

## **Research Article**

### **Clinical profile of patients with hyperthyroidism attending tertiary care hospital**

**Dr. U.M. Natarajan<sup>1</sup>, Dr. S.P. Prakash<sup>2</sup>**

<sup>1</sup>Associate Professor, Department of Medicine, Kerala Medical College, Mangod, Cherupulassery, Palakkad

<sup>2</sup>Professor, Department of Medicine, Kerala Medical College, Mangod, Cherupulassery, Palakkad

#### **\*Corresponding author**

Dr. U.M. Natarajan

Email: [ramspms@gmail.com](mailto:ramspms@gmail.com)

---

**Abstract:** Thyroid hormones play a fundamental role in metabolism and are quintessential to maintaining the right biology of the body. Fluctuations in the levels of these hormones may disrupt this rhythm and cause dysfunction of organs and organ systems. In this method Totally 100 patients were included for the study and patients who were not willing to participate in the study were excluded. The sampling technique adopted was non probability purposive random sampling technique. Data was collected using a pre tested semi structured questionnaire. In results it was found that 66% had diffuse toxic goiter, 14% had toxic multi nodular goiter, 2% solitary toxic nodule, and 2% thyroiditis. In conclusion Graves' disease is the most common cause of hyperthyroidism.

**Keywords:** Thyroid hormones, Graves' disease, Hyperthyroidism, Goitre.

---

#### **INTRODUCTION:**

Hyperthyroidism is the syndrome that develops after body tissues are exposed to increased concentrations of the thyroid hormones (T<sub>3</sub> or T<sub>4</sub> or both) and the clinical manifestations of thyro toxicosis can affect every organ[1]. It is a common endocrine metabolic disorder, affecting about 2% of women and 0.2% of men. The presentation varies with age, the classical symptoms and signs being seen in young and middle aged patients but less so in the elderly[1]. A number of causes are in literature as the causes of Thyrotoxicosis [1, 2] and they include:

Common causes in order of decreasing frequency are Graves disease (70-80%), thyroiditis, Toxic nodular goiter, Toxic thyroid adenoma and exogenous hyperthyroidism (iatrogenic, factitious, iodine induced).

The rare causes include excess thyroid stimulating hormone (troptoblastic tumors, pituitary tumors) and ectopic thyroxine production.

The common symptoms of thyro toxicosis include [3]: Nervousness and increased activity; increased sweating; hypersensitivity to heat; palpitations; fatigue; increased appetite; weight loss; tachycardia, insomnia; weakness; and frequent bowel movements. The common signs include: Goitre; tachycardia; widened pulse pressure; warm, fine, moist skin; tremor; and eye signs (stare, lid lag, lid retraction

and photophobia). Atrial fibrillation and atrial flutter [4] are rare signs.

Thyro toxicosis is found in various age groups and in different clinical situations. For instance, a study by LuboshitZky *et al.*; [5] reported a prevalence of 0.8% for hyperthyroidism in children of various age groups, with lowest occurrence in age 1-2 years and peak occurrence in puberty. Muller *et al.*; [6] reported the occurrence of hyperthyroidism in the elderly.

Clinically, almost every organ is affected and patients may initially present to various medical specialists before they eventually get diagnosed for thyroid dysfunction. Also, thyro toxicosis usually develops insidiously and most patients have had symptoms for at least 3-6months before presentation [7]. All these facts suggest that a thyrotoxic patient often has delayed diagnosis in spite of the available knowledge on this disease, this is avoidable

Hyperthyroidism, often referred to as an overactive thyroid, is a condition in which the thyroid gland produces and secretes excessive amounts of the free and circulating thyroid hormones, triiodothyronine(T<sub>3</sub>) and/or thyroxine (T<sub>4</sub>). This is the opposite of hypothyroidism, which is the reduced production and secretion of T<sub>3</sub> and/or T<sub>4</sub>. Graves' disease is the most common cause of hyperthyroidism.

