Original Research Article

Prevalence of thyroid disorder in pregnancy and pregnancy outcome

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Abstract

Background: Thyroid disorders constitute one of the most common endocrine disorders seen in pregnancy. Maternal thyroid function changes during pregnancy and inadequate adaptation to these changes results in thyroid dysfunction.
Aim: A prospective and comparative clinical study to know prevalence of thyroid disorder in pregnancy and pregnancy outcome was done.
Materials and methods: This study was carried out in pregnant women during 1st trimester who attended antenatal clinic of maternity hospital to know the prevalence of thyroid disorders in pregnant women living in and around and also to know the outcome of pregnancy in women suffering from thyroid disorders.
Results: In this study, prevalence of thyroid disorder was 11.6% with 95% CI of 9.64 to 13.54 which was high when compared to other regions in India and in other parts of Asia. Subclinical hypothyroidism and Overt hypothyroidism was 6.4% and 2.8% respectively. Subclinical and Overt hyperthyroidism was 1.8% and 0.6% respectively. Subclinical hypothyroidism was more prevalent and hidden, leading to the poor obstetrical outcome and fetal complications. Rate of miscarriage was high in overt hyperthyroid patients.
Conclusion: Due to the immense impact that the maternal thyroid disorder has on maternal and fetal outcome, prompt identification of thyroid disorders and timely initiation of treatment is essential. Thus, universal screening of pregnant women for thyroid disorder should be considered especially in a country like India where there is a high prevalence of undiagnosed thyroid disorder.

Key words

Subclinical hypothyroidism, Overt hypothyroidism, Subclinical hyperthyroidism, Overt hyperthyroidism.

Introduction

Thyroid disorders constitute one of the most common endocrine disorders seen in pregnancy. Maternal thyroid function changes during pregnancy and inadequate adaptation to these changes results in thyroid dysfunction. These changes are a result of various factors like an increase in thyroglobulin due to elevated estrogen and human chorionic gonadotrophin, increase renal losses of iodine due to increase in glomerular filtration rate, modifications in peripheral metabolism of maternal thyroid hormone and modifications in iodine transfer to placenta. The production of thyroid hormone and iodine requirement increases by 50% during pregnancy. Pregnancy is a stress test for thyroid, resulting in hypothyroidism in women with limited thyroidal reserve or iodine deficiency. Thyroid disorder during early pregnancy has been associated with adverse obstetric and fetal outcome. The main obstetric complications are abortion, preeclampsia, abruption placenta and preterm labour and the fetal complications are prematurity, low birth weight, still birth and perinatal death. There is an increase in the incidence of NICU admissions and respiratory distress syndrome. Maternal hypothyroidism in the 1st trimester may be harmful for fetal brain development and leads to mental retardation and cretinism which includes impairment of mental and physical growth and development and has a negative impact on most organ systems.

Thyroid disorder may be overlooked in pregnancy because of nonspecific symptoms and hyper metabolic state of pregnancy. Physiological changes of pregnancy can stimulate thyroid disease. Prevalence of thyroid disorder during pregnancy has a wide geographic variation. Western literature shows a prevalence of hypothyroidism in pregnancy of 2.5% and hyperthyroidism in pregnancy has prevalence of 0.1 to 0.4% [1]. There is paucity of data on prevalence of thyroid disorders in Indian pregnant women, few reports show a prevalence of 4.8% to 11% amongst Indian pregnant population [2, 3]. In view of adverse maternal and fetal outcome in pregnant women with thyroid disorder and obvious benefits of early diagnosis and treatment, some expert panels all around the world have suggested routine thyroid function screening of all pregnant women. Therefore this study was carried out in pregnant women during 1st trimester who attended antenatal clinic of Government maternity hospital, Hanamkonda, to know the prevalence of thyroid disorders in pregnant women living in and around the Warangal district of Telangana state and also to know the outcome of pregnancy in women suffering from thyroid disorders.

