Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/msms8p38

A CLINICAL STUDY ON FETOMATERNAL OUTCOME IN PRETERM LABOUR

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ABSTRACT

Background

Preterm birth is one of the leading causes of fetal morbidity and mortality in the world[1]. Preterm birth which is defined as childbirth occurring before 37 weeks of gestation by WHO is of significant concern globally[4]. According to WHO every year nearly 15 million babies are born prematurely globally. This means that more than 1 in 10 babies are preterm births globally. Almost 1 million children die each year due to complications associated with preterm birth.

Methods

It is a Hospital based Retrospective observational study which was conducted in the Department of Obstetrics and Gynaecology, King George Hospital, Visakhapatnam.The study was conducted between July 2023 to December 2023. 292 preterm deliveries which occurred during study period and fulfilled the inclusion and exclusion criteria were taken

Results

Out of the 2432 total births that occurred, 321 were preterm births. So incidence that was recorded in our institute was found to be 13.1%. Among the 321 preterm births, 292 births fulfilled the inclusion criteria taken in our study.

Conclusion

Preterm birth is challenging. But it is still an unmet goal of health care professionals. In developing country like India it is the leading cause of neonatal morbidity and mortality. Preterm labour requires early and prolonged hospitalization posing great financial and psychological burden on family. Hence reliable and accurate strategies must be established to overcome this problem.

Keywords: Preterm birth, preterm premature rupture of membranes, perinatal outcome, fetal morbidity, maternal complications.

INTRODUCTION

Preterm birth is one of the leading causes of fetal morbidity and mortality in the world[1]. Preterm birth which is defined as childbirth occurring before 37 weeks of gestation by WHO is of significant concern globally[2]. According to WHO every year nearly 15 million babies are born prematurely globally. This means that more than 1 in 10 babies are preterm births globally. Almost 1 million children die each year due to complications associated with preterm birth. Following preterm birth not only the neonatal period but also infancy, childhood and even adulthood are affected. It not only affects the physical health but also affects the cognitive and behavioural dimensions thus posing the most significant challenges for modern public health[3,4]. According to data obtained in India (2010) 3.6 million babies are born premature, of which 303,600 did not survive due to complications[2.]

Among the preterm births which are unrelated to congenital malformations, 28% are due to preterm birth. Children who had premature births have higher rates of cerebral palsy, sensory deficits, learning disabilities and respiratory illnesses compared with children born at term[5-7.] India has the highest number of premature deliveries worldwide, accounting for about 22 per cent of all the premature deaths globally. While the incidence of premature babies varies each year, about 12 to 13 per cent of babies born in India are premature[2].

AIMS AND OBJECTIVES

The objective of this study is to evaluate the causes of preterm labour , the mode of delivery and the neonatal outcome.

MATERIALS AND METHODS

The current Hospital based Retrospective observational study was conducted in the department of Obstetrics and Gynaecology, King George Hospital, Visakhapatnam from July 2023 to December 2023 on 292 preterm deliveries which occurred during study period and fulfilled the inclusion and exclusion criteria were taken.

Inclusion criteria

1. Women with 24-36w 6d period of gestation who had spontaneous onset of labour.
2. Women who had preterm premature rupture of membranes.
3. Women who had medically indicated preterm deliveries.

Exclusion criteria

1. Women who had pregnancy beyond 37weeks.
2. Women who had pregnancy with congenital malformations of fetus.
3. Women with multiple pregnancies.

Methodology

All mothers who had preterm labour and neonates of these mothers were followed up till the discharge. Fetal outcomes were observed as gestational age at delivery, weight of the baby, NICU admissions, neonatal mortality and morbidity and maternal complications .

RESULTS

Out of the 2432 total births that occurred, 321 were preterm births. So incidence that was recorded in our institute was found to be 13.1%. Among the 321 preterm births, 292 births fulfilled the inclusion criteria taken in our study.

Causes	**Cases**	**Percentage**
PPROM	128	43.8%
Iatrogenic	93	31.85%
Spontaneous	71	24.3%

Table 1: Causes of Preterm birth

The maximum number of cases were of preterm premature rupture of membranes which accounted for 43.8% while iatrogenic causes were 93 cases which accounted for 31.85% and 71 cases were spontaneous which accounted for 24.3%.

POG	Cases	Percentage
24-27W6d	13	4.45%
28-31W6d	35	11.98%
32-33W6d	65	22.2%
34-36W6d	179	61.3%
Table 2: Gestational age at delivery		

According to the gestational age maximum number of cases about 179 were between 34-36w6d accounting for 61.3% while 65 cases accounting for 22.2% were between the gestational age of 32-34w6d.35 cases which is 11.9% of cases were seen in the gestational age between 28-31w6d and 13 cases which accounted for 4.45% were seen in the gestational between 24-27w6d.

Mode Of Delivery	Cases	Percentage
Normal Vaginal Delivery	169	57.8%
Instrumental	41	14.1%
Caesarean	82	28.1%
Table 3: Mode of Delivery		

169 cases had normal vaginal delivery which is 57.8% while 41 cases had instrumental delivery which was 14.1%. Caesarean section was done in 82 cases which accounted for 28.1%.

