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THE INCIDENCE OF SUBCLINICAL HYPOTHYROIDISM IN FEMALES OVER FIFTY YEARS OF AGE

General Medicine

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ABSTRACT

Introduction: The term subclinical hypothyroidism was originally used to describe the patient with a low-normal free T4 but a slightly elevated serum TSH level. Other terms for this condition are mild hypothyroidism early thyroid failure, preclinical hypothyroidism, and decreased thyroid reserve. The TSH elevation in such patients is modest, with values typically between 4 and 15 mU/L.

Aims And Objectives: To estimate the prevalence of subclinical hypothyroidism among women above the age of 50 yrs, To study the relationship of subclinical hypothyroidism to Hypertension, Diabetes and Ischemic Heart Disease in those patients

Materials And Methods: Women above the age of 50 years attending Medical outpatient clinic of Alluri Sitarama Raju Academy of Medical Sciences, Eluru from November 2020 to July 2021 were studied. A sample of 100 women was randomly selected. All the participants were examined for thyroid function. Women with subclinical hypothyroidism were considered as cases, and women without subclinical hypothyroidism were considered as controls.

Exclusion Criteria: Those with Known thyroid disease ,History of neck irradiation , Chronic renal failure Severe illness, Taking drugs such as beta-blockers, amiodarone, interferon –α were excluded

Results : 100 women above the age of 50 years who visited the medical outpatient clinic during the study period were studied 23 women were found to have the criteria set for the definition of subclinical hypothyroidism. There were 43 patients in the age group 50-59 of which 7were having subclinical hypothyroidism .In the 60-69 age group there were 33 patients of which 9were having subclinical hypothyroidism. In the 70 and above age group there were 24 patients of which 7 were having subclinical hypothyroidism.

Conclusion: Subclinical hypothyroidism is highly prevalent in elderly women above the age of 50 years, Patients with subclinical hypothyroidism are more prone to develop ischemic heart disease, there is no increased risk for developing hypertension and diabetes.

KEYWORDS

INTRODUCTION:

The term subclinical hypothyroidism was originally used to describe the patient with a low-normal free T4 but a slightly elevated serum TSH level. Other terms for this condition are mild hypothyroidism early thyroid failure, preclinical hypothyroidism, and decreased thyroid reserve. The TSH elevation in such patients is modest, with values typically between 4 and 15 mU/L, although patients with a TSH above 10 mU/L more often have a reduced free T4 and may have some hypothyroid symptoms.

The definition of this syndrome depends significantly on the reference range for a normal TSH concentration. This syndrome is most often seen in patients with early Hashimoto's disease and is a common phenomenon, occurring in 7% to 10% of older women. Subclinical hypothyroidism may have endogenous causes (chronic autoimmune thyroiditis, subacute thyroiditis, postpartum thyroiditis) or exogenous causes (thyroidectomy, 131I therapy, antithyroid drugs, inadequate thyroid hormone replacement therapy).

The prevalence of subclinical hypothyroidism is rather high. In the classical population-based study among adults in the English county of Whickham the prevalence was 75 per 1000 women and 28 per 1000 men; similar figures have been obtained in other studies.

The higher prevalence of subclinical hypothyroidism in females thanin males and in older than in younger subjects is in agreement with the higher prevalence of thyroglobulin and thyroid peroxidase (microsomal) antibodies in women and in elderly people.

The natural history of subclinical hypothyroidism is reasonably well known. Spontaneous return of increased TSH values into the normal range occurs in 5.5% after 1. Year. Progression to overt hypothyroidism ranges from 7.8% to 17.8% in various studies.

Clinical manifestation of subclinical hypothyroidism include abnormal lipid metabolism, cardiac dysfunction and neurologic and mental dysfunction and several cross-sectional studies have suggested that it confers an elevated risk for atherosclerosis and coronary heart disease.

However, neither of these associations have been confirmed by others. This discrepancy may reflect small size of the study or participation in this study limited to one sex.

Also, few longitudinal studies have been conducted. The relationship between subclincial hypothyroidism and cardiovascular disease is therefore controversial and possible outcomes of the conditions remain unclear.

