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PREVALENCE AND MATERNAL EFFECT OF HYPOTHYROIDISM IN PREGNANCY

Obstetrics & Gynaecology

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ABSTRACT

Thyroid disorders are among common endocrine problem encountered in pregnancy. It is now well established that not only overt but subclinical thyroid dysfunction also has adverse effects on maternal and fetal outcome. There are few data from Bangladesh about the prevalence of thyroid dysfunction in pregnancy. With this background, this study aims to find prevalence of thyroid dysfunction in pregnancy and its impact on obstetrical outcome. **Materials and methods:** It is an observational study done in a v.s general hospital during the period from February to December 2020 on 130 hypothyroid mothers to observe maternal effects of hypothyroidism. Patients were collected as per inclusion and exclusion criteria after informed written consent. Data was compiled and analyzed and presented. **Results:** Among 1148 total patients, 1018(89%) were normal and 130(11%) were diagnosed as hypothyroid. Among all the patients, 35% patients are from inside the Ahmedabad and 65% are from outside. Among 130 hypothyroid cases age range revealed 20-45 years and 20 -30 years age group were 82(63.07%), 30-40 years age group was 40(30.76%) and >40 years age group were 8(6.15%). Prim gravida was 48(36.92%) cases and multigravida was 82(63.08%) cases, anemia was present in 40(30.76%) cases, 10(7.69%) patients had hypertension, GDM and DM was found in 20(15.38%)and 3(2.30%) cases respectively, preconception hypothyroidism was found in 10(7.69%) and on Levothyroxine during ANC was 120(92.30%).Among all, 63(48.46%) cases were underwent vaginal delivery and 67(51.53%) cases underwent cesarean section. Untreated and irregular treatment in hypothyroidism are associated with pregnancy complications like spontaneous miscarriage 40(30.76%), maternal anemia 55(42.30%), pre-eclampsia 4(3.07%), pre term birth 16(12.30%), postpartum hemorrhage 3(2.30%). **Conclusion:** Hypothyroidism is a common clinical condition during pregnancy and it causes variable pregnancy outcome

KEYWORDS

Hypothyroidism; Outcome; Pregnancy.

INTRODUCTION

Development of maternal thyroid disorders during early pregnancy can influence the pregnancy outcome and fetal development1. Thyroid dysfunction can lead to premature birth, pregnancy induced hypertension, low birth weight infants, IUGR, abruption placenta and increased fetal mortality. Sahu MT et al studied 633 women in second trimester. In their study the prevalence of thyroid disorders was also 12.7%2.

Maternal hypothyroidism in the first trimester may be harmful for the fetal brain development lead to mental retardation[3]. In view of potential adverse outcomes Associated with maternal thyroid disorders and obvious benefits of treatment, some expert panels have suggested routine thyroid function screening in all pregnant women4.

Based on the results of the present study we therefore could suggest for an increased threshold for screening and detection of thyroid dysfunction among Bangladeshi pregnant women attending to routine antenatal clinic and to be potentially aware of associated maternal and fetal complications.

MATERIALS AND METHODS

A total of 1148 mothers were screened and among them 130 mothers were diagnosed as hypothyroid and included in the study. It was a cross sectional study done during the period from February to December 2020 in a tertiary care hospital vs general hospital of Ahmedabad. Mothers of < 13 Weeks Gestation, singleton pregnancy and Primigravida / multigravida were included in the study and multifetal gestation, had previous bad obstetric history with known cause, who planned to deliver in other hospital were excluded from the study.

