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## A Clinical Study of Maternal and Fetal Outcome in Known Cases of Hypothyroidism with Pregnancy on Treatment

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### ABSTRACT

*Aims and Objectives: To study the maternal and fetal outcome in known cases of hypothyroidism in pregnancy on treatment*

*Method: a Randomised study of 100 known cases of hypothyroidism with pregnancy on treatment admitted in Basaveshwar teaching and general hospital, attached to Mahadevappa Rampure Medical College, Kalaburgi.*

*Conclusion: In our study, it has been shown that hypothyroidism with pregnancy who were on treatment has reached up to the term without any fetal and maternal complications.*

**Keywords:** *Hypothyroidism, Pregnancy, Pre-eclampsia, Twin Gestation.*

### INTRODUCTION

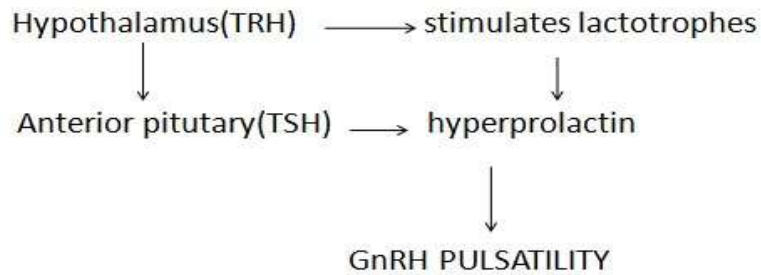
Thyroid disease during pregnancy is a very common clinical problem we are facing today because pregnancy has profound impact on thyroid gland and its functions.<sup>1,8</sup>

Thyroid undergoes physiological changes during pregnancy such as moderate enlargement of thyroid gland and increased vascularity,  $\beta$ -hcg causes thyroid gland stimulation since the first trimester, due to structural similarity with TSH.<sup>2,10</sup>

The Thyrotrophic activity of  $\beta$  -hcg causes decreasing serum TSH the first trimester.<sup>3,14</sup> Hence pregnant women have lower serum TSH levels than the non-pregnant women.

## **HYPOTHYROIDISM IN PREGNANCY-**

Prevalence- 3.1%



### **Causes**

1. Chronic autoimmune thyroiditis (Hashimoto's)
2. Radioiodine ablation
3. Thyroidectomy
4. Silent/post-partum thyroiditis
5. Subacute thyroiditis
6. Iodine deficiency
7. Drugs-thionamide, lithium

### **SIGNS**

Goitre (primary hypothyroidism), bradycardia, non-pitting edema, dry skin, delayed deep tendon reflexes, hypertension, slow speech, slow movements.<sup>4,9</sup>

### **SYMPTOMS**

Fatigue, lethargy, weakness, cold intolerance, mental slowness, depression, dry skin, constipation, muscle cramps, irregular menstrual cycles, infertility, mild weight gain, fluid retention, hoarseness of voice.

Symptoms of hypothyroidism can often be masked by the hypermetabolic state of pregnancy.<sup>5,11</sup>

### **COMPLICATIONS OF HYPOTHYROIDISM IN PREGNANCY**

#### **MATERNAL**

Abortion  
Preterm  
Prematurity  
Pre-eclampsia  
Anaemia  
Abruptio placenta and  
Post-partum hemorrhage is very common.

#### **FETAL**

Stillbirth  
IUGR

**NORMAL VALUES IN PREGNANCY**

	<b>1<sup>st</sup> TRIMESTER</b>	<b>2<sup>ND</sup> TRIMESTER</b>	<b>3<sup>RD</sup> TRIMESTER</b>
TSH(mIU/L)	0.03-2.3	0.03-3.7	0.13-3.4
T4(ng/dl) (pmol/L)	0.86-1.77 11.1-22.9	0.63-1.29 8.1-16.7	0.66-1.12 8.5-14.4
T3(pmol/l)	3-5.7	2.8-4.2	2.4-4.1
	TSH-Normal	TSH-Increased	TSH-Decreased
FT4-Normal	Normal	Subclinical hypothyroidism	Subclinical Hyperthyroidism
FT4-Increased	Consider TSH high	Hyperthyroidism (pituitary adenoma)	Hyperthyroidism (Graves Toxic Nodule)
FT4-Decreased	Consider TSH low	Hypothyroidism (primary thyroid failure)	Hypothyroidism ( T3 TOXICOSIS)

**INCIDENCE**

- Normally in pregnancy incidence is 2-3%, among this subclinical hypothyroidism 2-2.5%. overt hypothyroidism 0.3-0.5% <sup>(6,7)</sup>
- In our study subclinical hypothyroidism is 0.8% and overt hypothyroidism is 0.12%.
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**METHOD**

Randomised study of 100 known cases of hypothyroidism with pregnancy on treatment admitted in labour room with complains of labour pain, after taking consent, detailed history, and physical examination, sent all the basic investigations especially T4 and TSH and ultrasonography were performed in Basaveshwar Hospital, Mahadevappa Rampure Medical College, Kalaburgi.

