

Association between Thyroid Status and Lipid Levels among Pregnant Women in Jaffna District

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Abstract

Thyroid dysfunction during pregnancy is associated with various adverse perinatal and maternal outcomes. Evidence shows that thyroid-stimulating hormone (TSH) may exert extra-thyroidal effects and modify the serum lipid levels. The aim of the study was to assess the thyroid status and its association with serum lipid levels among pregnant women during the third trimester of gestation. Among 477 pregnant women, serum thyroid stimulating hormone (TSH) and free thyroxine (fT4) were assayed and also total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C) and low density lipoprotein (LDL-C) were measured and analyzed. Statistical analysis was done using SPSS. Mean age, weight, height and gestational age of the study subjects were 28.95(±5.46) years, 63.02 (±11.56) kg, 154.39 (±6.00) cm and 39.33(±1.37) weeks respectively. Median values of the serum TSH and free T4 were 1.9 mIU/L and 12.6 pmol/L respectively. Also, serum TSH level ranged from 0.2 to 16.4 mIU/L whereas serum free T4 level ranged from 10.1 to 28.2 pmol/L. Further, inter-quartile range (IQR) of TSH and free T4 were 1.2 mIU/L and 2.7 pmol/L respectively. Among the study subjects, maternal serum TSH and serum free T4 were not significantly correlated with serum lipid level (TC, TG, LDL-C and HDL-C). Serum TSH among maternal hypothyroid women were positively significantly correlated with serum TC ( $r=0.649$ ,  $p=0.004$ ) and LDL-C ( $r=0.745$ ,  $p=0.001$ ) and was not significantly correlated with TG ( $r=0.532$ ,  $p=0.158$ ) and HDL-C ( $r=0.327$ ,  $p=0.186$ ). Further, no correlation was obtained between serum free T4 and serum lipid levels among maternal hypothyroid women. These results indicated that among the study subjects, maternal serum TSH and serum free T4 were not significantly correlated with serum lipid level and significantly elevated serum lipid levels occurred in hypothyroid subjects. However, there is a need for gestational-age dependent reference ranges for TSH and free T4 as well as lipid profile among Jaffna population to adequately assess thyroidal effects.

Keywords - Pregnant Women, Lipid Level, Thyroid Profile