All the patients coming to OPD in 1st trimester for regular antenatal visits. After obtaining the gestational age and informed consent of the patients in 1st trimester were randomly selected from the study. These patients fulfilled all the inclusion criteria. A detailed history was taken regarding the symptoms, and signs of thyroid disorders. Menstrual history, obstetric history, past history medical history, family history, personal history. A thorough general physical examination with reference to pulse, BP, Temperature, respiratory rate were noted followed by CVS, CNS, RS, Local thyroid examination. Per abdomen examination and PV examination done and pregnancy confirmed and patients are sent for TSH testing and If TSH comes deranged then FT3 and FT4 levels are checked. Hypothyroidism was done on the basis of level of TSH, FT3 and FT4. After collection data was compiled and

RESULTS

Among 114 8 total patients 1018(89%) werenormal and 130(11%) were diagnosed as hypothyroid. Among the 35% patients from inside Ahmedabad and 65% from outside (Figure 1 & 2).

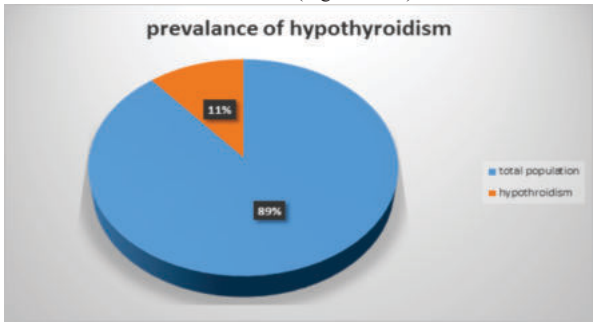

Figure 1

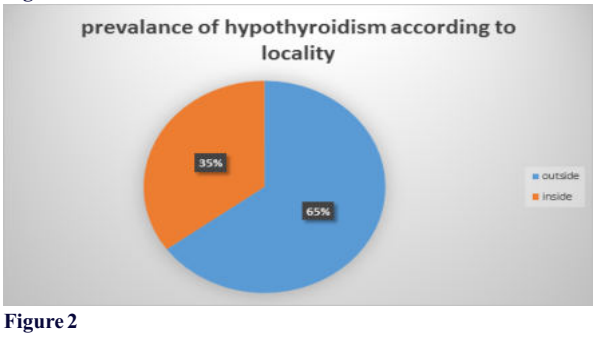

Figure 2

Among all 130 cases of hypothyroidism age range was 20-45 years and 20 -30 years age group were 82(63.07%), 30-40 years age group was 40(30.76%) and >40 years age group were 8(6.15%). Primigravida was 48(36.92%) cases and multigravida was 82(63.08%) cases, anemia was present in 40(30.76%) cases, 10(7.69%) patients had hypertension, GDM was found in 20(15.38%) cases and DM was found in 3(2.30%) cases, preconception hypothyroidism was found in 10(7.69%) and on Levothyroxine ANC was 120(92.30%)

(Table I)

features	Number	Percent
Age range 20-45 years	130	100
20-30 years	82	63.07
30-40 years	40	30.76
>40 years	8	6.15
Primigravida	48	36.92
multigravida	82	63.08
Anemia	40	30.76
Hypertension	10	7.69
GDM	20	15.38
DM	3	2.30
Preconceptional hypothyroidism	10	7.69
On levothyroxine ANC	120	92.30
Regular ANC checkup	102	78.46
Irregular ANC checkup	28	21.52

Among all 63(48.46%) cases were undergone vaginal delivery and 67(51.53%) cases underwent cesarean section (Figure 3)

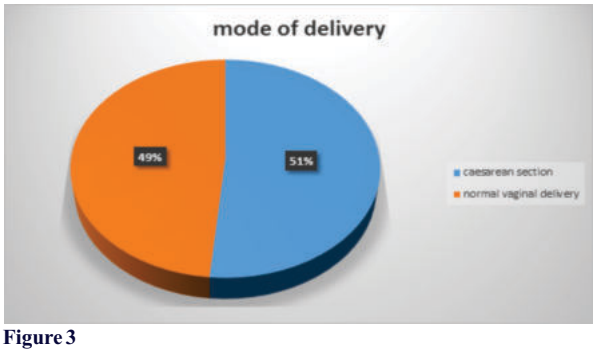

Figure 3

Untreated and irregular treatment in hypothyroidism is associated with pregnancy complications like spontaneous miscarriage 40(30.76%), maternal anemia 55(42.30%), pre- eclampsia 4(3.07%), pre term birth 16(12.30%), postpartum hemorrhage 3(2.30%).