Material and methods

Source of the data: This study was done at Government Maternity Hospital, Hanamkonda Warangal district in Department of Obstetrics and Gynecology, Kakatiya Medical College from 15th November, 2013 to 15th November, 2015.

Type of study: Prospective study done in 1000 pregnant women in 1st trimester till delivery.

Inclusion criteria: <12 weeks of gestation, Singleton Pregnancy and Primigravida/ Multigravida.

Exclusion criteria: Multi fetal gestation, Known chronic disorders like Diabetes and hypertension, Previous bad obstetric history with known cause, patient planned follow up and delivery in other hospital.

Procedure: 1000 pregnant women attending antenatal clinic in first trimester at Government Maternity Hospital, Hanamkonda and fulfilling inclusion criteria were enrolled in the study

after institutional ethics approval and consent from the study subjects. Detailed history was taken, regarding the symptoms of thyroid disorders, menstrual history, obstetric history, past medical history, family history, personal and social history. General examination was done with reference to general condition of the patient, body temperature; pulse rate, blood pressure, respiratory rate and the finding were recorded. Systemic examination of the cardiovascular system (CVS), central nervous system (CNS), respiratory system and thyroid gland was done and findings were recorded. Per abdominal and per vaginal examination was done and findings were recorded.

Investigations

Basic investigations: Complete blood picture, Clotting time, Bleeding time, Blood grouping and Rh typing, RBS, Blood urea, Serum creatinine, HIV, HbsAg and Complete urine examination were done.

Pregnancy <12 weeks was confirmed by clinical assessment, pregnancy test and ultrasonography.

Specific Investigations: Patients were sent for the testing of serum TSH level. If serum TSH values were deranged, fT3 and fT4 levels were checked. The reference ranges of the test values used in this study were as per the Guidelines of American Thyroid Association for the Diagnosis and Management of Thyroid Disease during Pregnancy and Postpartum. As per Regulation 14.2 of ATA Guidelines, if trimester-specific ranges for TSH are not available in the laboratory, the following normal reference ranges are recommended: 1st trimester – 0.1 to 2.5 m IU/L, 2nd trimester – 0.2 to 3.0 m IU/L and 3rd trimester – 0.3 to 3.0 m IU/L. Normal free T4 level is 0.7 to1.8 ng/ml and free T3 level is 1.7 to 4.2 pg/ml. Depending on the hormonal values, patients were classified into

Subclinical hypothyroidism: High serum TSH level with normal fT4, fT3 level,

Overt hypothyroidism: High serum TSH level with fT4 and fT3 less than normal range,

Subclinical hyperthyroidism: Low serum TSH level with normal fT3, fT4 level,

Overt hyperthyroidism: Low serum TSH level with fT3 and fT4 more than normal range.

Sub clinical/ overt hypothyroid cases were treated with Thyroxine.

Sub clinical / overt hyperthyroid cases were treated with Propylthoiuracyl.

Every 4 weeks, TSH level was estimated and the dose of the drug was adjusted.

Outcome of the pregnancy was followed up and documented.

The following outcome variables of the pregnancy in relation to the thyroid disorders were studied: Preeclampsia, Abruptio placenta, Preterm delivery, IUGR, Low birth weight, Still birth, Abortion.

Results

In the present study, 116 out of 1000 pregnant women screened had thyroid disorders. The prevalence of thyroid disorders in this study was 11.6%.

In the present study, the prevalence of subclinical hypothyroidism, overt hypothyroidism, subclinical hyperthyroidism and overt hyperthyroidism is 6.4%, 2.8%, 1.8% and 0.6% respectively as per **Table – 1**. Out of 1000 pregnant women screened, 64 had subclinical hypothyroidism, thus making it the thyroid disorder with highest prevalence in pregnant women. 28 and 18 cases had overt hypothyroidism and subclinical hyperthyroidism respectively. Only 6 pregnant women had overt hyperthyroidism, thus it has the least prevalence of 0.6%.