Birth Weight	24-27W6d	28-31W6d	32-33W6d	34-35W6d
1-1.5 Kg	2	28	16	0
1.6-2.0 Kg	0	5	43	55
2-2.5 kg	0	2	6	98
>2.5 Kg	0	0	0	26
Table 4: Distribution of birth weights				

98 cases with gestational age between 34-35w6d had birth weights between 2-2.5kg while 55cases with gestational age between 34-35w6d had birth weights between 1.6-2.0 kg. 43 cases with gestational age between 32-33w6d had birth weight between 1.6-2.0 kg while 16 cases with gestational age between 32-33w6d had birth weight between 1.6-2.0 kg.28 cases with gestational age between 24-27w6d had birth weight between 1-1.5kg while 6 cases with gestational age between 32-34w6d had birth weight of 2-2.5kg.

Gestational Age	Cases	Still Birth	Live Birth	% Still Birth
24-27W6d	13	4	9	30.7%
28-31W6d	35	6	29	17.1%
32-33W6d	65	2	63	3.07%
34-36W6d	179	1	178	0.53%
Table 5: Perinatal outcome				

179 cases in the gestational age between 34-36w6d had live birth which accounted for 178 births while 63 live births were seen in 65 patients in the gestational age between 32-33w6d. 29 live births out of 35 cases in the gestational age between 28-31w were seen while 9 live births out of 13 cases in the gestational age between 24-27w were seen. 6 stillbirths (17.1%) were seen in the gestational age between 28-31w while 4(30.7%) stillbirths occurred in the gestational age between 24-27w. 2 (3.07%)

stillbirths in the gestational age between 32-33w6d and 1 (0.53%) stillbirth was seen in the gestational age between 34-36w6d.

Gestational Age	Live Birth	NICU Admissions	%
24-27W6d	9	9	100%
28-31W6d	29	29	100%
32-33W6d	63	51	80.1%
34-36W6d	178	36	25%
Table 6: NICU Admissions			

51(80.1%) out of 63 live births in the gestational age between 32-34w6d had NICU admission while 36(25%) in the gestational age between 32-33w6d had NICU admission. 29(100%) in the gestational age between 28-31w6d and 9(100%) in the gestational age between 24-27w6d had NICU admission.

Causes	Number	Percentage
Sepsis	36	49.3%
Birth Asphyxia	20	27.3%
RDS	8	10.9%
Neonatal Jaundice	6	8.2%
Neonatal Seizures	3	4.1%
Table 7: Causes of Fetal Mortality		

36 babies (49.3%) died due to sepsis, 20 babies (27.3%) died due to birth asyphyxia.8 babies (10.9%) had respiratory distress syndrome. 6 babies (8.2%) had neonatal jaundice while neonatal seizures were seen in 3 (4.1%) babies.

Complications	Number	Percentage
Puerperal Pyrexia	4	8%
PPH	2	4%
Wound Infection	2	4%
Chorioamnionitis	1	2%
Postpartum Depression	1	2%
Table 8: Maternal Complications		

4 cases (8%) had puerperal pyrexia while 2 cases (4%) had wound infection and 2 cases (4%) had PPH. 1 case (1%) had chorioamnionitis while 1 case (2%) had postpartum depression.

DISCUSSION

Preterm labour is an obstetric emergency.75% of infant mortality is related to preterm.85% of global preterm births occur in Asia and Africa where health systems are inadequate. Maximum number of cases of preterm labour in our study were found to be due to preterm premature rupture of membranes (43.8%) when compared to the study done by McIntire DD et al., and DAS A et al., it was found to be 34.4% and 36.1%. In the above mentioned studies most common cause of preterm labour was due to spontaneous onset of labour. 82% cases delivered at gestational age of 32-36w6d, these results were similar to that of studies by Fyala E et al[8] 79.6% and Usynina AA et al., 86.3%. Still birth rate is 4.4% in our study, compared to study by Usynina AA et al., where it was 3.8%[9]. On evaluation of NICU admissions, results in our study were found to be 49.7% either for observation of prematurity or management of complications. Study by Naik S et al., showed that 46.6% were NICU admissions[10]. Most common cause of neonatal morbidity in our study was respiratory distress syndrome 30%.Similar studies by Asalkar MR et al., and Gupta N et al., showed 25% and 28% respectively[11]. In our study neonatal mortality was 26.6% and the most common cause of mortality was found to be

sepsis which is 42%. Among these 100% mortality was seen in gestational age of 24-27w6d followed by 84% in gestational age of 28-31w6d.

CONCLUSION

Preterm birth is challenging. But it is still an unmet goal of health care professionals. In developing country like India it is the leading cause of neonatal morbidity and mortality. Preterm labour requires early and prolonged hospitalization posing great financial and psychological burden on family. Hence reliable and accurate strategies must be established to overcome this problem.

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