



ASSESSING THE INCIDENCE OF THYROID DISORDERS AMONG NEONATES

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ABSTRACT

Thyroid hormones play a vital role in neonatal growth, brain development, and metabolic regulation. Maternal thyroid dysfunction, particularly hypothyroidism, can adversely affect fetal thyroid development and result in neonatal thyroid disorders, most commonly congenital hypothyroidism. The present prospective observational study aimed to assess the incidence of thyroid disorders among neonates and evaluate associated maternal risk factors such as hypothyroidism and diabetes mellitus in a tertiary care hospital in Bangalore, India. The study was conducted for six months (March–August 2024) at St. Philomena's Hospital and included 386 pregnant women and their neonates. Data were collected from patient case records, interviews, and laboratory investigations. Maternal demographic, obstetric, and clinical parameters along with neonatal thyroid profiles were analyzed descriptively. Most mothers belonged to the age group of 26–30 years (39.6%), and primigravida constituted 54.6%. Maternal hypothyroidism (10.4%) and diabetes mellitus (7.02%) were the most common comorbidities. Elevated neonatal TSH was observed in 1.3% of neonates, predominantly born to hypothyroid mothers, and follow-up was advised. A significant association between maternal thyroid dysfunction and neonatal thyroid outcomes was observed. The study emphasizes the importance of routine neonatal thyroid screening and optimal management of maternal thyroid disorders during pregnancy to reduce neonatal morbidity and ensure normal developmental outcomes.

KEYWORDS : Congenital hypothyroidism, Maternal hypothyroidism, Neonatal thyroid screening, Diabetes mellitus, Neonatal thyroid dysfunction

INTRODUCTION

Thyroid function in neonates is essential for normal physical growth, neurological development, and metabolic regulation. Fetal thyroid hormone production begins in the second trimester, while maternal thyroid hormones play a critical role in early gestation through placental transfer. Maternal hypothyroidism has been associated with congenital hypothyroidism and other neonatal thyroid dysfunctions, leading to potential long-term neurodevelopmental impairment if left untreated. Despite the availability of neonatal screening programs in many regions, a large proportion of neonates, particularly in low-resource settings, remain unscreened. The present study was undertaken to evaluate the incidence of neonatal thyroid disorders and to analyze maternal risk factors influencing neonatal thyroid outcomes.

METHODOLOGY

A hospital-based prospective observational study was conducted at St. Philomena's Hospital, Bangalore, over a period of six months from March to August 2024. All pregnant women delivering during the study period and their neonates were included after obtaining informed consent. Data were collected through patient case records, interviews, and laboratory reports. Maternal demographic details, obstetric history, comorbidities, medication history, and thyroid and glycemic status were recorded. Neonatal data included gender, birth weight, thyroid profile, and clinical outcomes. The collected data were subjected to descriptive statistical

analysis. Ethical clearance was obtained from the Institutional Ethics Committee prior to the initiation of the study.

RESULTS

A total of 386 pregnant women and their neonates were included in the study. The majority of mothers were aged 26–30 years (39.6%), and 54.6% were primigravida. Maternal hypothyroidism was observed in 10.4% of cases, while diabetes mellitus was present in 7.02%. Most neonates had normal thyroid profiles; however, elevated TSH levels were noted in 1.3% of neonates, primarily those born to hypothyroid mothers. Hyperbilirubinemia (9.9%) was the most common neonatal morbidity observed.

DISCUSSION

The findings of the study demonstrate a notable association between maternal hypothyroidism and altered neonatal thyroid function. Despite adequate maternal treatment during pregnancy, a small proportion of neonates exhibited abnormal thyroid parameters, highlighting the necessity for routine neonatal screening. The coexistence of maternal diabetes mellitus further emphasizes the compounded risk of endocrine dysfunction in neonates. The results are consistent with previous studies reporting maternal thyroid disorders as a significant risk factor for neonatal thyroid abnormalities.

CONCLUSION

The study highlights the significant impact of maternal hypothyroidism on neonatal thyroid outcomes. Although most mothers received appropriate treatment, a small percentage of neonates developed thyroid dysfunction, underscoring the importance of universal neonatal thyroid screening and long-term follow-up. Early diagnosis and effective management of maternal thyroid disorders during pregnancy are crucial to minimizing neonatal morbidity and ensuring optimal developmental outcomes.

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Conflicts Of Interest

The authors declare no conflicts of interest.

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