The mean of TSH level in the cases of subclinical hypothyroidism, overt hypothyroidism, subclinical hyperthyroidism, overt hyperthyroidism was 4.11, 8.86, 0.022, and 0.014 respectively as per **Table - 2**.

Table - 1: Prevalence of types of thyroid disorders among 1000 pregnant woman screened.

Type of disorder	No. of cases	%
Subclinical hypothyroidism	64	6.4%
Overt hypothyroidism	28	2.8%
Subclinical hyperthyroidism	18	1.8%
Overt hyperthyroidism	6	0.6%
Total	116	11.6%

Table - 2: TSH levels in the study cases.

Type of disorder	No. of cases	Mean	SD
Sub clinical hypothyroidism	64	4.11	1.26
Overt hypothyroidism	28	8.86	3.28
Sub clinical hyperthyroidism	18	0.022	0.017
Overt hyperthyroidism	6	0.014	0.008

In the present study, the incidence of maternal complications in the cases of subclinical hypothyroidism was preeclampsia (9.37%), preterm delivery (7.81%), abortions (4.68%) and abruption placenta (1.56%). In the present study, the incidence of fetal complications in the cases of subclinical hypothyroidism was IUGR (6.25%), low birth weight (4.68%) and still birth (1.56%). In the present study, the incidence of fetal complications in the cases of overt hypothyroidism was IUGR (10.71%), low birth weight (10.71%) and still birth (3.57%) as per **Table – 3**.

18 cases of subclinical hyperthyroidism, 2 cases preeclampsia, 1 case had preterm delivery and 1 case had abortion. Thus the incidence of preeclampsia, preterm delivery and abortions was 11.11%, 5.55% and 5.55% respectively. Out of 18 cases of subclinical hyperthyroidism, 2 cases had fetus with IUGR and 1 case had still birth. Thus the incidence of IUGR and still birth in cases of subclinical hyperthyroidism is 11.11% and 5.55% respectively as per **Table – 4**.

Table - 3: Maternal and fetal complications among 64 cases of hypothyroidism.

Complications of subclinical hypothyroidism	No. of cases	%
Pre eclampsia	6	9.37%
Preterm delivery	5	7.81%
Abortions	3	4.68%
Abruptio placenta	1	1.56%
Fetal complications of subclinical hypothyroidism		
IUGR	4	6.25%
Low birth weight	3	4.68%
Still birth	1	1.56%
Maternal complications of Overt hypothyroidism		
Pre eclampsia	4	14.28%
Preterm delivery	3	0.71%
Abortions	2	7.14%
Abruptio placenta	1	3.57%
Fetal complications of Overt hypothyroidism		
IUGR	3	10.71%
Low birth weight	3	10.71%
Still birth	1	3.57%

Incidence of maternal complications in 116 pregnant women with thyroid disorders Preeclampsia (10.34%), Abortion (8.62%), Preterm delivery (7.75%), and Abruptio placenta (1.72%) as per **Graph – 1**. Incidence of fetal complications in 116 pregnant women with thyroid disorders was as per **Graph – 2**.

Discussion

The prevalence of thyroid disorders in pregnancy and the maternal and fetal complications in the pregnant women with thyroid disorders varies greatly in different regions depending upon many factors and it is difficult to derive a single figure.

Table - 4: Maternal and fetal complications among 18 cases of hyperthyroidism.

