



## Prevalence of Thyroid disorders in Admitted Patients from Local ethnic population in Tertiary care hospital

### KEYWORDS

Hypothyroidism, Hyperthyroidism

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**ABSTRACT** *Background: Thyroid disorders are one of the common endocrine disorders and are related to many complications. However, thyroid disorders are often overlooked in adults. This research is done to estimate the prevalence of thyroid disorders amongst adults in local ethnic population presenting to tertiary care hospital in Pune (India)*

*Methods: This Cross-sectional retrospective, single centre study was done in SKN Hospital Pune (India) for the patients admitted between Period Dec 2013 – Nov 2014. The total number of patients with thyroid disorders above age group 12 years were noted. The criteria for Thyroid dysfunction was made as per thyroid function tests results.[1]*

*. The results were tabulated in Excel sheet and analysed.*

*Results: Amongst 5726 total admissions done during this period, 114 patients were found to be having thyroid disorders. Of these 114 patients, there were 98 patients (85.96%) of hypothyroidism with 24 Male and 74 Female patients. 16 were diagnosed to have hyperthyroidism with 2 Male and 14 Female patients.*

*Conclusion: Prevalence of Thyroid disorders is significant in adult population. Routine screening of thyroid disorders is essential to diagnose the disorders at an early stage.*

### INTRODUCTION

Thyroid disorders are one of the common endocrine disorders with worldwide distribution. Almost one-third of the world's population lives in areas of iodine deficiency.[2]

Hypothyroidism is endemic in areas where daily iodine intake is less than 50 micrograms. In iodine-replete areas, thyroid disorders manifest as autoimmune disease, ranging from primary atrophic hypothyroidism, Hashimoto's thyroiditis to thyrotoxicosis caused by Graves' disease. It has been estimated that about 42 million people in India suffer from thyroid diseases

This study was planned to investigate the prevalence of thyroid disorders in adults over age 12 years selected from Inpatients admitted in Medicine Ward at Tertiary care hospital.

### MATERIALS AND METHODS

This work is a retrospective single centre study conducted during Dec 2013- Nov 2014 in tertiary care hospital located in Pune. The Inpatient records of patients admitted to Medicine wards were analysed for patients with age above 12 years. The patients showing deranged thyroid function tests were included in the study.

Data entry and statistical analysis were performed using the Microsoft Excel and Statistical Package of Social Sciences (SPSS) windows version 11.0 software. Chi- square test was applied to find out the results. A p value <0.05 was taken for statistical significance.

### RESULTS

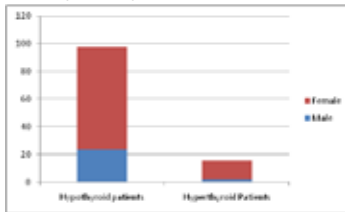
The following table (Table 1) shows month-wise statistical data of the patients admitted. The table also shows sexwise differentiation amongst the study population group. The data was analysed with chi square test; which showed 'p' value <0.00001 Further, there was Female pre-

ponderance over Male in both the groups viz. Hypothyroid and Hyperthyroidism.

Table : Showing monthly statistics of Hypothyroid and Hyperthyroid patients

Sr No	Month	Total patients	Hyperthyroid Patients			Hypothyroid patients		
			Male	Female	Total	Male	Female	Total
1	Dec 2013	543	0	2	2	1	4	5
2	Jan 2014	542	0	2	2	2	5	7
3	Feb 2014	497	0	0	0	0	4	4
4	March 2014	502	0	0	0	0	8	8
5	April 2014	483	0	1	1	1	6	7
6	May 2014	512	1	1	2	1	4	5
7	June 2014	421	1	2	3	1	6	7
8	July 2014	443	0	3	3	4	8	12
9	Aug 2014	463	0	1	1	6	8	14
10	Sep 2014	430	0	1	1	6	9	15
11	Oct 2014	436	0	0	0	1	7	8
12	Nov 2014	454	0	1	1	1	5	6
Grand Total		5726	2	14	16	24	74	98

