

Clinical Profile Of Hypothyroidism

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Introduction

Hypothyroidism is the most common form of thyroid disorder and is a very commonly encountered problem in clinical practice. It usually results from either treatment of hyperthyroidism or from primary auto-immune thyroid disease¹. The thyroid may be goitrous or atrophic. Primary thyroid failure shows a large spectrum of presentation. Patients with early disease usually have none of minimal clinical signs (subclinical hypothyroidism)². Although hypothyroidism may be instantly recognizable, the objective is to make the diagnosis before it is so obvious¹. In the present study, a group of patients with different grades of overt and subclinical hypothyroidism were studied to assess the reliability of existing clinical and pathological parameters to confirm hypothyroid state.

Materials and Methods

The study was carried out in the medical clinic of S. E. Rly. Polyclinic, Nagpur from May 1995-June 1997. Thirty hypothyroid patients (Female-19, Male-11) in the age group of 18-65 years were the subjects of this study. The study protocol included thorough history taking, clinical evaluation, routine clinical investigation (Haemogram, Sr. Cholesterol, ECG, X-ray Chest) and Serum T₃, T₄ and TSH estimation. Thyroid hormone assay was done by ELISA method (LISA-BEAD, RANBAXY) using a semi-autoanalyzer. The diagnosis of sub-clinical hypothyroidism was based on normal / low-normal total serum thyroxine (T₄) and total tri-iodothyronine (T₃) concentration but with basal thyroid stimulating hormone (TSH) levels more than normal (Normal T₃-0.8-2.1 ng/dl, T₄-42 -120 ng/dl and TSH-0.2-5 MIU/ml). The patients with sub-clinical hypothyroidism were further divided into three grades (Grade-I: TSH<10 MIU/ml, Grade-II : -- TSH 10-20 MIU/ml, Grade III :--TSH> 20 MIU/ml)³. Cases of overt hypothyroidism were divided into two grades (Grade IV-Normal T₃, increased TSH and decreased T₄, Grade V : decreased T₃, decreased T₄ and increased TSH)².

| Observations | | | |
|--|------|--------|---------------|
| Table no. I | | | |
| Age and Sex Distribution (Mean Age : 40.96+ 11.6 Years). | | | |
| No. of cases | | | |
| Age groups in years. | Male | Female | Total (% age) |
| 15-30 | 1 | 5 | 6 (20) |
| 31-45 | 4 | 8 | 12 (40) |
| 46-60 | 5 | 6 | 11 (36.66) |
| ≥61 | 1 | - | 1 (3.33) |
| | 11 | 19 | 30 |

| Table no. II | |
|---|-----------------|
| Presenting Signs and Symptoms (n=30) < /STRONG> | |
| Signs. | NO. of cases(%) |
| Oedema/Perioribital Puffiness. | 17 (56.6) |
| Delayed Ankle Jerk. | 16 (53.3) |
| Anaemia. | 16 (53.3) |
| Hypertension. | 15 (50) |
| Dry Coarse skin. | 12 (40) |
| Alopecia | 7 (23.3) |
| Bradycardia. | 5 (16.6) |
| Goitre | 2 (6.6) |
| Symptoms | NO. of cases(%) |
| Constipation. | 18 (60) |
| Cold Intolerance. | 16 (53.3) |
| Fatigue and Lethargy. | 14 (46.6) |
| Hoarseness of Voice. | 13 (43.3) |
| Muscle cramps. | 9 (30) |
| Weight gain. | 9 (30) |
| Menstrual irregularities | 7 (36.8)* |
| Menorrhagia | 5 (26.3)* |
| Oligomenorrhea | 2 (10.5)* |
| Angina | 5 (16.6) |
| Deafness | 3 (30) |
| Infertility | 1(5.25)* |

*percentage of female patients

| Table no. III | | |
|-----------------------------|-----------------|-----------|
| Severity of Hypothyroidism | | |
| Severity | NO. of cases(%) | Total (%) |
| Sub-clinical Hypothyroidism | | 6 (20) |
| Grade—I | -- | |
| Grade—II | 2 | |
| Grade—III | 4 | |
| Overt Hypothyroidism : | | 24 (80) |
| Grade—IV | 10 | |
| Grade—V | 14 | |

| Table no. IV | |
|--|------------------|
| Laboratory Investigations | |
| Investigation | Results |
| Haemoglobin (Hb) gm%(Mean \pm SD) | 9.8 \pm 1.08 |
| Peripheral Smear Exam : | |
| Normocytic Normochronic | 12 (40%) |
| Dimorphic | 6 (20%) |
| Serum Cholesterol (mg/dl)(Mean \pm SD) | 238.2 \pm 44.3 |
| X-ray Chest P.A.: | |
| Cardiomegaly (L.V. Contour) | 16 (53.3%) |
| Pericardial effusion. | 2 (6.6%) |
| ECG : | |
| Low voltage complex | 4 (13.3%) |
| T-Wave changes. | 5 (16.6%) |
| Sinus Bradycardia. | 4 (13.3%) |