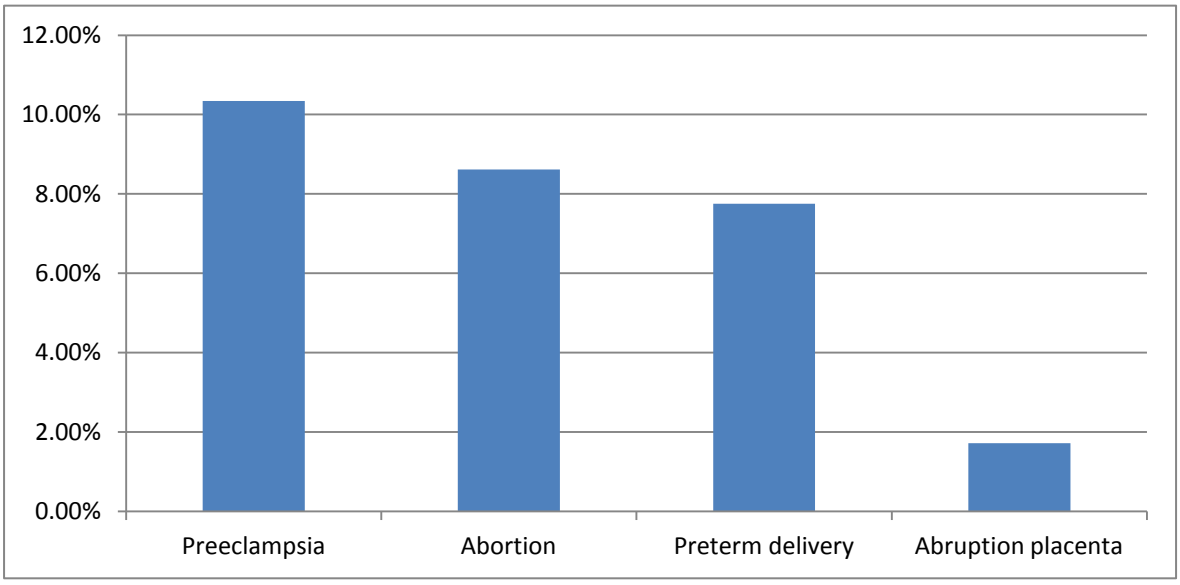
Maternal Complications of subclinical Hyperthyroidism	**No. of cases**	**%**
Pre eclampsia	2	11
Preterm delivery	1	5.55%
Abortions	1	5.55%
Fetal complications of subclinical hyperthyroidism		
IUGR	2	11.11%
Still birth	1	5.55%
Maternal complications Overt hyperthyroidism		
Abortion	4	66.66%

Observation in present study

- Prevalence of thyroid disorder was 11.6% with 95% CI was 9.64-13.54.
- Prevalence of subclinical hypothyroidism was 6.4%.
- Prevalence of overt hypothyroidism was 2.8%.
- Prevalence of subclinical hyperthyroidism was 1.8%.
- Prevalence of overt hyperthyroidism was 0.6%.

Prevalence of thyroid disorders in pregnancy varies in different regions and different studies. Prevalence of thyroid disorder in pregnancy in the present study was 11.6% which is comparable to the study conducted by Weiwei Wang, et al. [4] (10.2%), Taghavi, et al. [5] (14.6%) and Ajmani, et al. [6] (13.25%). In the study conducted by Dr Thanuja, et al. [7] the prevalence of thyroid disorder was less, about 5% and in the study conducted by Rajput, et al. [8] the prevalence of thyroid disorder was high (26.5%) and is not comparable with the present study.

Graph - 1: Incidence of maternal complications in pregnant women with thyroid disorders.

