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Research Article

A study of thyroid disorders in females attending obstetrics and gynecology outpatient department of a tertiary care institute of central India

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ABSTRACT

Background: The study was conducted with an objective to study the spectrum of thyroid dysfunction and to correlate clinical symptoms with abnormal thyroid function.
Methods: A total no. of 1010 women, attending the Gynecology and Medicine OPD of M.Y. Hospital, Indore, MP were subjected to screening with TSH levels estimation. The women with abnormal TSH values were then evaluated for various clinical symptoms.
Results: Out of total 1010 women, 120 had abnormal TSH. The prevalence was high (11.88%). Hypothyroidism (71.66%) was more common than hyperthyroidism (28.33%). The incidence of thyroid disorders was higher with advancing age. Abnormal TSH levels had a linear correlation with increasing BMI. Majority of the patients presented with vague symptoms commonest being weight changes (24.15%). Abnormal uterine bleeding (5.8%) and infertility (5.8%) were the chief gynecological complaints. Hypertension was strongly associated with thyroid dysfunction.
Conclusions: Thyroid dysfunction is a highly prevalent problem in female population. Estimation of TSH level is a good screening tool; however complete thyroid profile is required before initiating treatment. The incidence increases with advancing age, hypothyroidism being the more common variant. Classical symptoms may not be present in majority of patients who have a vague clinical picture. This study recommends universal screening of women for thyroid dysfunction in view of high prevalence, vague and varied presentation.

Keywords: Universal screening, Thyroid stimulating hormone, Abnormal uterine bleeding

INTRODUCTION

Thyroid diseases are one of the commonly occurring endocrine disorders worldwide. In India, these are the most common among all the endocrine diseases.[1] About 42 million people in India suffer from varied thyroid disorders.[2] Thyroid disorders in India are characterized by a high prevalence, which is around 11% of adult population.[3] There is also minimal diagnosis, low awareness and lesser involvement of doctors in treatment.

The clinical spectrum of thyroid disease varies from asymptomatic subclinical disease detected by laboratory screening to overt thyroid storm and myxedema coma. However, laboratory detection of subclinical or early thyroid disease usually occurs before overt manifestations of disease develop. The clinician must maintain a high degree of suspicion for thyroid disease as its signs and symptoms can mimic those of other common diseases (e.g., fatigue, dyspnea, palpitations associated with anemia). This article reviews the symptoms of thyroid

disease and briefly discusses aspects of the laboratory evaluation.

Serum TSH measurement is the most important and sensitive test for screening of thyroid disorders because, serum TSH has a Log Linier relationship with circulating thyroid hormone levels; a twofold change in Free Thyroxin (FT4) will produce a 100 fold change in TSH. Thus, serum TSH measurement is the necessary test for diagnosis of mild thyroid failure when the peripheral thyroid hormone levels are within normal laboratory range.[4]

Aims and objectives

1. To find the symptoms of thyroid disorders in women of all age groups (pre-pubertal; reproductive and postmenopausal) in our geographical area.
2. To study the demographic details of patients with thyroid disorders.

Findings were critically analyzed, tabulated and conclusions drawn.

METHODS

Study design

The present study was conducted in the Department of Obstetrics & Gynecology M.G.M. Medical College M.Y. Hospital, Indore.

Type of study

It was an observational, prospective hospital-based case study carried out for 6 months.

Sample population and inclusion criteria

1010 women attending Gynecology and Medicine OPD of MGM Medical College & Associated Maharaja Yashwant Rao group of Hospitals, Indore, MP were subjected to screening of thyroid function by assessment of serum TSH levels. The women were from 11 to 80 yrs of age.

120 women were diagnosed with thyroid dysfunction based on abnormal serum TSH levels.

Exclusion criteria

Patients with known thyroid disorders and/or on treatment of the relevant thyroid disease were excluded. Patients having cancer and pregnancy were also excluded from the study.

Study procedure

The reference range of serum TSH is taken as 0.5-4.7 mU/L.[5] The nature and purpose of the study were explained to the patients and written consent was taken. Complete history, which included menstrual, obstetric, medical, surgical, drug intake and personal history, was recorded. Based on the type of thyroid disorder, the patients were managed accordingly in a multidisciplinary manner, the description of which is beyond the scope of the present study. Modified Kuppu Swami Scale was used to determine the socioeconomic status of the patients.

Statistical analysis

The statistical analysis was plotted on column, pie chart and scattered graph.

