

# Prevalence of Thyroid Disorder in Pregnancy and Pregnancy Outcome

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**Abstract:** *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. Pregnancy has a huge impact on the thyroid function in both healthy women and those that have thyroid dysfunction. The prevalence of thyroid dysfunction in pregnant women is relatively high.<sup>(1)</sup>*

**Keywords:** Pregnancy, Thyroid Dysfunction, hypothyroidism, hyperthyroidism

## 1. Introduction

Thyroid hormones have profound variation and are associated with severe health impacts<sup>(2,3)</sup>. Pregnancy, has a reversible effect on the thyroid gland and its functions. Pregnancy is actually a state of excessive thyroid stimulation leading to an increase in thyroid size by 10% in iodide sufficient areas and 20-40% in iodide deficient regions<sup>(4)</sup>. Furthermore following the physiological and hormonal changes caused by pregnancy and human chorionic gonadotropin (HCG) the production of thyroxine (T4) and triiodothyronine (T3) increase up to 50% leading to 50% increase in a woman's daily iodide need, while Thyroid-stimulating hormone (TSH) levels are decreased, especially in first trimester<sup>(5)</sup>. In an iodide sufficient area, these thyroid adaptations during pregnancy are well tolerated, as stored inner thyroid iodide is enough; however in iodide deficient areas, these physiological adaptations lead to significant changes during pregnancy<sup>(6)</sup>.

## 2. Materials & Methods

Prospective cross sectional study of pregnant cases admitted in the Department of Obstetrics and Gynecology, osmania medical college over a period of 24months which includes 500 routine antenatal cases. Singelton pregnancy irrespective of gravida during 1<sup>st</sup> trimester were included in the study.

## 3. Results

### Prevalence of Thyroid Disorders

No. of persons Screened	No. with TD	% prevalence
500	69	13.80%

### Prevalence of Thyroidal disorders among 500 women screened

Type of TD	No. of Cases	Percentage
Subclinical Hypo	36	7.2
Overt Hypo	16	3.2
Subclinical Hyper	12	2.4
Overt Hyper	5	1

### Fetal complications among Overt Hypo

Complications	No. of cases
LOW BIRTH WEIGHT	6
IUGR	5
STILL BIRTH	2

### Maternal complications among 18 cases of Subclinical Hyper

Complications	No. of cases	Percentage
PRE ECLAMPSIA	2	11.1
PRETERM DELIVERY	2	11.1
ABORTION	1	5.6

### Fetal complications among Subclinical Hyper

Complications	No. of cases
IUGR	6
STILL BIRTH	4

## 4. Discussion

Early detection of thyroid dysfunctions and treatment of mother during gestation improves the outcome<sup>(7)</sup>. The prevalence of thyroid disorders in our study was 13.8% . Our findings are consistent with the reports from the study of Sahu MT et al<sup>(8)</sup>, who studied 633 women in second trimester. Subclinical hypothyroidism is defined as increased TSH with normal concentrations of FT4 and FT3. The prevalence of subclinical hypothyroidism during pregnancy is estimated to be 2% to 5%.<sup>(9)</sup> It is almost always asymptomatic. Women with subclinical hypothyroidism are more likely than euthyroid women to have TPO antibody positivity (31% compared to 5%).<sup>(10)</sup> Isolated maternal hypothyroxinemia is defined as a low FT4 and normal TSH, which can be found in approximately 1% to 2% of pregnancies. In the FASTER study, among the women with hypothyroxinemia and normal TSH, there was an increased odds ratio for preterm labor (1.62, 95% CI 1.00–2.62), macrosomia (1.97, 95% CI 1.37–2.83), and gestational diabetes (1.70, 95% CI 1.02–2.84), but these results were not consistent<sup>(11)</sup> A study by Casey *et al.*,<sup>(12)</sup> concluded that isolated maternal hypothyroxinemia in the first half of pregnancy has no adverse affects on pregnancy outcome.

## 5. Conclusion

Prevalence of thyroid disorders, especially subclinical hypothyroidism (7.2%) and overt hypothyroidism (3.2%) was high. Significant adverse effects on maternal and fetal outcome were seen emphasizing the importance of routine antenatal thyroid screening.

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