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MORBIDITY PATTERN IN INFANTS OF DIABETIC MOTHERS [IDM] IN A RURAL TEACHING HOSPITAL IN SOUTHERN INDIA.

Pediatrics

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ABSTRACT

There is an increasing prevalence of diabetes during pregnancy globally, and this is associated with an increased risk of complications in both mother and fetus. The aim of this research is to study the neonatal complications of maternal diabetes. This was a prospective cohort study that was conducted in DR.PSIMS & RF hospital, Gannavaram, between December 2017 to May 2018. All infants born to diabetic mothers during the study period were monitored. Data on sex, gestational age, and birth weight, mode of delivery, complications, investigations, birth injury, and length of hospital stay were recorded. Maternal data were retrieved from records. Data was analyzed using SPSS (Version 16) for M.S.Windows. A total of 33 infants of diabetic mothers (IDMs) were included in the study. 17 infants (51.5%) were females and 16 (48.4%) were males. 18 (54.5%) of the neonates were born by caesarian section and 15 (45.5%) were born by spontaneous vaginal delivery. 16 (48.5%) of the neonates were preterm and 17 (51.5%) were born term. 4 (12.1%) of the babies were large for gestational age (LGA) and 1 (3%) was macrosomic. Congenital anomalies were found in 3 (9.1%), hypoglycemia in 7(21.2%), hyperbilirubinaemia in 23 (69.7%), hypocalcaemia occurred in 4(12.1%), transient tachypnea of the newborn occurred in 1 (3.0%) of the neonates. No significant birth injury or birth asphyxia, mortality were noted. We concluded that, hyperbilirubinemia, prematurity, hypoglycaemia were the commonest complications in IDMs and maternal glycaemic control was found to have a significant effect on the morbidity of an infant born to diabetic mother.

KEYWORDS

Diabetes, Infant of diabetic mother (IDM), neonatal complications of GDM.

INTRODUCTION

Diabetes is a major public health problem in India with prevalence rates reported to be between 4.6% and 14% in urban areas, and 1.7% and 13.2% in rural areas[1]. India has an estimated 62 million people with Type 2 diabetes mellitus (DM); this number is expected to go up to 79.4 million by 2025[1]. The prevalence of gestational diabetes has been reported to range from 3.8% in Kashmir, to 6.2% in Mysore,9.5% in Western India and 17.9% in Tamil Nadu[2].

Infant of diabetic mother is exposed to abnormal glucose metabolism which results in multiple neonatal sequelae, like abnormalities of growth, metabolic abnormalities like hypoglycaemia, hypocalcemia, haematologic abnormalities like polycythemia, bilirubin metabolism. This makes them prone to perinatal mortality and morbidity, congenital anomalies and risk of abortions or stillbirths.

With proper preconceptional and perinatal care, mortality and morbidity of IDM can be reduced.

AIM: This study aims to study the prevalence of GDM and morbidity pattern associated with infants born to diabetic mothers.

MATERIALS AND METHODS:

This is a prospective observational cohort study, conducted in neonatal unit of DR.PSIMS & RF, a rural teaching hospital in Southern India. All babies born to mothers diagnosed to have GDM from December 2017 to May 2018 were included in the study. The study was approved by institutional ethics committee. Data regarding the diabetic status of the mother was obtained from antenatal records. Data regarding the neonatal complications were obtained from the neonatal case records.

The neonatal complications studied in this project are-
a) Birth asphyxia
b) Birth Trauma
c) Prematurity
d) Macrosomia
e) Congenital anomalies
f) Respiratory distress
g) Congenital heart disease
h) Polycythemia
I) Neonatal Hyperbilirubinemia
j) Hypoglycemia
k) Hypocalcemia

Data was analysed using statistical package for social sciences (SPSS Version 16) for M.S. WINDOWS.

RESULTS AND DISCUSSION:

Out of 1011 mothers, 33 (3.3%) mothers were diagnosed to have GDM. These 33 IDMs were analysed for mortality and morbidity.

Table 1: Prevalence of maternal diseases:

Maternal disease	Frequency	Percent
Anaemia	13	1.3%
Hypothyroidism	106	10.5%
DM	33	3.3%
Hypertension	23	2.3%
Seizures	6	0.6%
Nil	830	82.1%
Total	1011	100.0%

Table 2: Baseline characteristics of study population:

		Frequency	Percent
SEX	Females	17	51.5%
	Males	16	48.5%
	Total	33	100.0%

Table 3: Mortality & Morbidity in IDM:

Parameter studied	Prevalence
Caesarian section	18(54.5)%
NVD	15 (45.5%)
Preterm	16 (48.5%)
Term	17(51.5%)
LGA	4(12.1%)
Macrosomia	1(3%)
Congenital anomalies	3(9.1%)
Hypoglycaemia	7(21.2%)
Hyperbilirubinemia	23(69.7%)
Hypocalcemia	4(12.1%)
TTNB	1(3.0%)
Perinatal mortality	Nil
HMD	Nil
Birth injury	Nil
Polycythemia	Nil

In our hospital, IDMs were prone to neonatal jaundice, prematurity, hypoglycaemia. LGA, congenital anomalies and hypocalcemia were lesser in frequency. Contrary to other studies there is no increased

mortality or birth asphyxia in IDMs3. TTNB was observed in only 3%.

CONCLUSION:

IDMs are prone to neonatal jaundice, prematurity, hypoglycaemia in our environment. Less frequent complications include, LGA, Congenital anomalies and hypocalcemia. Early antenatal screening of all pregnant women for diabetes mellitus is required and good glycemic control of diabetic pregnancies should be the ultimate goal in order to minimize neonatal complications.

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