**Inclusion Criteria**

All pregnant women in labour irrespective of parity, with spontaneous onset of labour, pre- eclampsia, Rh negative pregnancy, malpresentations, multiple pregnancies, preterm labour, polydrominos, previous LSCS.

**Exclusion Criteria**

Diabetes mellitus, jaundice in pregnancy, cardiac and other medical disorders.

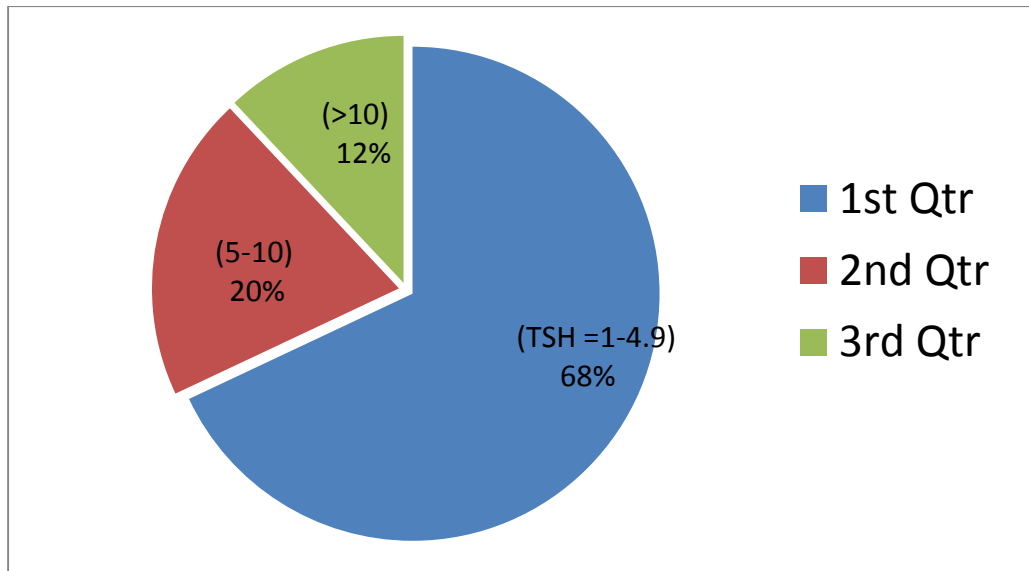
**Results**

<b>No of Cases</b>	<b>Mode of Delivery</b>
LSCS	64
NORMAL VAGINAL DEIVERY(TWIN)	31(01)
PRETERM VAGINAL DELIVERY(TWIN)	01(01)
INSTRUMENTAL DELIVERY( VACCUM )	02
TOTAL CASES	100

**According to TSH Levels**

<b>Total No. of Cases</b>	<b>Subclinical Hypothyroidism</b>	<b>Overt Hypothyroidism</b>
100	88	12

No. of Cases Depending on TSH level:



FT4 Levels IN 3<sup>RD</sup> Trimester

FT4 (pmol/dl)	TOTAL NO. OF CASES(100)
<8.5	12
8.5-14.4	88

Fetal Weight

FETAL WEIGHT(KG)	NO.OF CASES(102)
1.5-1.9	02
2.0-2.5	55
>2.5	45

Apgar score

	APGAR SCORE -1MIN	APGAR SCORE -5MIN
>7/10	97	101
< 7/10	05	01
<b>TOTAL</b>	<b>102</b>	<b>102</b>

## **DISCUSSION**

In our study, out of 100 cases admitted in labour room (majority are referred cases because of tertiary health centre), 64 patients underwent LSCS for an obstetrical condition like breech presentation, preeclampsia, CPD, previous LSCS, fetal distress and on demand.

- 32 patients had normal vaginal delivery
- 02 patients had preterm vaginal delivery
- 02 patients had instrumental vaginal delivery (vacuum extraction).
- It is observed that in our study all the women with known hypothyroidism with pregnancy who were receiving treatment with Tab THYROXINE 12.5µg,25µg,50µg, 75µg, 100µg, 125µg,150µg,175µg respectively depending on their TSH level.
- Except for one case with twin gestation with 31 weeks of gestational age came in the active phase and delivered vaginally, both male babies weighing 1<sup>st</sup> twin-1.5kg, 2<sup>nd</sup> twin-1.5kg needed NICU admission.
- This Preterm delivery may be because of twin gestation which may not be attributed to the hypothyroidism.
- All other (99cases), which have undergone LSCS and vaginal delivery, instrumental delivery- the maternal outcome are good and all babies weighing 2-3.75 kg, were healthy and not needed NICU admission and were on mother side.
- There were no still births and perinatal deaths.

## **CONCLUSION**

In our study, it has been shown that 98% of cases of hypothyroidism with pregnancy who were on treatment has reached up to the term without any fetal and maternal complications. Tab levothyroxine is miraculous in the management of hypothyroidism with pregnancy.

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