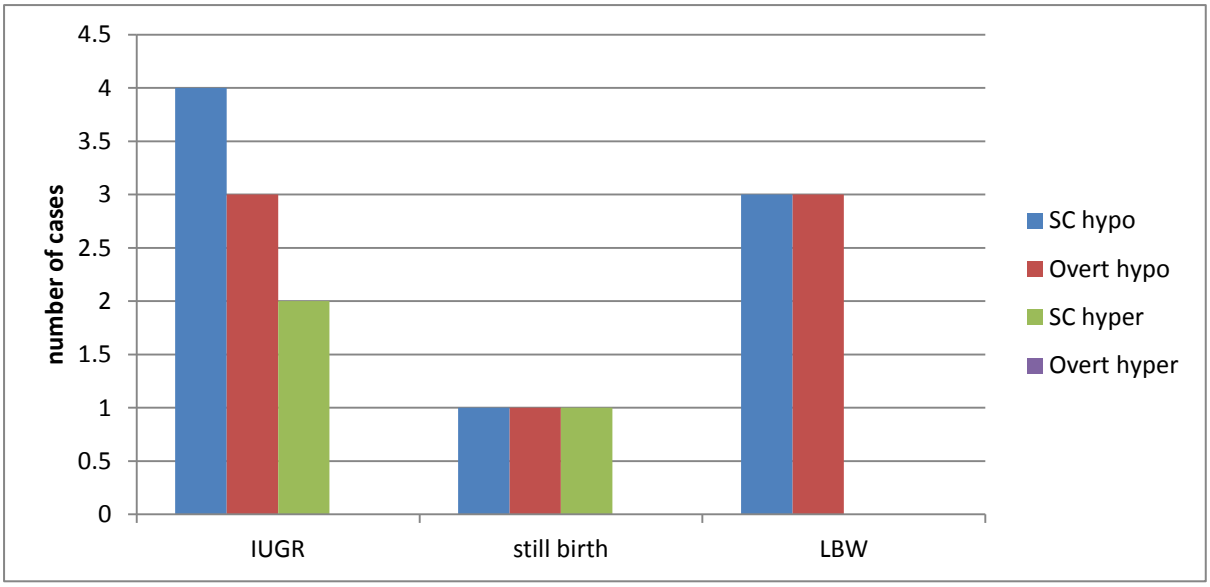


Present study was comparable to the studies conducted by Sahu, et al. [3] (6.47%), Weiwei Wang, et al. [4] (7.2%), Taghavi, et al. [5] (7.4%) and Sapana C Shah, et al. [9] (5.3%). Prevalence of the subclinical hypothyroidism in pregnancy according to the study conducted by Dr Thanuja P M, et al. [7] in Manglore was less (0.7%) and it was high according to the studies conducted by Dinesh K [10], Dhawal, et al. [10] (13.5%), NVR Murty, et al. [11] (16.11%), KP Singh, et al. [12] (18%) and Rajput, et al. [8]

(21.5%) which was not comparable with the present study.

Prevalence of overt hypothyroidism in pregnancy according to the present study was 2.8% which was comparable to the studies conducted by Taghavi, et al. [5] (2.4%), P V Bandela, et al. [13] (2.87%) and Ajmani, et al. [6] (3%). Prevalence of overt hypothyroidism in pregnancy according to the studies conducted by Weiwei Wang, et al. [4] (0.3%) and Dinesh K Dhanwal [10], (0.7%) was less when compared to the present study. Studies conducted by Sahu, et al. [3] and K P Singh, et al. [12] shows a prevalence of about 4.5% which was slightly higher when compared to the present study.

Graph - 2: Incidence of fetal complications in 116 pregnant women with thyroid disorders.



Prevalence of hypothyroidism during pregnancy has a wide geographical variation. Data from western countries indicates that overt hypothyroidism complicates up to 0.3-0.5% pregnancies and the prevalence of subclinical hypothyroidism is estimated to be 2.5%. In India, the prevalence of hypothyroidism in pregnancy is much higher compared to western countries. Prevalence varies widely among various states in India, as we still face iodine deficiency in many parts of the country. Most common cause of hypothyroidism in pregnancy in developing countries like India is iodine deficiency. Hashimoto thyroiditis is the most common cause of hypothyroidism in iodine sufficient areas.

Presence of goitrogens in diet [14], micronutrient deficiency such as selenium and iron deficiency may cause hypothyroidism and goiter [15]. Poverty, insufficient iodine supplementation and fluorinated water may be the major cause for thyroid disorder among pregnant women.

In the sub mountain areas (Kashmir to North East India), geo-chemical nature in deficiency of iodine and micronutrients, due to glaciations, high rain fall and floods leading to decrease iodine content in soil and water is considered to be the cause of increase prevalence of hypothyroidism in these regions [16, 17].