Discussion

The prevalence of hypothyroidism is in excess of 2% in the general population. Although most cases occur in the females and the most common age of onset is in the 40-60 years of age group, it can occur in both sexes at any age¹. Hypothyroidism (both subclinical and overt) is associated with increased cardiovascular morbidity and the patients with subclinical hypothyroidism if not diagnosed early, have increased probability of subsequently leading with frank hypothyroidism². Clinical features are of paramount importance in the diagnosis of hypothyroidism. They include lethargy, dry coarse skin, loss of hair, periorbital puffiness, sensitivity to cold, hoarse voice, diminished hearing, bradycardia, stiff and aching muscles and central chest pain¹. Hypothyroidism has been recognised as an entity in a wide variety of gynaecologic disorder

ranging from abnormal sexual development to menstrual aberrations, anovulation, infertility and reproductive wastage when pregnancy is achieved. Lahiri et al (1996) in their series of 128 hypothyroid women found that oligomenorrhoea was the commonest menstrual abnormality and next common was menorrhagia. 46.89% women in their series had normal menstrual pattern. 71.09% women in their series had subclinical hypothyroidism⁴. A total of 30 (Female-19, Male-11) patients, (subclinical hypothyroidism-6, overt hypothyroidism-24) were the subjects of the present study. Maximum number of cases (76.6%) were found in the age group of 31-60 years of age. Two cases (6.6%) had post ablative (thyroid surgery) hypothyroidism. Two cases (6.6%) had FNAC proved Hashimoto's thyroiditis. Common presenting symptoms were constipation (60%), cold intolerance (53.3%), fatigue and lethargy (43.6%), and hoarseness of voice (43.3%). Common presenting signs were oedema/periorbital puffiness (56.6%), delayed ankle jerk (53.3%), anaemia (53.3%), hypertension (50%) and dry coarse skin (40%). In our study, 36.8% women had menstrual irregularities (26.3%) cases. Majority (53.3%) showed features of cardiomegaly with left ventricular contour in chest x-ray. Echocardiography may be helpful in these patients and may detect pericardial effusion upto 30-35% of cases.

Typical electrocardiographic changes like bradycardia, low amplitude QRS complexes, and flattened or inverted TWaves⁵ were found in 43.3% of cases. Basal TSH concentration was raised in all cases. Hypothyroidism is not always apparent clinically, but an elevated serum TSH will readily diagnose primary hypothyroidism. Clinical features are of paramount importance in the diagnosis of hypothyroidism. Strong degree of clinical suspicion is required to diagnose subclinical hypothyroidism, which if not diagnosed may lead to overt hypothyroidism over time. For initial diagnosis of hypothyroidism, estimation of serum TSH followed by serum T4 levels are of greater diagnostic value. Estimation of serum T3 level is not much useful in the diagnosis of hypothyroidism. Other investigations like estimation of serum cholesterol, ECG and X-ray chest have supportive value in the diagnosis of hypothyroidism. For diagnosis of pericardial effusion and assessing structure and function of heart in hypothyroidism echocardiography may be the investigation of choice.

Summary

Hypothyroidism is the most common form of thyroid disorder. Thirty hypothyroid patients (Female-19, Male-11) in the age group of 18-65 years were studied to assess the reliability of the existing clinical and pathological parameters to confirm hypothyroid state. All the patients were having primary hypothyroidism. Two patients (6.6%) had history of thyroid surgery. Six (20%) patients had sub-clinical hypothyroidism. Frequently encountered clinical features included weight gain/oedema, constipation, hoarseness of voice, anaemia, menstrual irregularities, hypertension, delayed ankle jerk and dry flaky skin. Estimation of serum TSH was very useful (raised in all cases), followed by estimation serum T4 (decreased level in 24 cases). Serum cholesterol, haemogram, ECG and X-ray Chest had supportive value in the diagnosis of hypothyroid state.

References

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