PREVALENCE OF THYROID DISORDER IN FIRST TRIMESTER OF PREGNANCY, STUDY FROM LUMBINI PROVINCE NEPAL

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ABSTRACT

INTRODUCTION

Thyroid disorder is the second most common endocrine disorder of pregnancy. The most common thyroid disorder is hypothyroidism which often goes undiagnosed during pregnancy without screening. It has influence in maternal and fetal outcome of pregnancy. The objective of this study is to determine the prevalence of thyroid disorder in the first trimester of pregnancy.

MATERIAL AND METHODS

This was cross-sectional observational study conducted for a period of 6months (Jan - June 2022) at Universal College of Medical Sciences, Bhairahawa, Nepal. All the pregnant women in their first trimester who came for antenatal check-up in gynae OPD was included after taking consent.

RESULTS

Total 393 cases were evaluated. 58% were primigravida and 42% were multigravida. Mean age was 26 years with minimum 17 years and maximum 41 years. Majority of cases were of the age group 20 to 30 years 76.6%. Thyroid disorder noted in 21.3%. Hypothyroidism found in 18.6% with overt hypothyroidism in 12.8% and subclinical hypothyroidism in 5.8%. Hyperthyroidism noted in 2.7% with overt hyperthyroidism in 1.5% and subclinical hyperthyroidism in 1.2%.

CONCLUSION

Thyroid disorder in pregnancy in common health problem in first trimester in pregnancy. Early diagnosis and treatment is needed to reduce complications associated with this endocrine disorder of pregnancy.

KEYWORDS

Thyroid disorder, First trimester, Pregnancy

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INTRODUCTION

The most common thyroid disorder is hypothyroidism which often goes undiagnosed during pregnancy without screening.[1-4] It has influence in maternal and fetal outcome of pregnancy. Hypothyroidism is associated with spontaneous abortion, pre-eclampsia, premature delivery, low birth weight, intrauterine growth retardation and high perinatal mortality during pregnancy.[5]

Thyroid disorders have been categorized as subclinical and overt disorders. Subclinical hypothyroidism is defined as elevated serum thyroid-stimulating hormone (TSH) level with normal serum thyroxine level and overt/clinical hypothyroidism is defined as a high serum TSH with low serum thyroxine level. Subclinical hyperthyroidism is defined as low serum TSH level with normal serum thyroxine level and overt/clinical hyperthyroidism is defined as low serum TSH level with elevated serum thyroxine level.[6]

There are various studies done in Nepal with variable prevalence of thyroid disorder in pregnancy.[7-10] There was no study done from Lumbini province Nepal. So we wanted to know the status of thyroid disorder in first trimester of pregnancy in this part of Nepal.

MATERIAL AND METHODS

This study was cross-sectional observational study conducted at Universal College of Medical Sciences. Ethical approval taken from ethical review committee with IRC approval (UCMS/IRC/047/21). Data collection done after getting ethical approval for a period of 6 months (January-June 2022).All the pregnant women presented in Gynecology OPD in their first trimester were evaluated. Total 393 pregnant women giving consent for evaluation were included for analysis. Pregnant women with multiple gestation, known case of thyroid disorder, other pre-existing medical illness and who do not feel comfortable to get enrolled in this study were excluded.

Clinical details noted in proforma. Thyroid function test along with other antenatal investigations were performed. Those having problem with reports were counselled regarding condition its influence in pregnancy outcome. Treatment advised as per need.

Categorization of patients done into hypothyroidism and hyperthyroidism. Then into overt and subclinical hypo and hyperthyroidism based on report of thyroid function test. Observed findings tabulated and percentage calculation done. SPSS 22 software used for calculation and analysis of data.