Serum TSH and free T4 are the best tests to screen and diagnose hypothyroidism during pregnancy. The prevalence of overt or subclinical hypothyroidism depends on the upper TSH cut-off levels used. There is strong evidence that the reference range for serum TSH is lower throughout the pregnancy compared with the non pregnant state. The lowest serum TSH levels are observed during the first trimester of pregnancy

and are apparently related to hCG stimulation of the thyroid gland as serum hCG levels are highest early in the gestation.

According to several guidelines, serum TSH reference intervals should be established from the 95% confidence limits of the log-transformed values of at least 120 apparently healthy individuals without any personal or family history of thyroid disease, goitre, thyroid autoantibodies or medications.

American thyroid association recommends that trimester-specific reference ranges for serum TSH, as defined in population with optimal iodine intake, should be applied. If trimester-specific reference ranges for serum TSH are not available in the laboratory, the following reference ranges are recommended: first trimester: 0.1–2.5 mIU/L, second trimester: 0.2–3.0 mIU/L, third trimester: 0.3–3.0 mIU/L [18].

As few laboratories have established trimester-specific reference ranges, the use of these latter TSH reference ranges is widespread. When applying these reference ranges, several studies report a prevalence of hypothyroidism of 12-15% during pregnancy. There is a strong evidence in the literature that the reference range for serum TSH is lower throughout the pregnancy i.e. both the lower normal limit and the upper normal limit of serum TSH are decreased by about 0.1–0.2 mIU/L and 1.0 mIU/L respectively compared with the customary TSH reference interval of 0.4–4.0 mIU/L of non-pregnant women.

However, the American association of clinical endocrinologists and the endocrine society consensus panel have continued to recommend that 4.5 mIU/L be maintained as the upper limit of normal for serum TSH, reasoning that although some individuals within the range of 2.6–4.5 mIU/L may have subclinical thyroid disease, there is a lack of evidence of adverse outcome in this group. In this study, the upper normal limit of serum TSH was taken as 2.5 mIU/l.

Prevalence of subclinical hyperthyroidism according to the present study was 1.8% which was comparable to the study conducted by Dr Thanuja, et al. [7] (1.3%). Studies conducted by Taghavi, et al. [5], Tuija Mannisto, et al. [19] and Rajput, et al. [8] showed prevalence of subclinical hyperthyroidism of about 4.2%, 3.5% and 3.3% which is higher when compared to the present study. Prevalence of subclinical hyperthyroidism according to studies conducted by Stagnaro green, et al. [18] and Ajmani, et al. [6] was 0.5% and 0.75% respectively which was less when compared to the present study.

Prevalence of overt hyperthyroidism according to the present study was 0.6% which was comparable to studies conducted by Taghavi, et al. [5] (0.6%), Ajmani, et al. [6] (0.5%) and Stagnaro green, et al. [18] (0.4%). Studies conducted by Dr Thanuja, et al. [7] and Tuija Mannisto, et al. [19] shows prevalence of overt hyperthyroidism of 2% and 1.3% respectively which was higher when compared with the present study.

Thyroid diseases are prevalent in women of child-bearing age group and for this reason commonly present in pregnancy and the puerperium. Uncorrected thyroid disorders in pregnancy have adverse effects on fetal and maternal well-being. Women with thyroid disorder, both overt and subclinical are at increased risk of pregnancy related complications such as spontaneous abortion, preeclampsia, preterm labor and abruption placenta. Fetal complications include low-birth-weight babies, preterm delivery, intra uterine growth restriction and still birth.

In this study, subclinical hypothyroidism in pregnancy is associated with the complications like PE (9.37%), AP (1.56%), PTD (7.81%), AB (4.68%), IUGR (6.25%), LBW (4.68%) and SB (1.56%). Comparison of incidence of complications in pregnant women having

subclinical hypothyroidism was as per **Table – 5**.