**Figure 1 : Showing Sexwise distribution of Hypothyroid and Hyperthyroid patients Patients**



## DISCUSSION

**HYPOTHYROIDISM:** It is the commonest thyroid disorder ranging from subclinical to overt hypothyroidism. Various studies have been done worldwide to know the extent of the prevalence of the disease. Prior to the iodization programme of the Government of India, prevalence of goitre and hypothyroidism were high in many iodine deficient endemic areas. Areas which have become iodine sufficient, Autoimmune Thyroiditis has become a more common cause of goitre. The link between endemic goiter and iodine deficiency has been highlighted in many reports. [3,4,5]

In the post-iodization phase, prevalence of goiter was studied. [6] This study was done on about 14,762 children from all over India. The authors opined that despite iodization,

the prevalence of goiter has not dramatically declined. It was suggested that besides thyroid autoimmunity, the role of goitrogens is also important.

Population studies have suggested that about 16.7% of adult subjects have anti-thyroid peroxidase (TPO) antibodies and about 12.1% have anti-thyroglobulin (TG) antibodies.[7]

In a study, 6283 schoolgirls from all over India were screened for Hashimoto's thyroiditis. [8] 1810 schoolgirls were found to have Goiter. Fine needle aspiration cytology done in 764 of those girls revealed that 58 (7.5%) were suffering from juvenile autoimmune thyroiditis.

Several studies done outside India also show the widespread nature of this disease. The Wickham survey, conducted in the north of England, showed a prevalence of overt hypothyroidism of at least 2% in females and 0.2% in males.[9]

In the NHANES III study, 4.6% of the US population had hypothyroidism (0.3% clinical and 4.3% subclinical). [10] The incidence of progression from sub-clinical to overt hypothyroidism is 5–15% per year.[9] Sub-clinical hypothyroidism, the most prevalent form of thyroid diseases, is more common in females and in the elderly. [11]

**Table 1: Showing various Studies to estimate Hypothyroidism Prevalence in India**

Sr No.	Author(s)	Journal, Volume, Page No.	Conclusion of the Study
1	Deshmukh V, Behl A, Iyer V	Indian J Endocrinol Metab. 2013 May-Jun; 17(3): 454-459.	Prevalence of Subclinical Hypothyroidism was 11.3% (M:F ratio 1:3.7). 74% belonged to 35–54 years age group
2	Ambika Gopalakrishnan Unnikrishnan, Sanjay Kalra,	Indian J Endocrinol Metab. 2013 Jul-Aug; 17(4): 647–652.	The prevalence of hypothyroidism was high, affecting approximately one in 10 adults in the study population. Female gender and older age were found to have significant association with hypothyroidism.
3	Marwaha RK, Tandon N, Gupta N,	Clin Endocrinol (Oxf). 2003 Dec;59(6):672-81.	The overall goitre prevalence was 23% (27.1% girls; 17.8% boys, P < 0.001). Persistent, albeit reduced prevalence of goitre, suggests existence of additional factors in goitrogenesis in India

## Hyperthyroidism

A study from Cochin revealed overt hyperthyroidism in 1.6% and 1.3% of subjects participating in a community survey. [7] While a study done in Pondicherry hospital revealed subclinical and overt hyperthyroidism were present in 0.6% and 1.2% of subjects.[12]

Outside India, in the NHANES III study, 1.3% had hyperthyroidism (0.5% clinical and 0.7% subclinical). [10] The incidence of progression to overt thyrotoxicosis is approximately 5% per year. [13]

All the above studies indicate the extent of the thyroid disorders in India and worldwide. Complications of the untreated thyroid disorders resulting in myxoedema coma,

Graves disease, thyroid storm etc and their subsequent effects on the cardiovascular system are well known. Our study was done to highlight the importance of screening for these Thyroid diseases .

Limitation(s) of the Study : Findings from the current investigation should be considered with due attention to limitation. The sample of patients taken, cannot be considered as representative of the population in general.

## CONCLUSION

This study highlights the importance of detection of thyroid disorders in adults. A high index of Clinical suspicion is required in diagnosing these conditions at early stages.

## REFERENCE

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