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Study of prevalence of subclinical and overt hypothyroid disorders and its maternal outcome

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Abstract
Thyroid disorders are the common endocrine disorders affecting women of reproductive age group and hence pregnancy also. 500 antenatal women irrespective of thyroid status at first visit will be screened for TSH level. Serum free T4 and T3 level will be measured in patient with abnormal TSH level. Pregnancy outcome in both the groups in terms of pregnancy induced hypertension, abortion, GDM, preterm labour, complicated delivery and other maternal complications were evaluated. Prevalence of subclinical hypothyroidism (7.1%) and overt hypothyroidism (2.9%) was high. Significant adverse effects on maternal outcome were seen in patients with thyroid dysfunctions emphasizing the importance of routine antenatal thyroid screening.

Keywords: thyroid disorders, subclinical, pregnancy

Introduction
Thyroid disorders are the common endocrine disorders affecting women of reproductive age group and hence pregnancy also. They are the second most common endocrinopathy after diabetes in pregnancy [2, 3]. Its can influence the outcome of mother at all stages of pregnancy as well as interfere with ovulation and fertility.
In India thyroid disorders are in a transition zone from a predominant iodine deficient nation to now an iodine sufficient population. The global prevalence is more than 2 billion with more than 40 million in India [1]. The relationship is important not only for successful outcome of pregnancy but also for the ability to conceive [10]. There is increased risk of preterm delivery, 10 to 20% congenital anomalies and poor somatic and intellectual developments in 50 to 60% of surviving offspring, if pregnancy was complicated by thyroid disorders [7, 9].

Aims and objective
To study prevalence of subclinical and overt hypothyroidism and its maternal complications.

Materials and Methods
This is a prospective study consists of cases of documented pregnancies recruited from department of obstetrics & gynaecology at srikrishna medical college and hospital, muzaffarpur, from 9th April 2016 to 8th April 2017.500 antenatal women irrespective of thyroid status at first visit will be screened for TSH level. Serum free T4 and T3 level will be measured in patient with abnormal TSH level.

Inclusion criteria
1. Documented pregnancy
2. No other complicating factor
3. Pregnant women in all trimesters with known thyroid dysfunction.

Exclusion criteria
1. Chronic hypertension
2. Cardiac diseases
3. Chronic renal diseases
4. DM type-1 and 2
5. Multiple gestations
6. Systemic lupus erythematosus

Patients with clinical and biochemical evidence of hypothyroidism were divided into subclinical hypothyroidism and overt hypothyroidism. Pregnancy outcome in both the groups in terms of pregnancy induced hypertension, abortion, GDM, preterm labour, complicated delivery and other maternal complications were evaluated.

Observations and Results
In present study, the prevalence of subclinical and overt (uncontrolled) hypothyroidism was 7.1% and 2.9%.The mean TSH level in sub. Hypothyroidism was 4.28µIU/ml, while in overt hypothyroidism was 9.53µIU/ml. In present study, the incidence of maternal complications in women with subclinical hypothyroidism was PIH (8.45%), AB (7.04%), PTD (7.04%), APH (7.04%) and GDM (0%).
In present study, the incidence of maternal complications in women with overt (uncontrolled) hypothyroidism was PIH (24.13%), AB (24.13%), PTD (13.79%), APH (0%) and GDM (3.4%).
PIH was one of the major maternal complication, which was found in 6/71(8.45%) women with sub. hypothyroidism and 7/29(24.13%) women with overt hypothyroidism. The difference was statistically significant. Abortion was also the

major complication found in 5/71(7.04%) women with subclinical hypothyroidism and 7/29(24.13%) women with overt hypothyroidism and the difference was statistically significant. Other complications were PTD, APH and GDM found in 7.04%, 1.4%, and 0% women with subclinical hypothyroidism while in women with overt hypothyroidism, they were found in 13.79%, 0% and 3.4% women. However difference didn't reach the significant level.

Table 1: Mode of delivery among the cases of thyroid dysfunctions

Mode of delivery	Hypothyroidism	
	Subclinical	Overt
Normal Delivery	49	9
Caesarean Section	13	13
Total	66	22

Discussion

The present study was a prospective study done in obstetrics and gynaecology department of srikrishna medical college and hospital, muzaffarpur. Total of 500 pts were screened for subclinical and overt hypothyroidism to study the prevalence of this thyroid disorder in pregnancy and its maternal outcome.

The prevalence of subclinical hypothyroidism in our study was 7.1%. In the study of Sahu MT *et al*, [22] the prevalence was 6.47%, which is comparable to our study. In a study done by Goel P *et al*, [23] the prevalence of subclinical hypothyroidism was 3.4%, which is lower than the present study.

The prevalence of overt hypothyroidism in present study was 2.9%, which is consistent with study done by Goel P *et al*. [23] in which, the prevalence of overt hypothyroidism was 2.9%. In the study done by Sahu MT *et al*, [83], the prevalence of overt hypothyroidism was 4.56%.In present study, subclinical hypothyroidism was associated with complications like PIH (8.45%), abortion (7.04%), preterm delivery (7.04%), APH (1.4%). In a study done by Sahu MT *et al*, [22], the complications like PIH (9.8%), preterm delivery (10.3%), IUGR (2.4%), SB (2.5%) were seen in cases of subclinical hypothyroidism.

In present study, overt (uncontrolled) hypothyroidism was associated with complications like PIH (24.13%), abortion (24.13%), PTD (13.79%), GDM (3.4%). In a study done by Sahu MT *et al*, [22] the complications like PIH (20.7%), PTD (4.7%), IUGR (13.8%), and SB (2.9%) were seen in cases of overt hypothyroidism. In a study done by Leung *et al*, [24] the incidence of complications was PIH (22%), LBW (22%), and SB (4%) in cases of overt hypothyroidism. The incidence of complications varies in different studies but some are comparable.

Mode of delivery

Onset of labour was spontaneous in 81 of 90 pts and 31 pts had caesarean section (34.44%). Out of 31 caesareans, 9 were elective (including 3 caesareans for breech presentation), 12 were done for foetal distress (13.33%) and 10 for other indications. The high incidence of caesarean sections in present study is comparable with 38.4% incidence of caesarean section in study of Buckshee *et al*, [25] with 23.1% for foetal distress.

Conclusion

Prevalence of subclinical hypothyroidism (7.1%) and overt hypothyroidism (2.9%) was high. Significant adverse effects on maternal outcome were seen in patients with thyroid dysfunctions emphasizing the importance of routine antenatal thyroid screening. Our results provide a strong argument for expedition of diagnosis and treatment of thyroid dysfunctions as maternal complications occurred more commonly in overt and uncontrolled hypothyroid status. Ideally patients should be made euthyroid before delivery. For those with persistent thyroid dysfunctions during pregnancy, the goal should be euthyroid as indicated by normal serum TSH values.

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