Prevalence of hypothyroidism among women with pre-eclampsia
‘THYDOR study’
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INTRODUCTION:

Pregnancy is a state with various physiological hormonal changes, but the commonest endocrinological disorder during pregnancy is hypothyroidism, which usually goes undiagnosed. During pregnancy there is two fold increase in thyroxine binding globulin production and sialylation, thus decreasing the clearance of the same. Beta HCG , a glycoprotein increases during pregnancy and has weak thyroid stimulation activity hence increases T4 and T3 concentration. Later down in pregnancy T4 and T3 concentration decline and TSH concentration increases. Because of these changes in thyroid physiology during pregnancy, there is higher prevalence of hypothyroidism during pregnancy and hence the Guidelines of the American Thyroid Association (ATA) for the Diagnosis and Management of Thyroid Disease During Pregnancy and Postpartum recommends using trimester-specific reference ranges for TSH and method and trimester-specific reference ranges for serum free T4.

Women with hypothyroidism have decreased fertility and abortion rate is increased with increased risk of gestational hypertension , anemia , abruptio placenta and post partum hemorrhage( more in women with overt hypothyroidism rather than subclinical
hypothyroidism). Untreated maternal hypothyroidism can lead to preterm birth, low birth weight and respiratory distress in the neonates.

**METHODOLOGY:**

**Objectives:** To study the prevalence of the hypothyroidism among pregnant women presenting with pre-eclampsia to the tertiary care hospital in South India. The secondary objectives were to assess the maternal and fetal outcomes and the comparison between the number of antihypertensive medications required.

It was a single centre observational case control study, done among the pregnant women presented with pre-eclampsia in Obstetric and Gynaecology Department and admitted in the ward and the labour room of Christian Medical College Vellore, Tamil Nadu. There were 277 women fulfilled eligibility criteria of which 215 were assessed. There was 63 women with hypothyroidism. Thyroid stimulating hormone was assessed for all the women and if elevated then thyroid function test was done. If the thyroid function was normal then they were diagnosed as subclinical hypothyroidism and thyroid antibodies were checked for these women. The women had a follow up till 4 weeks over a period of 12 weeks post partum.

**Main outcome measures:** 29.3 percent women had hypothyroidism among the women presented with pre-eclampsia. Both group were similar in terms of maternal and fetal outcomes. There was no significant difference being noted in either arm in terms of secondary outcomes, though there was increased antihypertensive medication requirement noted in the group with hypothyroidism. Among women with hypothyroidism, 71.42 percent had subclinical hypothyroidism with 22.2 percent (10
women) being thyroid antibodies positive. It was also noticed that the intrauterine death was higher in women with overt hypothyroidism. Thyroid antibodies positivity was not associated with adverse outcomes.

**Conclusion:** There is an increased prevalence of the hypothyroidism among pregnant women with pre-eclampsia and is an independent risk factor. Routine assessment of the women with increased risk should be considered.