In a study done by Leung, et al. [20], the incidence of the complications in pregnant women with subclinical hypothyroidism was PE (15%), PTD (9%) and LBW (9%), which is slightly more than the present study.

In the study done by Sahu MT, et al. [3] the complications like PE (9.8%), PTD (10.3%), IUGR (2.4%) and SB (2.5%), were seen in pregnant women having subclinical hypothyroidism. In these two studies there was no incidence of abruption placenta and abortion, but in the present study it is 1.56% and 4.3% respectively, which is significant.

In study conducted by Taghavi, et al. [5] the incidence of complications in pregnant women with subclinical hypothyroidism was PE (2.7%) and PTD (2.7%) which was less when compared to the present study.

According to the study done by Ajmani, et al. [6] in pregnant women with subclinical hypothyroidism the incidence of complications like PE (22.3%) and LBW (12.11%) was more when compared to the present study, incidence of complications like SB (1.7%) was comparable to the present study and the incidence of complications like PTD (5.8%), IUGR (4.9%) and AB (2.39%) was slightly less when compared to the present study.

In this study, overt hypothyroidism in pregnancy was associated with the complications like PE (14.28%), AP (3.57%), PTD (10.71%), AB (7.14%), IUGR (10.71%), LBW (10.71%) and SB (3.57%) Comparison of the incidence of complications in pregnant women with overt hypothyroidism was as per **Table - 6**.

Table - 5: Comparison of incidence of complications in pregnant women having subclinical hypothyroidism.

Complication	**PE**	**AP**	**PTD**	**AB**	**IUGR**	**LBW**	**SB**
In this study	9.3%	1.56%	7.81%	4.68%	6.25%	4.68%	1.56%
Leung, et al. [20]	15%	-	9%	-	-	9%	-
Sahu MT, et al. [3]	9.8%	-	10.3%	-	2.4%	-	2.5%
Taghavi, et al. [5]	2.7%	-	2.7%	-	-	-	-
Ajmani, et al. [6]	22.3%	-	5.8%	2.39%	4.9%	12.11%	1.7%

(PE: preeclampsia, AP: abruption placenta, PTD: preterm delivery, AB: abortion, LBW: low birth weight, SB: still birth)

Table - 6: Comparison of the incidence of complications in pregnant women with overt hypothyroidism.

Complication	**PE**	**AP**	**PTD**	**AB**	**IUGR**	**LBW**	**SB**
In this study	14.28%	3.57%	10.71%	7.14%	10.71%	10.71%	3.57%
Leung, et al. [20]	22%	-	-	-	-	22%	4%
Sahu MT, et al. [3]	20.7%	-	4.7%	-	13.8%	-	2.9%
Ablovich, et al. [21]	-	19%	-	-	-	6%	3%
Ajmani, et al. [6]	16.6%	16.6%	33.3%	16.6%	25%	50%	16.6%

(PE: preeclampsia, AP: abruption placenta, PTD: preterm delivery, AB: abortion, LBW: low birth weight, SB: still birth)

In a study done by Sahu MT, et al. [3], the complications like PE (20.7%), PTD (4.7%), IUGR (13.8%) and SB (2.9%) were seen in the cases of overt hypothyroidism. In a study done by Leung, et al. [20], the incidence of complications in pregnant women with overt hypothyroidism was PE (22%), LBW (22%) and SB (4%). In a study done by Abolovich, et al. [21], complications like AP (19%), LBW (6%) and SB (3%) were seen in the cases of overt hypothyroidism. In study done by Ajmani, et al. [6] the incidence of complications in cases of overt hypothyroidism was PE (16.6%), AP (16.6%), PTD (33.3%), IUGR (25%), LBW (50%), AB (16.6%) and SB (16.6%).

The incidences of the complications varied in different studies but some studies are comparable. In our study the incidence of abortion was 7.14%, which is significant and not mentioned in any other studies except the study conducted by Ajmani, et al. [6] which showed the incidence of abortion as 16.6%.