**METHODOLOGY:**

A Descriptive study was carried out at a tertiary care hospital to know the clinical profile of patients with hyperthyroidism. The study was carried out for one year and the patients with hyperthyroidism attending tertiary care centre during the study period formed the study subjects. Totally 100 patients were included for the study and patients who were not willing to participate in the study were excluded. The sampling technique adopted was non probability purposive random sampling technique. Data was collected using a pre tested semi structured questionnaire. After obtaining the oral informed consent, relevant history was taken and clinical examination was done. Data was entered in Microsoft excel and was analysed using SPSS 20.0. Relevant investigations was done to know the thyroid profile proportion was used to describe the sample results.

**RESULTS:**

Among 100 patients, it was found that 30% of patients were in the age group of 21 – 30 years, 42% of patients were in the age group of 31 – 40 years, 20% of patients were in the age group of 41 – 50 years and 8% were in the age group of 51 – 60 years.

The most common presenting symptom was Palpitation (90%) followed by Tremulousness of hands (84%), anxiety (82%), weight loss (76%), and dyspnea (80.0%), and heat intolerance (78%), increased sweating (74%), and increased appetite (86%)(Table-1).

Abnormal eye signs were observed in 30% of patients. Tachycardia was found in 48% of patients. Atrial fibrillation was found in 10% of patients. Hypertension was found in 18% of patients. Goiter was found in 84% of patients(Table-2)

Out of 50 patients, 42 patients had presented with goiter. Among them, 66% had diffuse toxic goiter, 14% had toxic multi nodular goiter, 2% solitary toxic nodule, and 2% thyroiditis (Table-3).

**Table-1: Distribution of study subjects based on symptoms**

Symptoms	Frequency	Percentage
Palpitation	90.0	90.0
Tremulousness of hands	84.0	84.0
Anxiety	82.0	82.0
Weight loss	76.0	76.0
Dyspnoea	80.0	80.0
Heat intolerance	78.0	78.0
Increased sweating	74.0	74.0
Increased appetite	86.0	86.0
Hyper defecation	64.0	64.0
Sleep disturbances	64.0	64.0

**Table-2: Distribution based on Signs of hyperthyroidism**

Signs of hyperthyroidism	Frequency	Percentage
1.Warm skin	88.0	88.0
2.tremor	64.0	64.0
3. lid lag	52.0	52.0
4. Ophthalmopathy	30.0	30.0
5. Hyperactivity	24.0	24.0
6. Proximal myopathy	14.0	14.0
7.Thyroid acropachy	04.0	04.0
8.Pretibial myxedema	04.0	04.0
<b>9.Pulse rate</b>		
Normal;	64.0	64.0
Tachycardia	48.0	48.0
<b>10 Rhythm</b>		
Regular	90.0	90.0
Irregular (AF)	10.0	10.0
<b>11.Blood pressure</b>		
Normal	82.0	82.0
Hypertension	18.0	18.0
<b>12.Goiter grade</b>		
Grade 0	16.0	16.0
Grade I	42.0	42.0
Grade 2	42.0	42.0

**Table 3: Distribution based on type of goiter**

Type	Frequency	Percentage
Diffuse toxic goiter (Graves' disease)	66.0	66.0
Toxic multi nodular goiter	14.0	14.0
Solitary toxic nodule	02.0	02.0
Thyroiditis	02.0	02.0

**DISCUSSION:**

The study group comprised 32% males and 68% females aged above 20 years and 60 yr (20-60 years) at the time of diagnosis. The mean age of the study subject was 35.85 ± 2.5years. The proportion of males in the study group is higher than figures reported in literature [8]. This discrepancy may be because our hospital is a tertiary referral hospital and so patients with hyperthyroidism will be specifically referred to the department of endocrinology. Hence, this cannot be compared with results of population-based surveys. However, these findings suggest that this disease is increasingly being diagnosed in males also. The mean duration of symptoms in months was 12.10 months, which is much longer than that reported by Boelaert *et al.*:[8]. The increased time noted in the present study calls our attention to focus on the prompt medical care of older individuals as a delayed diagnosis may have major implications in this age group.

The majority of patients had Graves' disease

accounting for 66% patients conforming to previous literature [9, 10, 11]. The most frequently observed symptom in the whole study group of 50 patients was Palpitation (90%) followed by Tremulousness of hands (84%), anxiety (82%), weight loss (76%), dyspnea (80.0%).

