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# **Original Research Article**

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# A hospital based cross sectional study on clinical profile of patients with hypothyroidism

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#### **ABSTRACT**

**Background:** Comorbidities and complications are more in patients with hypothyroidism compared to other people. 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. Objective was to study the clinical profile of patients with hypothyroidism.

**Methods:** A hospital based cross sectional study was carried out among 40 clinically diagnosed and biochemically confirmed hypothyroid cases of age group 21-60 years of age. Detailed clinical history was taken to note down the presenting symptoms. Thorough clinical examination was done to ascertain the clinical features and confirm. Data was analyzed using proportions.

**Results:** The mean age of males was slightly more than females 36.8 years vs. 35.13 years. Total number of male patients was much lower i.e. only 10(25%) compared to 30(75%) female patients. The most common age group affected in either sexes was 31-40 years followed by 21-30 years. Among all the symptoms with which the patients presented, the most common symptom was weight gain which was seen in 29(72.5%) of the cases. The most common presenting sign was BMI >25 kg/m² in 27 cases i.e. 67.5% of the cases followed by dry skin in 25 cases i.e. 62.5%.

**Conclusions:** 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.

Keywords: Clinical profile, Dry skin, Edema, Hypothyroidism, Lethargy, Weight gain

# INTRODUCTION

Hypothyroidism is raised levels of Thyroid Stimulating Hormone with lower or normal T3 and T4. The symptoms with which the patients present are very broad. Some may have myxedema. Some may have organs affected severely if the condition is neglected. Some may remain with no symptoms in spite of raised TSH levels. It has been estimated that the prevalence of hypothyroidism ranges from 4-5% in the industrialized world compared to

4-15% for subclinical hypothyroidism in the same settings.<sup>1</sup>

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.<sup>2</sup>

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.<sup>3</sup>

Hypothyroidism remains neglected in India due to its presentation as most of the cases present with nonspecific signs and symptoms which are attributed to other causes. This hypothyroidism may be clinical or subclinical. If neglected and non-treated, there can be severe neurological and cardiovascular complications for the patients with hypothyroidism.<sup>4</sup> It has been estimated that the prevalence of hypothyroidism in India is 10.95%.<sup>5</sup>

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. <sup>6</sup> 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.<sup>7</sup>

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.

#### **METHODS**

The study was hospital based cross sectional study. Study place was present study was carried out at Department of General Medicine, Asram Medical College and Hospital, Eluru. Study period was from January 2018 to December 2018

Study population includes patients attending Department of General Medicine, Asram Medical College and Hospital, Eluru and fulfilling eligibility criteria of the study and detected to have hypothyroidism formed the study population for the present study. Thus, it was possible to include 40 such patients with hypothyroidism who consented to participate in the present study.

# Ethical considerations

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

# Inclusion criteria

• Patients with hypothyroidism,

- Aged 21-60 years of age,
- Willing to participate in the present study.

#### Exclusion criteria

- Patients with subclinical hypothyroidism, hyperthyroidism
- Associated severe co-morbidities
- Age <20 and >60 years
- Not willing to participate in the present study

During the study period, author was able to collect data on 40 patients with hypothyroidism of age 21-60 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. All this clinical examination data was recorded in the predesigned, pretested semi structured study questionnaire.

Then the patient was asked to go for thyroid profile. If the patient was willing then T3, T4 and TSH was done. If the patient was found to be hypothyroid, he was included in the present study after taking proper written informed consent

## 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**

Table 1 shows distribution of study subjects as per age and sex. The mean age of males with hypothyroidism was 36.8 years while that of females was a bit lower with 35.13 years. but total number of male patients was much lower i.e. only 10(25%) compared to 30(75%) female patients. This shows that hypothyroidism is very common in females and they tend to have it at a little bit of lower age compared to males. Among males most cases were seen in the age group of 31-40 years followed by 21-30 years. similar trend can be seen among females also i.e. most cases were seen in the age group of 31-40 years followed by 21-30 years.

Table 1: Distribution of study subjects as per age and sex.

