

OR 2

Correlation between thyroid profile and lipid profile of patients awaiting Coronary Artery Bypass Graft (CABG): A preliminary study

E M Bandara, S Ekanayake, A D Kapuruge, C A Wanigatunge

Introduction : Among the multiple effects on the heart and cardio-vascular system of Thyroid hormones (TH), reduction of atherosclerotic plaque formation is in a leading position. Occurrence of cardio vascular disease CVD among overt hypothyroid and subclinical hypothyroid patients is common and studies reveal elevated levels of selected lipids in the lipid profile of these patients.

Objective: To observe the correlation between TH with the lipid profile (TC, LDL, HDL, VLDL, TG and TC:HDL ratio) among selected inpatients .

Method : 50 patients warded at Cardio-Thoracic unit of Sri Jayewardenepura General hospital(SJGH) were selected after obtaining ethical clearance. Thyroid hormones and lipid profiles were measured in serum samples obtained from patients fasted 12-14 hours, using immuno-turbidometry and enzymatic kit assays respectively.

Results: 30 were males (age 57.4 ± 10.5) and 20 were females (age 58.2 ± 7.6). Mean values of thyroid hormones were TSH $2.6 (\pm 1.9)$ μ IU/ml, T3 $2.2 (\pm 0.7)$ pg/ml, T4 $1.0 (\pm 1.9)$ ng/dl and mean lipid profile levels were TC $158 (\pm 37)$ mg/dl, LDL $101 (\pm 41)$ mg/dl, TG $137 (\pm 72)$ mg/dl, VLDL $27 (\pm 14)$ mg/dl, HDL $33 (\pm 8)$ mg/dl and TC: HDL $5 (\pm 1.2)$. Weak negative correlations were observed for T4 with TC ($r = -0.20$, $p > 0.05$), with LDL ($r = -0.30$, $p < 0.05$) and with TC: HDL ($r = -0.20$, $p > 0.05$). LDL ($r = 0.18$, $p > 0.05$), TC ($r = 0.28$, $p < 0.05$), TC: HDL ratio ($r = 0.13$, $p > 0.05$) were elicited weak positive correlations with TSH. In T3 a weak negative correlations were observed with LDL ($r = -0.12$, $p > 0.05$), and with TC ($r = -0.1$, $p > 0.05$). However, 05 (10%) patients had their TSH levels beyond the normal range and all of these patients were in normal range of their T3 and T4 levels according to Sri Lankan references.

Conclusions and Recommendations: Although the obtained correlations were weak, these data proves the negative relationship between TH and lipid parameters. Some authorities recommend to request thyroid function tests of patients who respond poorly to anti-hypertensive and lipid lowering drugs as the treatment will not be effective until restoration of thyroid hormones. Further studies should be carried out for Sri Lankan patients before establishing this recommendation for Sri Lankans.

*Department of Biochemistry, University of Sri Jayewardenepura
Cardio-thoracic Unit, Sri Jayewardenepura General Hospital*

