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## Study of thyroid function in pregnancy, its feto-maternal outcome; a prospective observational study

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### Background

Pregnancy is a stress test of maternal thyroid function. The prevalence of thyroid dysfunction in pregnant women is high. Subclinical hypothyroidism occurs in 10% of all pregnancies. Effects of hypothyroidism in pregnancy are anemia, low birth weight and mental retardation in neonate. This study is aimed to evaluate maternal and fetal outcomes in pregnant women with deranged thyroid profile. The relevance of this study is to document the association of hypothyroidism and its adverse effects on mother and fetus.

### Methods

This prospective observational study was carried out at R.D. Gardi Medical College, Ujjain, India. Subjects of this study were 198 antenatal women in third trimester with singleton pregnancy admitted in the obstetric ward, and informed consent was obtained. Women were chosen irrespective of age, parity, residence and socio-economic status. Women with multiple pregnancy, a known case of thyroid disorder, or any pre-existing medical disorder were excluded. Routine hematological parameters and estimation of T3, T4 and TSH was conducted. Patients with deranged thyroid profile were subsequently assessed for maternal and fetal complications. History of infertility, family history of thyroid disease, menstrual pattern, recurrent abortion, hemoglobin level and fetal outcome were the main study variables. Data was analysed in SPSS software for statistical co-relation.

### Results

Prevalence of thyroid disorder is 11%; with subclinical hypothyroidism, overt hypothyroidism and subclinical hyperthyroidism occurring in 5.6, 3.5 and 1.5% of subjects respectively. In women with subclinical and overt hypothyroidism, anemia was present in 26.3% being significantly associated with hypothyroidism ( $p=0.008$ ). With respect to fetal outcome, LBW 31.6% ( $p=0.001$ ), NICU admission 42.1%, ( $p=0.000$ ) and low APGAR Score (21.1%,  $p=0.042$ ) were statistically associated with hypothyroidism. Risk of anemia, Low Birth weight, NICU admissions, and low APGAR score was 4.8, 6.3, 0.14 and 3.64 times higher respectively in women with hypothyroidism than in women who are euthyroid.

### Conclusion

Prevalence of subclinical hypothyroidism is 5.6% in 3rd trimester of pregnancy. Anemia, pre-eclampsia, high caesarean rates and neonatal morbidities is significantly associated with hypothyroidism.

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