Age in years	Male		Female	Female	
	Number	<b>%</b>	Number	<b>%</b>	
21-30	3	30	9	30	
31-40	4	40	15	50	
41-50	2	20	3	10	
51-60	1	10	3	10	
Total	10	100	30	100	
Mean±2(SD)	36.8±9.34 35.13±		35.13±9.2	1	

Table 2: Distribution of study subjects as per symptomatology.

<b>Presenting symptoms</b>	Number (n=40)	%
Lethargy	26	65
Hoarseness	16	40
Dyspnea	12	30
Weight gain	29	72.5
Constipation	20	50
Cold intolerance	20	50
Depression	10	25
Dry skin	25	62.5
Menstrual symptoms	12/30	40

Distribution of study subjects as per symptomatology. Among all the symptoms with which the patients presented, the most common symptom was weight gain which was seen in 29(72.5%) of the cases followed by lethargy in 26(65%) and dry skin in 25(62.5%) of the cases. Hoarseness was seen in 16 cases, dyspnea in 12 cases, constipation and cold intolerance in 20 cases each, and depression in 10 cases. Among 30 women with hypothyroidism, 12 cases i.e. 40% gave history of menstrual discomfort (Table 2).

Table 3: Distribution of study subjects as per presenting signs.

Presenting signs	Number	%
Pallor	9	22.5
Dry skin	25	62.5
BMI $>$ 25 kg/m <sup>2</sup>	27	67.5
Goitre	4	10
Non pitting edema	8	20
Bradycardia	16	40
Normotensive	31	77.5
Hypertensive	9	22.5

Distribution of study subjects as per presenting signs. The most common presenting sign was BMI  $>25~\text{kg/m}^2$  in 27 cases i.e. 67.5% of the cases followed by dry skin in 25 cases i.e. 62.5%. 40% of the cases had bradycardia, 20% of the cases had non pitting edema. 22.5% of the cases were hypertensive and same number of cases had pallor. Four cases (10%) presented with goiter (Table 3).

#### **DISCUSSION**

A hospital based cross sectional study was carried out among 40 clinically diagnosed and biochemically confirmed hypothyroid cases of age group 21-60 years of age. The mean age of males was slightly more than females 36.8 years vs 35.13 years. Total number of male patients was much lower i.e. only 10(25%) compared to 30(75%) female patients. The most common age group affected in either sexes was 31-40 years followed by 21-30 years. Among all the symptoms with which the patients presented, the most common symptom was weight gain which was seen in 29(72.5%) of the cases. The most common presenting sign was BMI >25 kg/m² in 27 cases i.e. 67.5% of the cases followed by dry skin in 25 cases i.e. 62.5%.

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.8 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.8

Sharma M et al, carried out a study among 52 patients.<sup>9</sup> 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 see bub 94.5% of the cases.<sup>9</sup>

Rabeya R et al, observed that males were more in their study compared to females. <sup>10</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. <sup>10</sup>

Deshmukh V et al, found that the mean value of TSH in euthyroid patients was  $2.22\pm1.06~\mu lu/mL$  compared to  $9.8\pm7.22~\mu lu/mL$  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.<sup>11</sup>

Unnikrishnan AG et al, carried out a large study on 5376 adults and noted that the prevalence of hypothyroidism was 10.95%.<sup>5</sup> Prevalence was more in females i.e. 15.86% compared to only 5.02% in males. Author also found that hypothyroidism was more common in females compared to males. It was also more in older age group. Author also found that majority of the patients with hypothyroidism belonged to the age group of 31-50 years of age.<sup>5</sup>

#### **CONCLUSION**

Any patient presenting with weight gain, lethargy, dry hoarseness, dyspnoea, constipation, cold skin, depression, intolerance, menstrual abnormalities, overweight, obesity, bradycardia, non-pitting edema, pallor hypertension, should be suspected hypothyroidism and thyroid profile should be done to rule hypothyroidism. Not only this, author recommend 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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Ethical approval: The study was approved by the

Institutional Ethics Committee

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