AIM OF THE STUDY:

To estimate the prevalence of subclinical hypothyroidism among women above the age of 50 yrs.

To study the relationship of subclinical hypothyroidism to Hypertension, Diabetes and Ischemic Heart Disease in those patients.

MATERIALS AND METHODS:

Women above the age of 50 years attending Medical out patient clinic of Alluri Sitarama Raju Academy of Medical Sciences, Eluru from November 2020 to July 2021 were studied. A sample of 100 women was randomly selected. All the participants were examined for thyroid function. Women with subclinical hypothyroidism (defined as TSH > 5.5μIU/ml with normal free T4 and free T3) were considered as cases, and women without subclinical hypothyroidism were considered as controls.

Exclusion Criteria:

Those with Known thyroid disease ,

History of neck irradiation,

Chronic renal failure Severe illness (such as infections , recent myocardial infarctions, severe heart failure or recent intensive care admission) ,

Taking drugs such as beta-blockers, amiodarone, and interferon –α were excluded

RESULTS:

100 women above the age of 50 years who visited the medical outpatient clinic during the study period were studied 23 women were found to have the criteria set for the definition of subclinical hypothyroidism which meant a rate of 23%.

Patients with subclinical hypothyroidism were regarded as cases and remaining 77 patients were the control group.

There were differences in the mean age distribution among cases and controls are shown in table 1

Table 1: Showing Age Groups, Cases And Controls

AGE IN YEARS	CASES	CONTROLS
50-59	7	36
60-69	9	24
70 AND ABOVE	7	17

There were 43 patients in the age group 50-59 of which 7 (19.44%) were having subclinical hypothyroidism.

In the 60-69 age group there were 33 patients of which 9 (27.27%) were having subclinical hypothyroidism.

In the 70 and above age group there were 24 patients of which 7 (29.17%) were having subclinical hypothyroidism.

The mean TSH level in patients with subclinical hypothyroidism was 12.11µIU/mL. For FT4 it was 1.03ng/dl and for FT3 it was 2.76pg/ml . There were differences in FT4, FT3, TSH distribution in cases and control as shown in Table 2.

Table: 2

MEAN	CASES	CONTROLS
FT3	2.76	3.01
FT4	1.03	1.14
TSH	12.11	3.75

There were 23 patients with TSH level more than 5.5 µIU/ml, the upper level of normal range (0.30-5.5 µIU/ml). They are the subclinical hypothyroid patients in this study.

Of those 23 patients 15 (65.2%) had TSH level between 5.5 to 10 µIU/ml.

The remaining 8 (34.8%) patients had TSH levels more than 10 µIU/ml as shown in the following Table3.

Table 3: TSH Levels In PTS With Subclinical Hypothyroidism

TSH LEVELS	NO OF PTS (TOTAL- 23)
5.5 TO 10	15
MORETHAN 10	8

Hypothyroid symptoms were reported in 7 out of 23 (30.43%) patients with subclinical hypothyroidism. Fatigability and constipation were the most common complaint, followed by weight gain.

The frequencies of hypothyroid symptoms in the subclinical hypothyroid patients are as shown in the table 4

Table 4: The Frequency Of Hypothyroid Symptoms In The Subclinical Hypothyroid Patients

FATIGUABILITY	6
CONSTIPATION	6
WEIGHT GAIN	4
GOITRE	2
OTHERS(COLD INTOLERANCE, INFERTILITY ETC)	2

The incidence of risk factors like hypertension diabetes and ischemic heart disease were compared between patients with subclinical hypothyroidism and control.

They were analyzed independently with Chi-Square test. The p- value showed that patients with subclinical hypothyroidism were significantly associated with ischemic heart disease compared to controls.

The p- value is not significant for hypertension and diabetes. This is shown in table 5

Table: 5

	CASES	CONTROLS	P VALUE
IHD	5	5	0.047
DM	4	16	0.490
HTN	6	21	0.570

DISCUSSION:

Sub clinical hypothyroidism is highly prevalent in elderly women. A prevalence of 11 – 26 % had been reported in previous studies, our study shows a prevalence of 23 % in concordance with the other studies. Surveys that stratified TSH levels indicate a predominance of TSH < 10µIU/ml , which accounts for about 55-85% of cases.