Table 2: pregnancy complication

complication	number	Percent
Spontaneous miscarriage	40	30.76
Maternal anemia	55	42.30
Pre-eclampsia	4	3.07
Preterm birth	16	12.3
Postpartum hemorrhage	3	2.3

DISCUSSION

Among 1148 total patients 1018(89%) were normal and 130(11%) were diagnosed as hypothyroid. In 2010 Sahu, Meenakshi Titoria et al, screened 633 pregnant women in second trimester. TSH level estimated5. If TSH level was deranged, then free T4 and Thyroperoxidase antibody level were done. Patients were managed accordingly and followed till delivery. Their obstetrical and perinatal outcomes were noted. Their results showed that prevalence of thyroid dysfunction was high in this study, with subclinical hypothyroidism in 6.47% and overt hypothyroidism in 4.58% women.

Among all 130 cases of hypothyroidism age range was 20-45 years and 20 -30 years age group were 82(63.07%), 30-40 years age group was 40(30.76%) and >40 years age group were 8(6.15%). Primigravida was 48(36.92%) cases and multigravida was 82(63.08%) cases, anemia was present in 40(30.76%) cases, 10(7.69%) patients had hypertension, GDM was found in 20(15.38%) cases and DM was found in 3(2.30%) cases, preconception hypothyroidism was found in 10(7.69%) and on Levothyroxine ANC was 120(92.30%).In 1998, a study was done by Leung AS et al losangeles[6]. A cohort of 68 hypothyroid patients with no other medical illness were divided in to two groups according to thyroid function tests. The first one had 23 women with overt hypothyroidism and the second 45 women with subclinical hypothyroidism. They sought to Identify the pregnancy outcomes. Gestational hypertension namely eclampsia, preeclampsia and pregnancy induced hypertension was significantly more in overt and subclinical hypothyroidism patients in the general population with rates of 22.15 and 7.6% respectively. In addition 36% of the overt, and 25% of the subclinical hypothyroid subjects, who remained hypothyroid at delivery developed gestational hypertension, Except for one still birth and one case of club feet. Hypothyroidism was not associated with adverse fetal and neonatal outcome.

Among all 63(48.46%) cases were undergone vaginal delivery and 67(51.53%) cases undergone cesarean section. Untreated and irregular treatment in hypothyroidism is associated with pregnancy complications like spontaneous miscarriage 40(30.76%) maternal anemia 55(42.30%) pre-eclampsia 4(3.07%) pre term birth 16(12.30%) postpartum hemorrhage 3(2.30%). In a recent publication in Sharma PP et al titled Hypothyroidism and Pregnancy the publication reports that in Hypothyroid women who become pregnant also carry an increased risk for obstetrical complications such as IUD, pregnancy induced hypertension, abruption placenta and increase in perinatal mortality7. Higher perinatal mortality. There is also recent evidence for long lasting psych neurological impairment in the progeny. In a study done by Leung et al, the incidence of complications were PE (22%), LBW (22%), and SB (4%) in cases of overt hypothyroidism6. In a study done by Abolovich et al the complications like AP (19%), LBW (6%), and SB (3%) were seen in cases of overt hypothyroidism8. The incidence of complications varied in different studies but some studies are comparable. In our study the incidence of abortion (11.8%) which is significant is not seen in other studies.

CONCLUSION

Prevalence of thyroid disorders, especially subclinical hypothyroidism and overt hypothyroidism was high. Adverse effects on maternal and fetal outcome were seen emphasizing the importance of routine antenatal thyroid screening.

DISCLOSURE

All the authors declared no competing interest.

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