ORIGINAL RESEARCH PAPER

General Medicine

A STUDY OF ESTIMATION SERUM HOMOCYSTEINE LEVELS IN THYROID DISORDERS IN PATIENTS IN A TERTIARY CARE HOSPITAL IN KACHIPURAM

KEY WORDS: TSH , TPO, T4, T3

Dr. Nandha Kumar* Post Graduate, Meenakshi Medical College, Enathur, Kanchipuram, Tamil Nadu - 631552. *Corresponding Author

Dr. Mohanraj MD, General Medicine, Meenakshi Medical College, Enathur, Kanchipuram, Tamil Nadu - 631552.

Dr. Ponugoti Manoj Kumar Post Graduate, Meenakshi Medical College, Enathur, Kanchipuram, Tamil Nadu - 631552.

Dr. Mohammed Thanish Post Graduate

ABSTRACT

Thyroid dysfunction is associated with increased risk of atherosclerotic heart Disease.The present study was conducted to study the Association of thyroid Dysfunction and serum homocysteine levels and to assess the cardiovascular risk.

INTRODUCTION

The thyroid name was derived from Greek (thyreos- shield, eidos-form) 1 . Thyroid hormones are important for growth and development of a human being. Thyroxine (T4) and triiodothyronine (T3) are the principle hormones produced by thyroid gland.2,3 . Most common thyroid disorders are hypothyroidism and hyperthyroidism. Homocysteine is a nonproteinogenic -amino acid.Homocysteinemia is characterised by increased concentration of the Sulphur containing amino acid homocysteine in blood and urine. Changes of homocysteine levels are also observed with increasing age, with smoking, in postmenopausal women, in patients with renal failure, hypothyroidism, leukemias, inflammatory bowel disease, or psoriasis; and during therapy with drugs such as methotrexate, nitrous oxide ,

isoniazid and some antiepileptic agents. Hyperhomocyste inemia is a common cause of stroke in young 6 .Homocystein emia is also a cause of arterial and venous thrombosis 4,7 . Several reports have appeared in the literature proving that hypothyroidism is associated with increased risk for cardiovascular disease,especially coronary heart disease. More recently homocysteine, have been recognized as a "new"risk factors for atherosclerosis in patients with thyroid hormone deficiency. Our study tries to do as pilot study on Homocysteine level in thyroid patient's ad its relation with cardiovascular illness

Need for the study:

Scarcity of studies on serum homocysteine levels in thyroid disorder from sub urban population in India.

MATERIALS AND METHODS:

This was a cross sectional study After obtaining clearance and approval from the institutional ethics committee of Meenakshi medical college and RI and written informed consent, the patients with thyroid disorders and fulfilling the inclusion/ exclusion criteria were enrolled in the study.60 patients with thyroid disorders were grouped into two groups 40 patients with hypothyroidism (TSH > 15mU/l) and 20 patients with hyperthyroidism (TSH)

Aims & Objectives of the study

To study the clinical profile of 60 patients to assess the serum homocysteine levels in patients with thyroid disorders. To assess the relationship of serum homocysteine levels and cardiovascular risk In Patients with thyroid disorders in a tertiary care hospital in a sub urban population.

RESULTS:

Table 1- Here homocysteine levels were checked in all the 60 patients and it was observed that 34(85%) out of 40 hypothyroid patients had hyperhomocystienemia, 6(15%) out of 40 had normal levels. 2(10%) out of 20 hyperthyroid patients had hyperhomocystienemia, 18(90%) out of 20 had normal levels. Hyperhomocysteinemia was more common in hypothyroid group compared to hyperthyroid group, which is statistically significant P

Homocysteine	TSH		Total (n=60)
	Hyperthyroidism (n=20)	Hypothyroidism (n=40)	
<15	18(90%)	6(15%)	24(40%)
15-30	2(10%)	25(62.5%)	27(45%)
30-50	0(0%)	9(22.5%)	9(15%)
>50	0(0%)	0(0%)	0(0%)
Total	20(100%)	40(100%)	60(100%)

Table 2- Sinus tachycardia is common in hyperthyroidism that is 7 out of 20 (35%) andlow voltage complexes in hypothyroidism 2 out of 40 (5%).

PearsonCorrelation	r value	Pvalue
HOMOCYSTEINE	0.843	<0.001**
CIMT		

Table 3 - This present study conducted on 40 hypothyroid patients showed higher homocysteine levels, higher values of CIMT indicated higher cardiovascular risk.

ECG	TSH		Total
	Hyperthyroidism	Hypothyroidism	
Normal	11(55%)	30(75%)	41(68.3%)
LVH	2(10%)	7(17.5%)	9(15%)
ST	7(35%)	0(0%)	7(11.7%)
LVC	0(0%)	2(5%)	2(3.3%)
VPCS	0(0%)	1(2.5%)	1(1.7%)
Total	20(100%)	40(100%)	60(100%)

DISCUSSION:

Our study was done on 60 patients with thyroid disorders andhomocysteinelevelswerecheckedinallpatientsaftertakingconsent.Itwasobserved60patientsagedbetween18-70 years were included in the study.Majority of the patients 17 in number (28.3%) were intheagegroupbetween20-30years of ageandleastwerefromlessthan20years (1patient)and when gender of patients in study was observed23(38.3 %) were

males and37(61.7%)were females. Thisshowed female predominance in hypothyroidism and is comparable withother studies likeMolham Ali Al-Habori et al [8].Among the 60 patients 40 were hypothyroidand 20 were hyperthyroid.

It showed hypothyroidism was the most common thyroid illness.Hyperhomocysteinemia was more common in hypothyroid group compared to hyperthyroidgroup,whichis statisticallysignificantP<0.001. Wassimilar tostudydoneby MolhamAliAl-Habori et al [8.] CIMT measured in our study showed higher values with higher TSH and higherhomocy steinelevels,meanCIMTvaluewas0.88±0.30mm.

Limitations:

1. Smallsamplesize
2. Studyperiodwas veryshort.

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