Almost 65% of our patients with subclinical hypothyroidism had TSH levels < 10µIU/ml. Studies that have reported thyroid antibody test on subjects with elevated TSH demonstrated seropositivity rates from 20-78%.

Several studies have suggested that mild symptoms of hypothyroidism are more prevalent in patients with subclinical hypothyroidism than in age matched controls. Fatigability and weight gain were the most frequent symptoms, but not all studies have found his to be true.30% of our patients with subclinical hypothyroidism had symptoms of which fatigability (26%) and constipation (26%) were the most common There have been three published randomized prospective placebo controlled trials for the therapy of symptoms in patients with subclinical hypothyroidism.

Two trials reported significant improvement in symptoms of hypothyroidism, whereas the third found no benefit of therapy. The benefit of therapy was related to TSH level, being more in those who have mean TSH level greater than or equal to 12.7µIU/ml at baseline. In women with SH and ovulatory dysfunction , thyroxine therapy may restore fertility.

CONCLUSION:

Subclinical hypothyroidism is highly prevalent in elderly women above the age of 50 years.

Most of those with subclinical hypothyroidism have TSH level below 10µIU/ml.

Hypothyroid symptoms are prevalent in patients with subclinical hypothyroidism. (30% of patients in this study) Fatigability and Constipation being the most common symptoms.

Patients with subclinical hypothyroidism are more prone to develop ischemic heart disease.

There is no increased risk for developing hypertension and diabetes mellitus in patients with subclinical hypothyroidism.

REFERENCES:

1. TunbridgeWMG, Evered DC, Hall R, et al: The spectrum of thyroid disease in the community: the Whickham Survey. ClinEndocrinol 1977; 7:481-493.
2. Hollowell JG, Stehling NW, Flanders D, et al: Serum TSH, T4, and thyroid antibodies in the United States population (1988 to 1994): National Health and Nutrition Examination Survey (NHANES III). J ClinEndocrinolMetab 2002; 87:489-499
3. Cooper DS: Subclinical hypothyroidism. Med 2001; 345:260-265. N Engl J
4. Parle JV, Franklyn JA, Cross KW, et al: Prevalence and follow-up of abnormal thyrotropin (TSH) concentrations in the elderly in the United Kingdom. ClinEndocrinol 1993; 34: 77-83.
5. Nyström E, Bengtsson C, Lindquist O, et al.: Thyroid disease and high concentration of serum thyrotrophin in a population sample of women. Acta Med Scand 1981; 210: 37-46.
6. Gordin A, Lamberg BA: Spontaneous hypothyroidism in symptomless thyroiditis. A long-term follow-up study. ClinEndocrinol 1981; 15: 537-543.
7. Engler H, Staub JJ, Althuis B, et al.: Follow-up of 120 patients, with subclinical hypothyroidism over more than 20 years: risk factors for overt disease analysed by life-table analysis. In: Gordon A, Gross J, Hennemann G (eds). Progress in thyroid research. Rotterdam, A.A. Bolkema, 1991, pp 227-229.

8. Pucci E, Chiovato L, Pinchera A, 2000: Thyroid and lipid metabolism. Int J ObesRelatMetabDisord 24 (suppl 2): S109-S112.
9. Caron P, Calazel C, Parra HJ, Hoff M, Louvet JP, 1990: Decreased HDL cholesterol in subclinicalhypothyroidism:the effect of L- Thyroxine therapy, ClinEndocrinol (oxf) 33:519-523
10. Althaus BU, Staub JJ, Ryff- De Leche A, Oberhansti A, Stahelin HB, 1988 : LDL/HDL- changes in subclinical hypothyroidism : possible risk factor for coronary heart disease. ClinEndocrinol (oxf) 28: 157163
11. Biondi B, Fazio S, Palmieri EA, Carella C, Panza N, Cittadini A, Bone F, Lombardi G, Sacca L, 1999: Left ventricular dysfunction in patients with subclinical hypothyroidism, J CLinEndocrinolMetab ;84: 2064-2067
12. Kahaly GJ, 2000: Cardiovascular andatherogenic aspects of subclinical hypothyroidism, Thyroid 10:665-679