

## Clinical Profile of Hypothyroid Patients attending tertiary care hospital-- A Cross-Sectional Observational Study

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### Abstract

**Introduction:** In developing countries like India, hypothyroidism gets secondary priority due to overburden of communicable diseases. With this background present study was carried out to study the clinical profile of patients with hypothyroidism. **Material and Method:** A total of 220 patients were included in the study, out of which 164 were female and 56 were male. detailed clinical history pertaining to symptoms like weight gain, lethargy, dry skin, hoarseness of voice, dyspnea, constipation, cold intolerance, depression, menstrual discomfort in females was recorded in the predesigned, pretested semi structured study questionnaire. **Results:** Most commonly females with hypothyroidism were at the age groups of 18-28 and 29-39, whereas males with hypothyroidism were at the age groups of 29-39. Females had a higher prevalence rate than men. The female population constituted about 74.5% of total study population. **Conclusion:** The most common of the symptoms included Weight gain, Hair loss, Dry skin, Hoarseness of voice, Lethargy, Cold intolerance, Hypokinesia and Constipation.

**Keywords:** hypothyroidism, Clinical Profile, Hypokinesia, Reproductive Age

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### Introduction

Hypothyroidism is due to transient or progressive impairment of hormone biosynthesis which is typically associated with thyroid enlargement. Central or Secondary Hypothyroidism is caused by inadequate stimulation of a normal gland, the result of hypothalamic or pituitary disease or defects in the thyroid- stimulating hormone (TSH). Transient or Temporary Hypothyroidism can be observed as a phase of subacute thyroiditis. This kind can be congenital. Primary hypothyroidism is the etiology in approximately 99% of cases of hypothyroidism. Reduced action of thyroid hormone at the tissue level in the phase of normal or increased thyroid hormone production from the thyroid gland can also be associated with clinical hypothyroidism. In developing countries like India, hypothyroidism gets secondary priority due to overburden of communicable diseases. This clinical entity has been clubbed under the broad heading of Iodine Deficient Disorders (IDDs) in India. More focus in on school children and more concentration goes to clinically identifiable cases[1]. Goiter reduction was the main priority in India and in this reference iodized salt was introduced which led to significant reduction in the prevalence of goiter in India. The goiter endemic areas were converted into non endemic areas with this iodized salt program[2]. Hypothyroidism is characterized by a broad clinical spectrum ranging from an overt state of myxedema, end-organ effects and multisystem failure to an asymptomatic or subclinical condition with normal levels of thyroxine and triiodothyronine and mildly elevated levels of serum thyrotropin[3-6]. Subclinical hypothyroidism (ScHt) is defined as high serum thyroid stimulating hormone (S.TSH) concentration with normal serum free thyroxine (FT4) and free triiodothyronine (FT3) concentrations, associated with few or no signs and symptoms of hypothyroidism[7]. Subclinical hypothyroidism is the most prevalent thyroid disorder affecting 3-

15% of the adult population[8]. Its incidence increases with advanced age, female gender and greater dietary iodine intake[8-16]. Comorbidities and complications are more in patients with hypothyroidism compared to other people. It has been found that hypothyroidism co-exists with hypertension, asthma, diabetes, obesity etc. or the prevalence of hypothyroidism is more in patients with hypertension, asthma, diabetes, obesity etc[17]. Hence early diagnosis and early treatment for hypothyroidism can prevent a lot of complications in patients with hypothyroidism and this is very true for subclinical hypothyroidism[18]. Early diagnosis is possible on early clinical suspicion. Hence common range of clinical features should be borne in mind. With this background present study was carried out to study the clinical profile of patients with hypothyroidism. Although a number of clinical manifestations have been associated with this early or mild phase of hypothyroidism, the term subclinical is used here to describe this group, as in most clinical studies. Subclinical hypothyroidism is defined as an elevated serum TSH level with a normal serum FT4 concentration. Subclinical hypothyroidism can progress to overt hypothyroidism, and it can be associated with manifestations that, in some patients, can be improved with treatment. The incidence of hypothyroidism is higher among women, the elderly, and in some racial and ethnic groups.

### Methodology

The present study was conducted in department of general medicine at SVS Medical College Mahabubnagar, Telangana state, India. A total of 220 patients were included in the study from January 2019 to December 2019, out of which 164 were female and 56 were male. The patients were enrolled based on the inclusion criteria. The study material was patient data profiles (or) case sheet and through interaction with patient. They were asked to answer questions in the questionnaire form regarding the symptomatology. The inclusion and exclusion criteria includes the following, Institutional Ethics Committee permission was obtained. Informed consent was taken from all patients included in the present study. They were appropriately treated, and health education was given on

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importance of regular treatment for hypothyroidism and regular screening for thyroid profile to adjust the doses of the drugs.

**Inclusion criteria:**

- Adult male and female patients of age group 18-50 years
- Biochemical history connected to hypothyroidism.
- Treatment naïve.

**Exclusion criteria:**

- Central hypothyroidism.
- Other associated combinations (comorbidities) and hormonal disorders.