RESULTS

Out of total 393 cases of first trimester pregnant women mean age was 26.1 years and median age was 26 years. Minimum age noted was 17 years and maximum age was 41 years.(Table 1) Out of total 228 (58%) were primigravida and 165 (42)% were multigravida.(Figure 1)

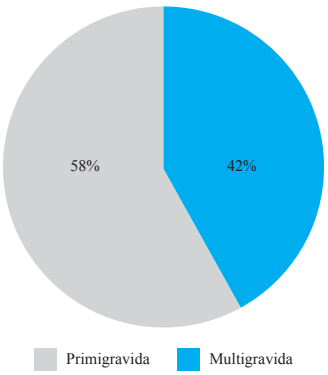

Figure 1. Parity distribution

Table 1. Age distribution

Age years	Number	Percentage
Less than 20	21	5.3
20 to 30	301	76.6
30 to 40	62	15.8
More than 40	9	2.3

Hypothyroidism was more common than hyperthyroidism in pregnant women with first trimester of pregnancy.(Table 2) Overt hypothyroidism was more common than subclinical hypothyroidism and overt hyperthyroidism was more common than subclinical hyperthyroidism.

Table 2. Thyroid disorder in first trimester of pregnancy

Thyroid disorder		Number of patients	Percentage
Hypothyroidism		73	18.6
	Overt	23	5.8
	Subclinical	50	12.8
Hyperthyroidism		11	2.8
	Overt	6	1.5
	Subclinical	5	1.3

DISCUSSION

In our study primigravida cases (58%) were more than multigravida (42%) in contrast to study done in 2014 by Tania et al[11] in Bangladesh, 56% of the pregnant females in the first trimester were multigravida (56%) and another study by Murty et al[12] also found multigravida females more than primigravida (53% and 47% respectively).Majority of patients were of the age group 20 to 30 years. SK et al[8] had a mean age 29.4 years and hypothyroidism was more common in multigravida. We found thyroid disorder in 21.4%. Khakurel G et al[9] found thyroid disorder in 24.6%. This result was similar but their study was on overall pregnant women while we evaluated only first trimester patients. Also our result was similar to their result as they found subclinical hypothyroidism more common than overt hypothyroidism.

Study by Ghimire A et al[10] found hypothyroidism in 34.2% cases which was more common than in our study. Higher mean age of 30 years was present in their study population. Study by Shrestha B et al[13] found hypothyroidism in 25.7% and hyperthyroidism in 3.3%. In their study subclinical hypothyroidism was more common which is similar to our study. Prevalence of both hypo and hyperthyroidism is higher in their study. They found hypothyroidism more common in the first trimester. Upadhyaya TL et al[14] found

overt hypothyroidism in 13% and subclinical hypothyroidism in 31%.

Study by Korde VR et al[15] from India found most patients with age group 20 to 25 years. They found thyroid disorder in 13.9%. They found hypothyroidism in 13.7% and hyperthyroidism in 0.14%. Their finding with prevalence of hypo and hyperthyroidism was less than in our study. They found subclinical hypothyroidism in 55.6%. Another study from India by Rajput R et al[16] found subclinical hypothyroidism in 21.5% and over hypothyroidism in 1.3% which is similar to our study. They found subclinical hyperthyroidism in 3.3% and overt hyperthyroidism in 0.4% contrary to ours where overt hyperthyroidism was more common than subclinical. Study by Dhanwal DK et al[17] found subclinical hypothyroidism more common than overt similar to ours. Study conducted in Indore by Dave et al[18] found out 9.8%were hypothyroid, 0.32% were hyperthyroid which is less than ours.

LIMITATIONS

This was observational study which lacks follow up of patients to look for issues like tolerance, compliance and control. This also does not provide information regarding complications and outcome.

CONCLUSION

In this single hospital study from Lumbini province Nepal we found that thyroid disorder is common in first trimester of pregnancy. Hypothyroidism is more common than hyperthyroidism. Subclinical hypothyroidism and overt hyperthyroidism are more common than overt hypothyroidism and subclinical hyperthyroidism in patients presenting to Universal College of Medical Sciences, Nepal.

CONFLICT OF INTEREST

None

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