While treatment of overt hypothyroidism has been shown to prevent the obstetric and neonatal complications, the evidence for treatment of subclinical hypothyroidism for prevention of complications is less. However a recent screening study where women were characterised as high risk and low risk in terms of the chance of adverse obstetric outcome there was a significant reduction in adverse outcomes even in low risk women who were screened for subclinical hypothyroidism.

Although hyperthyroidism in pregnancy is uncommon, effects on both the mother and child are critical. In the present study, subclinical hyperthyroidism in pregnancy was associated with complications like PE (11.11%), PTD (5.55%), AB (5.55%), IUGR (11.11%) and SB. (5.55%). In this study, overt hyperthyroidism was associated with the complication AB (66.7%). Comparison of incidence of complications in pregnant women with subclinical hyperthyroidism was as per **Table – 7**. Comparison of incidence of complications in pregnant women with hyperthyroidism was as per **Table – 8**.

Table - 7: Comparison of incidence of complications in pregnant women with subclinical hyperthyroidism.

Complication	**PE**	**AP**	**PTD**	**AB**	**IUGR**	**LBW**	**SB**
This study	11.11%	-	5.55%	5.55%	11.11%	-	5.55%
Tuija Mannisto, et al. [19]	3.5%	1%	-	-	-	-	-
Taghavi, et al. [5]	4.7%	-	4.7%	-	-	-	-

(PE: preeclampsia, AP: abruption placenta, PTD: preterm delivery, AB: abortion, LBW: low birth weight, SB: still birth)

Table - 8: Comparison of incidence of complications in pregnant women with hyperthyroidism.

Complication	**PE**	**AP**	**PTD**	**AB**	**IUGR**	**LBW**	**SB**
This study	11.11%	-	5.55%	12.5%	11.11%	-	5.55%
Miller, et al. [23]	4.7%	-	-	-	-	2.3%	-
Kriplani, et al. [24]	22%	-	25%	-	-	-	-
Robert Negro, et al. [22]	-	-	16.7%	14.3%	-	-	-

(PE: preeclampsia, AP: abruption placenta, PTD: preterm delivery, AB: abortion, LBW: low birth weight, SB: still birth)

In a study done by Robert Negro, et al. [22], hyperthyroidism in pregnant women in low risk group was associated with complications like gestational hypertension (16.7%), PTD (16.7%) and AB (14.3%). In a study done by Tuija Mannisto, et al. [19], subclinical hyperthyroidism in pregnancy was associated with complications like PE (3.5%) and AP (1.0%). In study done by Miller, et al. [23] the incidence of complications in subclinical hyperthyroidism was PE (4.7%) and LBW (2.3%).

In a study done by Kriplani, et al. [24], hyperthyroidism in pregnancy was associated with complications like PE (22%), PTD (25%) and no perinatal death occurred in this study. Incidences of the complications varied with the studies. Some studies have not classified the hyperthyroid cases in to subclinical and overt type. So incidence of PE and PTD was significantly high in the study of Kriplani, et al. than the present study.

In the present study, overt hyperthyroid patients were prone to have miscarriage 66.66%, which was significantly high. This study showed the incidence of IUGR as 11.11% and the incidence of still birth as 5.55% in cases of hyperthyroidism which was significant and was not shown by any other study.

Conclusion

This study showed a high prevalence of thyroid disorder (11.6%) especially hypothyroidism in pregnant women, with the prevalence of subclinical hypothyroidism being 6.4% and overt hypothyroidism being 2.8%. Although hyperthyroidism in pregnancy is uncommon, effects on both the mother and fetus are critical. Due to the immense impact that the maternal thyroid disorder has on maternal and fetal outcome, prompt identification of thyroid disorders and timely initiation of treatment is essential. Thus, universal screening of pregnant women for thyroid disorder should be considered especially in a country like India where there is a high prevalence of undiagnosed thyroid disorder.

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