During the study period, author was able to collect data on 40 patients with hypothyroidism of age 18-50 years. Once the patient entered the OP, detailed clinical history pertaining to symptoms like weight gain, lethargy, dry skin, hoarseness of voice, dyspnea, constipation, cold intolerance, depression, menstrual discomfort in females was recorded in the predesigned, pretested semi structured study questionnaire. Then patient was asked to lie down with confidentiality maintained and thorough clinical examination was

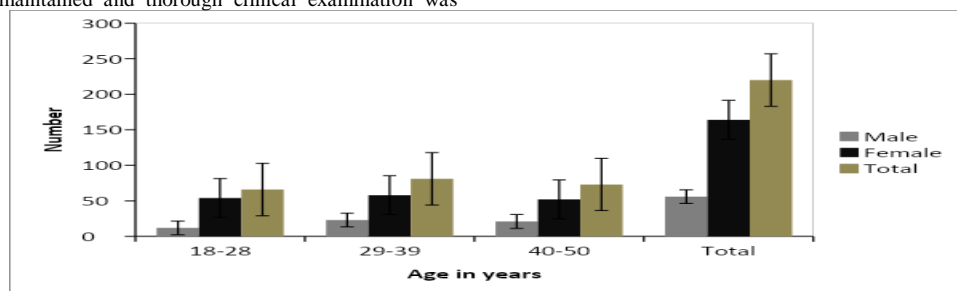
carried out. The patient was examined for presence of clinical signs like dry skin, bradycardia (pulse less than 60 beats per min), height and weight was measured and body mass index was calculated, presence of edema and type of edema, blood pressure was recorded to see if any hypertension, they were also examined for presence of pallor, thyroid gland local examination was carried out to see presence of goiter.

**Statistical analysis**

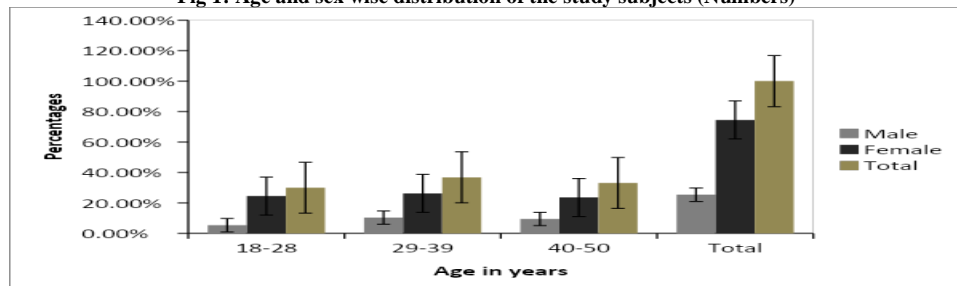
The data was entered in the Microsoft Excel worksheet and analyzed using proportions, p value less than 0.05 was taken as statistically significant.

**Results**

The results were categorized based on the age distribution. A total of 220 patients were included in the study, out of which 164 were female and 56 were male. Most commonly females with hypothyroidism were at the age groups of 18-28 and 29-39, whereas males with hypothyroidism were at the age groups of 29-39. Females had a higher prevalence rate than men. The female population constituted about 74.5% of total study population.



**Fig 1: Age and sex wise distribution of the study subjects (Numbers)**



**Fig 2: Age and sex wise distribution of the study subjects (Percentages)**

In females irrespective of age groups the most common symptom was menstrual irregularities (or) problems. Females with age group of 18-28 commonly has Dry skin, Hypokinesia, Hair loss, constipation whereas males with age group of 18-28 commonly has Constipation, Hair loss, lethargy and Dry skin.

**Table 1: Age group of 18-28**

Symptom	Number		Percentage	
	Female(54)	Male(12)	Female	Male
Cold intolerance	9	4	16.6%	33.3%
Weight gain	12	7	22.2%	58.3%
Lethargy	10	8	18.5%	66.6%
Dry skin	18	8	33.3%	66.6%
Hoarseness of voice	8	7	14.8%	58.3%
Constipation	13	9	24.0%	75%
Depression	0	0	0	0
Hair loss	15	9	27.7%	75%
Menstrual problems	35	0	64.8%	0
Hypokinesia	16	7	29.6%	58.3%
Forgetfulness	3	0	5.5%	0%
Dyspnoea	3	3	5.5 %	25%

Females with age groups of 29-39 commonly has Menstrual problems, Hair loss, Hypokinesia and weight gain whereas males with age of 29-39 commonly has Hair loss, Dry skin, Hypokinesia, lethargy and constipation.

