followed by early detection with early treatment which help to avoid complications, as the diagnosis and management of thyroid dysfunction. Also, this study is helpful to determine the burden of thyroid disorder and support usefulness of screening of thyroid function.

References

1. Abraham, VS Murugan, P Pukazhvanthen and SK Sen (2009). Thyroid disorders in women of Puducherry, IJCB, (24), 52-59.
2. Chatterjee's CC, (2018). Human physiology, 12th Edition, 600-613.
3. Clinical Guide to Laboratory Tests. Ed. N.W. Tietz, 3rd Ed., W.B. Saunders Company, Philadelphia, PA 19106, 1995.
4. Gupta R, AK Vijayan, S Chaudhary (2021). Thyroid dysfunction in patients of metabolic syndrome: A study from a tertiary care centre in India, AJMS, (12), 47-50.
5. Jose AM, PA Muntode, S Sharma, SS Mathew, RR Nair, S Solanki, (2019). Profile of thyroid dysfunctions among the female population in a rural community of Wardha District: A hospital-based study, Journal Datta Meghe Institute of Medical Sciences University, (14), S81-91.