Ethical issues

Approval for this study was obtained from the Hospital Ethics Committee of M.G.M. Medical College M.Y. Hospital; Indore. The patients included in the study did not undergo experimental trial of any drug or procedure.

RESULTS

Maximum numbers of patients having thyroid dysfunction are in the age group of 21-50 yrs age (79.15%).

Table 1: Age-wise distribution.

Age group	Total no. of patients	Percentage (%)
11-20	5	4.16
21-30	53	44.16
31-40	25	20.83
41-50	17	14.16
51-60	15	12.5
61-70	3	2.5
71-80	2	1.66

50% of the patients are having BMI more than 30.

Table 2: Patient distribution according to BMI.

BMI	No. of patient	Percentage
Underweight	14	11.66
Normal	49	40.83
Overweight	37	33.83
Obese	20	16.66

Most of the patients belong to middle socioeconomic status.

The predominant thyroid dysfunction is hypothyroidism affecting about 72% of woman in the study.

Table 3: Patients distribution according to socio-economic status.

S/E status	No. of patients	Percentages
Low	25	20.83
Middle	53	44.16
High	42	35

Table 4: Distribution of the patient (hyper/hypothyroidism).

Disorder	Tsh value (mu/l)	Total	Mean	Percentage (%)
Hyperthyroidism	<0.5	34	1.42	28.33
Hypotyroidism	>4.7	86	42.61	71.66

In our study, the most common symptoms of thyroid dysfunction are weight changes (24.16%), generalized body ache (12.5%), generalized edema (11.66%) and changes in bowel habits (8.33%). 3.33% of the patients are not having any complain pertaining to thyroid disorders.

Table 5: General symptoms.

Symptoms	No. of patients	Percentage(%)
Bony pain	5	4.16
Generalised body ache	15	12.5
Lethargy	9	7.5
Wt. Changes	29	24.16
Appetite change	4	3.33
Skin changes	1	0.83
Hypertrichosis	4	3.33
Dyspnoea	5	4.16
Changes in bowel habits	10	8.33
Hair fall	3	2.5
Body swelling	14	11.66
Nausea	5	4.16
Voice changes	2	1.66
Uneasiness	6	5
Numbness in limbs	1	0.83
Fatigue	8	6.66
No complaints	4	3.33
Neck swelling	7	5.83
Difficulty in deglutition	1	0.83

The most common gynecological conditions associated with thyroid disorders are AUB and infertility both accounting for 5.83%.

Headache was the chief complaint affecting about 7% of patients, followed by tremors and depression pertaining to central nervous system.

Hypertension and diabetes mellitus were the chief ailments coexisting with thyroid dysfunctions, each affecting about 8% and 4% respectively.

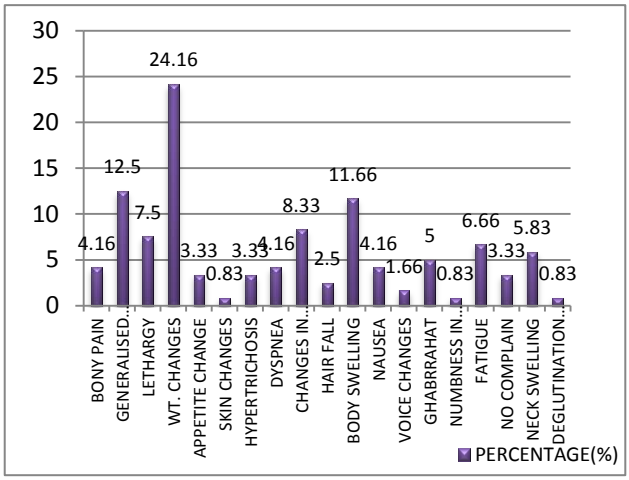

Figure 1: Symptomatology of thyroid dysfunction.

Table 6: Associated gynec conditions.

Diagnosis	No. of patients	Percentage (%)
Uterine leiomyoma	4	3.33
Pcod	4	3.33
Aub		
(a)Dub	4	3.33
(b)Puberty menorrhagia	1	0.83
(c)Perimenopausal bleeding/post-menopausal	2	1.66
Infertility	7	5.83

Table 7: CNS symptoms.

Symptoms	No. of patients	Percentage(%)
Depression	4	3.33
Tremors	6	5
Sleep changes	5	4.16
Headache	8	6.66

Table 8: Associated illnesses.