The most common signs observed were warm skin (88%), tremor (64%) and lid lag (52.0%) in that order. Pretibial myxedema was seen in 4% patient and thyroid acropachy in 4%. The overall presentation is concordant with the clinical features described in the literature [11, 12]. Boelaert *et al.*; [12] reported the following symptoms in the order of frequency in their study of 3049 patients with hyperthyroidism –weight loss (60.7%), heat intolerance (54.9%) , tremor (53.9%) and palpitation (50.8%). This contrasts with theirs in the presence of tiredness in 77% of patients. Though in a lesser number of patients Panita *et al.*; [10] had reported tiredness as a symptom in hyperthyroid patients in their study of over 900 patients. These investigators have reported fatigue in 28% of patients in the younger age group and 37.55 in the older age group. The most prominent cardiovascular abnormalities in the study group were systolic hypertension, tachycardia and AF. It is interesting that 4% our patients had thyroid acropachy that is found in less than 1% of patients with Graves' disease. Lid lag was observed in 52% of patients. In this cohort of 50 patients, Graves' disease was present in 66% and ophthalmopathy in 30% patients. The mean clinical activity score was 1.54.

Graves' disease is considered to be the most common etiology of hyperthyroidism. However, toxic multinodular goitre becomes an important cause of hyperthyroidism especially in iodine deficient areas [11]. Increased prevalence of toxic nodular goitre has been reported by previous studies [13].

#### CONCLUSION:

Graves's disease was the more common presentation in this study.

#### REFERENCES:

1. Warner M Burch; Endocrinology for the House Officer, 1984; 101-102.
2. Gilkison CR; Thyro toxicosis. Recognition and Management. Lippincott's-prim-care-pract. 1997; 1: 485-498
3. Robert Berkow, Adrew I. Fletcher; Mark manual of diagnosis and therapy 15th edition 1987; 1038-1039.
4. Suarez WA, Van Hare GF, Wexler ID, Arnald JE; Atrial flutter: an uncommon paediatric manifestation of hyperthyroidism. Paediatrics. 1997; 100: 11.
5. LuboshitZky R, Dgani Y, Attar S, Qupty G, Tamir E Flatau; Goiter prevalence in children

- immigrating from an endemic goiter area in Ethiopia to Israel, 1995.
6. Muller GM, WS Levitt, SJ Louw; Thyroid dysfunction in the elderly S. Afr. Med. J. 1997; 87: 1119-1123.
7. Thyrotoxicosis, [http://www.studentbmj.com/ba ck\\_i ssues/0300/education/62.html](http://www.studentbmj.com/ba ck_i ssues/0300/education/62.html)
8. Mourits MP, Prummel MF, Wiersinga WM, Koornneef L; Clinical activity scoreas a guide in the management of patients with Graves' ophthalmopathy. Clin Endocrinol (Oxf). 1997; 47(1):9-14.
9. Maitra A, Abbas AK; The endocrine system In: Kumar V, Abbas AK, Fausto N editors: Robbin's and cotran Pathologic basis of disease 7<sup>th</sup>ed: Saunders Pennsylvania 2005:1155-1183.
10. Panita Limpawattana, Kittisak Sawanyawisuth, Ajanee Mahakkanukrauha, Chaiyasit Wongvipaporn; Clinical Manifestations of Primary Hyperthyroidism in the Elderly Patients at the Out-Patient Clinic of Srinagarind Hospital. J. Med Assoc Thai. 2006; 89(2).
11. Khurana AK, Sunder S, Ahluwalia BK, Malhotra KC, Gupta S; A clinico investigative profile in Graves' ophthalmopathy. Ind J Ophthol, 1992; 40(2): 56-58.
12. Boelaert K, Torlinska B, holder RL, Franklyn JA; Older subjects with hyperthyroidism presents with a paucity of symptoms and signs: A large cross sectional study. J ClinEndocrino Meta, 2010; 95(6):2715-2726.
13. Mourits MP, Prummel MF, Wiersinga WM, Koornneef L; Clinical activity scoreas a guide in the management of patients with Graves' ophthalmopathy. Clin Endocrinol (Oxf). 1997; 47(1):9-14.