Original Article

A Comparative Study of Birth Asphyxia and Prematurity

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Abstract

Introduction: Thousands of physically and mentally handicapped children are posing increasing burden to the society every year as a sequilae of prematurity and birth asphyxia. The problem is multifactorial and we carried out a study for better understanding and management of these babies. Methodology. This prospective comparative study was carried out in the obstetric and neonatal ward of Dhaka National Medical College Hospital during July to September, 2015. 20 preterm neonates without birth asphyxia and 20 full-term birth asphyxiated babies and 20 full-term normal neonates (control group) were included in our study. Majority of the mothers of both preterm and birth asphyxia babies were primipara 70% & 75% respectively but there was no significant difference between the two groups. Also frequency of maternal illness was more among both preterm and birth asphyxia in comparison to the control group. Prematurity and birth asphyxia was also more frequently associated with multiple pregnancy (10%) & (15%) respectively in comparison to control group 5%. Rupture of membrane was also more in preterm delivery (20%) and birth asphyxia (25%) in comparison to control group (15%). Incidence of caesarean section was also more in both preterm (30%) and birth asphyxia (25%) in comparison to control (20%).

Key-words: *Preterm, Birth-asphyxia, Low-birth weight neonate.*

Introduction

The magnitude of the problem of prematurity and birth asphyxia in Bangladesh can't be over-emphasized. In a published data of Dhaka Shishu Hospital, the tertiary care pediatric hospital at national level, more than 10% of hospital admission and more than 20% of casualty in hospital were due to prematurity and birth asphyxia. Thousands of physically and mentally handicapped children are posing increasing burden to the society every year as a squeale of prematurity and birth asphyxia. The problem is multifactorial and both government and nongovernment bodies should come forward not to leave any stone unturned to ameliorate this. So we carried out this study for better understanding and management of preterm and birth asphyxia babies.

Patients and Methods

This prospective comparative study was conducted in Dhaka National Medical College Hospital. 20 preterm neonates without birth asphyxia and 20 full-term birth asphyxiated baby were included in the study. 20 full-term normal neonates were also studied as control. The purpose and procedure of the study was explained to the parents and their consent was taken. Cardinal features of history and clinical examination were noted in the preformed questionnaire form. The result was statistically analyzed according to standard procedure.

Result

Table-I: Sex

	Male		Female	
	No.	%	No.	%
Preterm	09	45%	11	55%
B. Asphyxia	12	60%	08	40%
Contro	11	55%	09	45%

Table-I shows the distribution of the case and controls according to their sex. Male babies were 09(45%), 12(60%) and 11(55%) respectively in preterm, asphyxia and control and the rest were female.

Table-II: Parity

	Primi		Multi	
	No.	%	No.	%
Preterm	14	70%	06	30%
B. Asphyxia	15	75%	05	25%
Control	11	55%	09	45%

Table-II shows the parity of the mother of the babies studied. 14((70%), 15 (75%) and 11(55%) of the mother were primipara among preterm, birth-asphyxia and normal full-term babies respectively. Majority of the

mother of both preterm and birth asphyxia babies were primipara.

Table-III: Maternal Illness

	Present		Absent	
	No.	%	No.	%
Preterm	03	15%	17	85%
B. Asphyxia	05	25%	15	75%
Control	01	05%	19	95%

Table-III shows the association of maternal illness with prematurity and birth asphyxia. Maternal Illness was associated in 3(15%) preterm and 5(25%) birth asphyxiated babies whereas only one 5% matter suffered from illness in control group. Common maternal illness in our study was pre- eclampsia, gestational diabetes mellitus and antepartum hemorrhage.

Table-IV: Multiple Pregnancies

	Present		Absent	
	No.	%	No.	%
Preterm	02	10%	18	90%
B. Asphyxia	03	15%	17	85%
Control	01	05%	19	95%

Table-IV shows the association of Multiple Pregnancy with preterm and birth asphyxia; multiple pregnancy were present in 2(10%), 3(15%) and 1(5%) case in preterm, asphyxia and control group.

Table-V: Place of delivery

	Home		Hospital	
	No.	%	No.	%
Preterm	04	20%	16	80%
B. Asphyxia	06	30%	14	70%
Control	00	00%	20	100%

Table-V shows the association of the place of delivery with preterm and birth asphyxia. Incidence of home delivery was 4(20%) and 6(30%) in preterm and birth asphyxia respectively while all the control case were included in the study of hospital delivery.

Table-VI: Premature of Rupture membrane

	Prolonged		Normal	
	No.	%	No.	%
Preterm	04	20%	16	80%
B. Asphyxia	05	25%	15	75%
Control	03	15%	17	85%

Table-VI shows the association of prolonged rupture of membrane with preterm and birth asphyxia. It was frequent in both preterm (20%) and birth asphyxia (25%) compared to control (15%).

Table-VII: Mode of delivery

	Normal		Caesarean	
	No.	%	No.	%
Preterm	14	70%	06	30%
B. Asphyxia	15	75%	05	25%
Control	16	80%	04	20%

Table-VII shows the association of mode of delivery with preterm and birth asphyxia. Incidence of caesarean section was more in both preterm (30%) and birth asphyxia (25%) comparison to control (20%).

Discussion

This research work provided the opportunity to prospectively study some features of the two most vulnerable groups of neonates-preterm and parental asphyxia. Information about preterm and birth asphyxia is meagre and to a large extent limited to data from different areas or local hospitals in our country (1). Banu and Rahman in their study on disease pattern in special care baby unit in Dhaka Shishu Hospital have shown 23.77% of preterm admission in total neonatal admission(2). About 8-10% of babies are born preterm in India as compared to 5-7% incidence in western countries (3). Preterm birth are relatively common among poor socio-economic status, chronic and acute maternal illness, APH, cervical incompetence, multiple pregnancy, congenital malformation, premature rapture of membrane, fetal distress, toxemia of pregnancy, very young and unmarried mother and past history of preterm birth(4). In our study we found a higher incidence of preterm delivery in comparison to full-term delivery in primipara, multiple pregnancy, prolonged rupture of membrane, pre-eclampsia, diabetes mellitus, antepartum hemorrhage and caesarean section delivery. Perinatal asphyxia continue to be a major cause of neonatal morality in developing countries and developed countries alike; the incidence is much higher in developing countries(5). In one study 35% of neonatal admission were due to perinatal asphyxia and some of them were with other associated problem like prematurity, infection etc. Banu and Hossain found that the risk factors of the perinatal asphyxia were prolonged labour, preterm delivery, birth trauma, intracranial hemorrhage, early rupture of membrane, PET, placenta previa, meconium aspiration, cord prolapse, fetal

distress, cord around the neck and multiple congenital anomalies(6). In our study we found a higher incidence of perinatal asphyxia in primipara, multiple pregnancy, prolonged rupture of membrane, pre-eclampsia, diabetes mellitus, antepartum hemorrhage and home delivery.

Conclusion

This study evaluated some predisposing factors of prematurity and birth asphyxia some of which are not indispensible so that proper measure can be taken to avoid them. This is small study of a limited number of cases in only one hospital which is not representative of the problem in the country. Further study with larger number of cases in a multicentric trial as well as interventional studies will help us better understanding and management of preterm delivery and parental birth asphyxia.

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