PREVALENCE OF HYPOTHYROIDISM AND SCREENING OF THYROID DYSFUNCTION DURING FIRST TRIMESTER OF PREGNANCY AT PHC

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ABSTRACT

Hypothyroidism is one of the commonest endocrine disorders in pregnant women. The present study indicates a prevalence of hypothyroidism in more than 10% of pregnant women. Our study endorses the need for early antenatal screening of pregnant women in first trimester itself. If hypothyroidism is diagnosed in early pregnancy and is adequately treated and monitored, good maternal and foetal outcome is expected.

KEYWORDS

Hypothyroidism, Pregnancy.

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INTRODUCTION: Thyroid disorders are among the common endocrine disorders in pregnant women. It is now well established that not only overt but subclinical thyroid dysfunction can also have adverse effects on foetal and maternal outcome. The prevalence of clinical and subclinical hypothyroidism during pregnancy is estimated to be 1% and 6%(1) respectively.

Montoro et al (1981) suggested that adequate treatment with thyroxine decreased the frequency of obstetric complications in hypothyroid pregnant women.

Fisher et al (1979) proposed screening program for the early diagnosis and treatment of sporadic congenital hypothyroidism. This screening program was advised to detect cases of cretinism.

Vermiglio et al (1990) mentioned that attention deficit and hyperactivity disorder were common in the children born to mothers with early gestational hypothyroxinaemia.

MATERIALS AND METHODS: A prospective study of 50 patients was done in a Primary Health Centre. Detailed history and examination were done.

Patients were screened by serum TSH during their first antenatal visit. The reference range taken was 0.49 mIU/L to 4.67 mIU/L. After initial screening if serum TSH was found to be abnormal, the patient was counselled and requested to do free T4. When both the values were abnormal then the patient was labelled as hypo or hyperthyroidism. The reference range for free T4 was 0.7 ng/dL to 1.8 ng/dL.

In newly diagnosed hypothyroid cases, thyroxine was started according to serum TSH level and body weight. Initially, these patients were monitored 4 weekly till the levels were stabilised. Then, every 8 weeks till delivery.

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RESULTS:

Parity	No. of Hypothyroid Cases	Percentage
Primigravida	20	40
Multigravida 2-4	30	60
Total	**50**	**100**

Table 1: Distribution according to Parity

Table 2 reveals that majority of the hypothyroid women are multigravida(2-4) 60%. Forty percent of hypothyroid women were primigravida. Statistically, distribution of parity among women in this study related to thyroid status was insignificant.

Age (Years)	No. of Hypothyroid Cases	Percentage
18-22	5	10
23-27	20	40
28-32	15	30
>32	10	20
Total	**50**	**100**

Table 2: Distribution according to age

Forty percent of hypothyroid women were aged 23-27, thirty percent 28-32 years. Twenty percent of hypothyroid women were >32 years age where as ten percent were between 18-22 years as shown in table 2.

Mode of Delivery	No. of Hypothyroid Cases	Percentage
Vaginal	30	60
Caesarean Section	20	40
Total	**50**	**100**

Table 3: Distribution according to mode of delivery

Sixty percent of women with hypothyroidism delivered vaginally while only forty percent of them underwent caesarean section.

Indication for CS	No. of Hypothyroid cases	Percentage
Repeat CS	8	40
Twins	3	15
Foetal distress	5	25
CPD	4	20
Total	**20**	**100**

Table 4: Indications for caesarean section in hypothyroid women

Commonest indication seen in hypothyroid women undergoing caesarean section was repeat CS (40%).

Foetal Weight in Grams	No. of Hypothyroid Cases	Percentage
<1500	2	4
1500-2000	10	20
2000-2500	15	30
2500-3000	18	36
>3000	5	10
Total	**50**	**100**

Table 5: Foetal outcome according to weight

Distribution of cases according to foetal weight in hypothyroid women was statistically insignificant.

DISCUSSION: Infants born to hypothyroid mothers appear healthy and without evidence of thyroid dysfunction provided that there should be no previous severe iodine deficiency in utero. Maternal hypothyroidism during pregnancy raises serious concern about long lasting psycho-neurologic consequences for the progeny due to the risk of insufficient placental transfer of maternal thyroid hormones to the developing foetus during the first half of gestation.[1] The euthyroid status is important during first and second trimesters of pregnancy for foetal optimal neuronal development. Thyroid disease has multiple deleterious impacts on pregnancy, postpartum and developing foetus. Complications include miscarriage,[2,3,4,5,6] decreased intelligence quotient,[7,8] visual motor deficiencies in the offspring,[9] preterm delivery[10,11] and postpartum thyroiditis.[12,13,14] Hence, prenatal screening of serum TSH in early pregnancy is important for healthy pregnancy outcome.

Women with otherwise unexplained previous pregnancy losses probably should be treated if their TSH level is above 2.5 mIU/L. During pregnancy, a 30 to 40% increased need for thyroid hormones is the result of increased placental uptake, higher thyroid binding globulin levels and greater blood volumes. Those with subclinical hypothyroidism and/or high-normal TSH levels at the beginning of pregnancy may not be able to meet these needs and may show signs of thyroid insufficiency during pregnancy. Screening recommendations suggests that screening should be done with TSH only and fT3 & fT4 if required. A study of Vaidya et al commented that 30% with thyroid dysfunction remain undiagnosed.[15]

Some of the studies have also pointed that no significant differences were seen in adverse outcomes between case findings and universal screening groups. Adverse outcomes were less likely to occur among low risk women in screening group than those in case-finding groups.

In our study, more than 10% of patients were having TSH levels more than trimester specified normal levels. As different studies show screening for thyroid function should be done in early pregnancy, our study also endorses the above fact of screening thyroid dysfunctions in the first trimester of pregnancy, looking at the high percentage of abnormal TSH levels in pregnancies.

CONCLUSION: Maternal hypothyroidism is a disorder with great potential to adversely affect maternal and fetal outcomes and is also associated with multiple other conditions that affect maternal and fetal health. In our study 10% of cases with abnormal TSH levels were detected in early pregnancy with no detrimental fetal or maternal outcome. If the condition is detected early, it is easy to treat. Hence this condition needs early detection, prompt initiation of treatment, adequate follow up and most importantly education of doctors and patients regarding the condition.

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