Symptoms	No. of patients	Percentage (%)
Asthma	1	0.83
Hypertension	9	7.5
Diabetes mellitus	5	4.1
Ulcerative collitis	1	0.83

DISCUSSION

The prevalence of thyroid dysfunction was high (11.88%) in our study. A similar study conducted in Eastern Nepal observed that nearly 30% of the population was suffering from thyroid dysfunction.[6] Hypothyroidism is generally associated with iodine deficiency and Nepal is an endemic area of iodine deficiency with prevalence of approximately 26.5% of iodine deficiency disorder.[7] The prevalence of hypothyroidism in various studies from around the world shows a considerable variation and its current prevalence ranges from as low as 1% to as high as 20% for subclinical and 1-2% for overt hypothyroidism.[8]

Although all age groups are affected by thyroid dysfunction, a high no of subjects were observed between age group of 21-50 years age (79.15%). Arindam bose et al[9] also observed the same prevalence in this age group (Table 1).

Cases were distributed according to BMI, maximum (55%) were overweight because of increased prevalence of hypothyroidism (71.66%). It was also observed that the TSH levels increased in direct proportion to increasing BMI. Our finding is validated by the study conducted by Amrita Solanki et al[10] (Table 2).

Maximum patient belongs to middle social economic status but disease may affect both high and low socioeconomic status in a significant way (Table 3).

In the present study, the prevalence of hypothyroidism was higher (71.66%) than hyperthyroidism (27.33%). Rebecca Abraham et al[11] reported a prevalence of 72.5% of hypothyroidism among all cases of thyroid disorders in Puducherry. This is in acceptance of the fact that hypothyroidism remains the leading thyroid disease in our country (Table 4).

In our study, the most common symptoms of hypothyroidism are weight changes (24.16%), generalized body ache (12.5%), generalized edema (11.66%) and changes in bowel habits (8.33%). The most common symptom of hyperthyroidism is palpitation (5%). In a similar study by RV Jayakumar et al[12] the most common symptoms of hypothyroidism were weakness (99%), skin changes (97%), lethargy (91%) and slow speech (91%). This difference in the findings may be explained by the fact that the most of the patients in our study; about 65%, were from low/middle economic group. The lack of awareness and social bondage, apart from variation in sample size and ethnic variation are probably the factors responsible. Interestingly, 3.33% of the patients did not have any complain regarding thyroid disorders. Universal Serum TSH testing acted as a boon for them as they could be managed accordingly even before the onset of clinical symptoms (Table 5).

The most common associated gynecological complaints are AUB and infertility (both 5.83%). In the study of Koutras DA et al[13] menstrual disturbances are the most common symptoms (21.5%), while polymenorrhea is more common in hypothyroid patients (Table 6).

Predominant CNS manifestations include depression and sleep changes in cases of hypothyroidism, whereas tremors and headache are the chief symptoms in hyperthyroid patients. Haggerty JJ et al[14] also found a correlation between thyroid dysfunction and depression (Table 7).

4.1% of patients with thyroid dysfunction had diabetes mellitus. Literature shows strong evidence of coexistence of these 2 endocrine disorders. Ashrafuzzaman SM et al[15] found diabetes in 7.01% cases of hypothyroid subjects (Table 8). 7.5% patients had associated hypertension. Klein L et al[16] also concluded that hypothyroidism is one of the causes of secondary hypertension (Table 8).

CONCLUSION

The prevalence of thyroid dysfunction is high in central India. Hypothyroidism is more common than hyperthyroidism. The study has revealed that women in the age group of 21 to 50 are more prone for thyroid disorders. A strong suspicion of thyroid disease should be considered in patients who present with vague symptoms like easy fatigability, generalized weakness, weight changes etc. which are generally ignored. In women of any age group, menstrual problems should warrant thyroid function tests. There is still a controversy regarding the range of TSH levels and different societies follow different guidelines. Yet, estimation of serum TSH remains the first line screening test. Complete thyroid panel is needed for an accurate diagnosis and assessment of thyroid function, before initiating treatment.

Classical symptoms are not be present in majority of patients who may have a varied clinical picture. This study recommends universal screening of women for thyroid dysfunction in view of high prevalence, vague and varied presentations. Also, thyroid disorders are strongly associated with various systemic diseases. Hence screening for the same may serve as a one stop window for managing different ailments in a well-integrated multidisciplinary manner. As the present study was a hospital based study, it may not represent the whole population. Still, the study has identified the burden of thyroid dysfunction in patients attending OPD at MYH Indore and can be used as baseline data for future studies.

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