

ORIGINAL ARTICLE

Incidence of Congenital Hypothyroidism in Neonates: A study in Abbotabad

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ABSTRACT

Aim: To determine the frequency of congenital hypothyroidism in neonates admitted in Neonatology Department of Ayub Teaching Hospital, Abbotabad

Setting: Department of Neonatology, ATH, Abbotabad

Duration of Study: From 13 June, 2016 to 13 Dec, 2016.

Design of study: Cross sectional

Methodology: 621 neonates included in this study. All admissions were enrolled in study. Informed written consent was taken from parents. TSH level of the patients was sent to laboratory. Name, age, gender and address was recorded on a Performa.

Results: As per frequencies and percentages for congenital hypothyroidism, 5(0.8%) neonates were found having congenital hypothyroidism.

Conclusion: Prevalence of congenital hypothyroidism in neonates is 0.8%. It is strongly associated with hypothyroid mothers and their intake of medicine in pregnancy.

Keywords: Hypothyroid mother, Newborn baby, TSH

INTRODUCTION

Thyroid hormone deficiency at birth is called as congenital hypothyroidism¹. Thyroid hormones are necessary for normal growth of cerebral cortex in early postnatal months. Diagnosis must be made soon after birth and treatment started soon for preventing irreversible brain damage³. Congenital hypothyroidism is the most common preventable cause of mental retardation in children².

Congenital hypothyroidism has worldwide incidence of 1/4000---1/300. The incidence may be higher or lower depending on the race, the ethnicity and screening method. M: F ratio of congenital hypothyroidism is nearly 1: 2⁴.

The objective of the study was to determine the frequency of congenital hypothyroidism in neonates.

METHODOLOGY

This cross-sectional study was conducted in Neonatology Department of Ayub Teaching Hospital, Abbotabad after getting permission from IRB from 13 June, 2016 to 13 Dec, 2016. Sample size was 621 using the WHO software for sample size calculation in health studies with the following assumptions: Confidence Interval = 95% Anticipated frequency of congenital hypothyroidism = 0.8% Absolute Precision = 0.7%. Sampling technique used was non-probability consecutive sampling study. All neonates of both genders with 4 to 7 days of life were included

Exclusion criteria

- Neonates born with prematurity (<37 weeks).
- Neonates whose weight is less than 2kg.
- Neonates with sepsis and severe jaundice.

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Data collection procedure: Permission from the hospital ethical committee was taken before study. Informed written consent was taken from parents. TSH level of the patients was done. All information i.e. name, age, gender and address was recorded on a Performa. Data was analyzed by SPSS version 10.

RESULTS

Table 1: Quantitative variables

Quantitative Variables	Mean	SD
Age	5 days	0.83
TSH Level	12 mU/L	2.08

Table 2: Age distribution

Age (days)	n	%age
4-5	350	56.4
6-7	271	43.6

Table 3: Gender of cases

Gender	n	%age
Male	496	79.9
Female	125	20.1

Table 4: Incidence

Congenital Hypothyroidism	n	%age
Yes	05	0.8
No	616	99.2

Table 5: Stratification WRT age

Age (days)	Congenital Hypothyroidism	n	%age	P Value
4--5	Yes	03	0.48%	0.863
	No	346	55.71%	
6 -- 7	Yes	02	0.32%	
	No	270	43.47%	

Table 6: Stratification WRT Gender

Gender	Congenital Hypothyroidism	n	%age	P Value
Male	Yes	03	0.48%	0.265
	No	493	79.38%	
Female	Yes	02	0.32%	
	No	123	19.84%	

DISCUSSION

Signs of hypothyroidism are rarely present at birth and 95% babies which are affected are asymptomatic.⁵ Frequent signs/symptoms are sluggish activity, more sleep, constipation, jaundice myxedematous facies, large fontanels, macroglossia, distended abdomen with umbilical hernia and hypotonia¹. Thyroid dysgenesis causes permanent congenital hypothyroidism in 85% of newborns. Rest is due to defect in biosynthesis of thyroid hormones⁶. Since 1974, newborn screening has become routine procedure in all developed countries⁷.

According to one study, the frequency of congenital hypothyroidism is 0.8%¹ and this is consistent with our study i.e. 05 (0.8%) neonates. Another study in Iran suggests that the frequency is 2.7%⁷.

Neonatal screening must be done by the 5th day of the child's life and blood spot T4 or TSH or both must be used in neonatal screening and confirmed by raised TSH level in blood¹.

CONCLUSION

Incidence of congenital hypothyroidism in neonates is 0.8%. It has significant association with hypothyroid mothers taking medicine in pregnancy.

Conflict of interest: Nil

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