**Table 2: Age group of 29-39**

Symptom	Number		Percentage	
	Female (58)	Male (23)	Female	Male
Cold intolerance	7	9	12.0%	39.1%
Weight gain	22	13	37.9%	56.5%
Lethargy	15	18	25.8%	78.2%
Dry skin	16	19	27.5%	82.6%
Hoarseness of voice	8	7	13.7%	30.4%
Constipation	13	16	22.4%	69.5%
Depression	6	7	10.3%	30.4%
Hair loss	34	21	58.6%	91.3%
Menstrual problems	32	0	55.1%	0
Hypokinesia	27	18	46.5%	78.2%
Forgetfulness	4	5	6.8%	21.7%
dyspnoea	13	14	22.4 %	60.8%

Females with age groups of 40-50 commonly has Hair loss, Menstrual problems, Hypokinesia, and Constipation whereas males with age of 40-50 commonly has Constipation, Hair loss, Weight gain and Hypokinesia.

**Table 3: Age group of 40-50**

Symptom	Number		Percentage	
	Female (52)	Male (21)	Female	Male
Cold intolerance	9	12	17.3%	57.1%
Weight gain	13	15	25%	71.4%
Lethargy	12	13	23.0%	61.9%
Dry skin	21	14	40.3%	66.6%
Hoarseness of voice	9	9	17.3%	42.8%
Constipation	15	19	28.8%	90.4%
Depression	6	8	11.5%	38.0%
Hair loss	33	17	63.4%	80.9%
Menstrual problems	27	0	51.9%	0
Hypokinesia	23	15	44.2%	71.4%
Forgetfulness	5	8	9.6%	38.0%
Dyspnoea	10	13	19.2 %	61.9%

## Discussion

In the present study, most commonly females with hypothyroidism were at the age groups of 18-28 and 29-39, whereas males with hypothyroidism were at the age groups of 29-39. Our study found that females had a higher prevalence rate than men. Ravindra Kumar et al, found in their study that hypothyroidism was more common in females compared to males which is in accordance with the present study.<sup>19</sup> They found that dry skin was the most common symptom followed by loss of hairs, gain of weight, constipation, menstrual disturbances and hoarseness. Author also observed similar symptoms, but author could not document the loss of hairs in the present study. On clinic examination the authors found that gain in weight as well as dry skin was seen in 49.9% and 83.3% of the cases respectively. They noted that the goiter was seen in 16.6% of the cases while author found it in 10% of the case. 3.3% of their cases were hypertensives and six of their patients had bradycardia. Thus, most of their findings are in accordance with the findings of the present study[19]. Sharma M et al, carried out a study among 52 patients[20]. The mean age of the cases in their study was 37.2±14.2 years which is similar that author observed in

the present study. Females were more than males and author also found that hypothyroidism was more common in females compared to males. They found that 80.8% of the cases had grade II thyroiditis. They also noted that TSH was increased in 30.8% of the cases and decreased in 34.6% of the cases while 34.6% were normal. Raised Antithyroid peroxidase was seen in 94.5% of the cases[20]. Rabeya R et al, observed that males were more in their study compared to females.<sup>21</sup> But author found that hypothyroidism was more common in females compared to males. They noted that obesity was the risk factor for hypothyroidism. TSH levels were found to be significantly correlated with DBP and BMI. Based on their study they recommended that those with deranged lipid profile, should undergo regular screening for prevention of future complications[21]. In Males hair loss was found in 85.41% of patients. Constipation and Slowness of activity was found in 82.60% and 72.91% and of patients respectively. Weight gain and Lethargy was found in 65.21% and 71.73% of the patients respectively. Cold intolerance, Hoarseness of voice and Dry skin was found 39.13%, 39.13% and 27.27% of the patients respectively.

**General examination:** On general examination Females and males has almost 32.4% and 54.3% respectively then stands Oedema with 25% and 41.3% respectively later comes Pallor with 20.7% and 26% followed by Pulse < 60/min with 9.74% and 39.1% respectively of their total populations. In Females almost 29.2% of total Female study subjects has more BMI whereas in males 47.8% of their respective total study subjects.

Deshmukh V et al, found that the mean value of TSH in euthyroid patients was  $2.22 \pm 1.06 \mu\text{IU/mL}$  compared to  $9.8 \pm 7.22 \mu\text{IU/mL}$  in patients with sub clinical hypothyroidism. they noted that the prevalence of sub clinical hypothyroidism was 11.3% with more prevalence among females compared to males. Author also found that hypothyroidism was more common in females compared to males. In the authors study majority of the patients with sub clinical hypothyroidism were from 35- 54 years pf age. This is similar to the findings of the present study[22].

#### Conclusion

In our study we found a higher Female preponderance a finding which echoed in the previous literatures. Most patients belonged to the age groups of 29-39 years. The most common of the symptoms included Weight gain, Hair loss, Dry skin, Hoarseness of voice, Lethargy, Cold intolerance, Hypokinesia and Constipation. Any patient presenting with weight gain, lethargy, dry skin, hoarseness, dyspnoea, constipation, cold intolerance, depression, menstrual abnormalities, overweight, obesity, bradycardia, non-pitting edema, hypertension, pallor should be suspected of hypothyroidism and thyroid profile should be done to rule hypothyroidism. Not only this, author recommends that all people should routinely screen themselves for thyroid profile right from childhood. If normal, every three years the screening should be performed. Early detection of hypothyroidism is key to healthy life. All such people should also take appropriate vitamin D supplementation.

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