ABSTRACT

Aim: To screen pregnant women during early gestation for thyroid dysfunction; to observe thyroid hormone changes throughout pregnancy; to observe its impact on infant development and to study impact of DFS supplementation on iodine and iron status of mothers during lactation.

Methods: A hospital based follow up and interventional study was carried out in urban Vadodara. Thyroid hormone analysis was performed using RIA technique, urinary iodine and hemoglobin estimation was carried out using simple micro-plate method and cyanmethemoglobin method respectively.

Results: Screening of pregnant women for thyroid dysfunction during early gestation revealed that 28% women were at low risk (TSH >2.5mIU/l) and 5.5% women were at high risk (TSH >5.0mIU/l) of developing hypothyroidism. Mean TSH, FT4, TT4 and TG were falling under normal range (adult reference value). Thyroid dysfunction was found in 32.88%, 43.84% and 31.51% during first, second and third trimester respectively. There was an increase in mean TSH, FT4 and TG with advancing gestation; however FT4 decreased from first to second trimester and then increased from second to third trimester. Raised CBTSH was found in 12.60% neonates and low CBFT4 was found in 9.25% neonates. A significant difference of 0.2 and 0.4 was found between mean BDSTI scores of both groups (with thyroid dysfunction and with normal thyroid function) at 6 months and 12 months respectively. There was a significant increase of 0.22 g/dl in hemoglobin in experimental group, while in control group there was a significant decrease in hemoglobin of 0.17 g/dl. Median urinary iodine increased by 78 mcg/l ($p<0.05$) in experimental group and in control group it decreased by 16 mcg/l ($p=0.964$).

Conclusion: Screening of pregnant women during early gestation using a lower TSH cut-off can result in identifying pregnant women who may be at risk of developing hypothyroidism. Since thyroid dysfunction during early gestation effects infant development, it is of great importance to diagnose thyroid dysfunction during early gestation and start appropriate treatment. DFS can be used as an additional strategy to combat anemia among women along with IFA supplementation and dietary modification.