

Perinatal Outcome of Preterm Labour – A Retrospective Study in a Tertiary Care Centre, Mims Mandya

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Received: 25-10-2023 / Revised: 23-11-2023 / Accepted: 26-12-2023

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Conflict of interest: Nil

Abstract:

Background: Preterm labour is one of the most common complications in pregnancy and leading cause of neonatal morbidity and mortality. Preterm birth is defined as birth between 20 to 37 completed weeks of gestation.

Objectives: To study the perinatal outcome in preterm labour.

Study Design: Retrospective Observational study.

Methods: The study conducted from the records of January 2021 to December 2021(1 year) was analysed.

Results: Total of 100 pregnant women with preterm labour were observed during this study. Following observations were made 45% belong to age group of 21 – 25 years, 76% were of gestational age between 32 – 37 weeks, 63% were multi-gravida, 49% had no associated risk factors, 18% had pre-eclampsia, 10% had GDM, 26% had previous history of PPRM, 16% had previous history of preterm labour, 58% underwent PTVD, 40% underwent LSCS and 2% underwent VBAC, 99% were administered with antibiotics, 21% were given steroids and tocolytics, Above 34 WOG 23% neonates were >2.5 kgs, 20% were between 1.5-2.5 kgs, Above 34 WOG 41% neonates & below 34WOG 30% did not require NICU facility.

Conclusion: Preterm labour is an important cause of perinatal morbidity and mortality, administration of IV antibiotics, steroid prophylaxis and tocolytics have improved perinatal outcome, Iatrogenic induced preterm labour in association with maternal risk factors like pre- eclampsia, eclampsia, GDM, APH improves maternal and perinatal outcome.

Keywords: Preterm labour, perinatal outcome, Gestational age.

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Introduction

Preterm labour is one of the most common complications in pregnancy and leading cause of neonatal morbidity and mortality. Preterm birth is defined as birth between 20 to 37 completed weeks of gestation. It can be categorised according to the gestational age as follows:

- Extremely preterm (less than 28 weeks)
- Very preterm (28 to 32 weeks)
- Moderate to late preterm (32 to 37 weeks). [1]

Throughout the years various risk factors have been studied such as demographic factors like age, socio economic status, level of antenatal care, BMI which are found to be in close association with development of preterm labour.

Lifestyle and social elements such as cigarette smoking, depression, domestic violence, anxiety etc. predispose adverse pregnancy outcomes. [2] Most important influencers remain to be obstetrical factors such as parity, polyhydramnios, premature rupture of membranes, threatened abortion,

previous history of preterm labour etc. Intra uterine infections, urinary tract infections can act as standalone cause for preterm labour, if not addressed in time. A better understanding of pathophysiology of preterm labour helps us to improve our ability to identify those women at increased risk. And these pregnancies can be further monitored and intervened appropriately as per the clinical status in time. [3] At risk pregnancies can be conservatively managed by complete bed rest, nutritional interventions, antibiotics, cervical encircage etc.

Failure to prevent the progression of preterm labour warrants additional measures to at least delay the progression to achieve favourable neonatal outcome. These modalities include tocolytics, steroid prophylaxis and MgSO₄ for neuroprotection. These measures act by reducing uterine contractility, curtailing progression of labour and accelerating fetal lung maturity in turn

improving neonatal outcomes. Prematurity is the leading cause of neonatal mortality in the world as well as in India. In India, out of 27 million babies born every year, 3.5 million babies born are premature. [4] With advancement in neonatal care facilities extreme premature infants are also salvageable reducing neonatal mortality to a significantly lower level. Hence early recognition and arresting the progression of preterm labour, aiding advancement of fetal lung maturity can improve pregnancy outcome. The study is undertaken to evaluate the risk factors associated with preterm labour and immediate neonatal outcome. [5]

Methodology

Study Design: Retrospective Observational study

Study Period: The study conducted from the records of January 2021 to December 2021(1 year) was analysed.

Sample Size: All women who have undergone preterm labour in MIMS Mandya (100)

Sampling Method: Data was collected from all available records.

Inclusion Criteria: All women who have undergone preterm labour at MIMS Mandya during the study period.

Exclusion Criteria: IUD.

Method of Data Collection (study tools):

A record based study was conducted over a period of 1 year (January 2021 to December 2021) for patients who have undergone preterm labour at MIMS Mandya.

The data was collected from Medical record section, OT register and Parturition register and were analysed.

Results

Total of 100 pregnant women with preterm labour were observed during this study. Following observations were made

- 45% belong to age group of 21 – 25 years
- 76% were of gestational age between 32 – 37 weeks
- 63% were multi-gravida
- 49% had no associated risk factors, 18% had HDP,10% had GDM
- 26% had previous history of PPROM, 16% had previous history of preterm labour.
- 58% underwent PTVD, 40% underwent LSCS and 2% underwent VBAC
- 99% were administered with antibiotics, 21% were given steroids and tocolytics.
- Above 34 WOG 26% neonates were >2.5 kg, 25% were between 1.5-2.5 kg.
- Above 34 WOG 41% neonates & below 34WOG 30% did not require NICU facility.

Table 1:

Column1	Column2
below 20 yrs	12
21-25 yrs	45
26-30 yrs	31
31-35 yrs	11
above 35 yrs	1

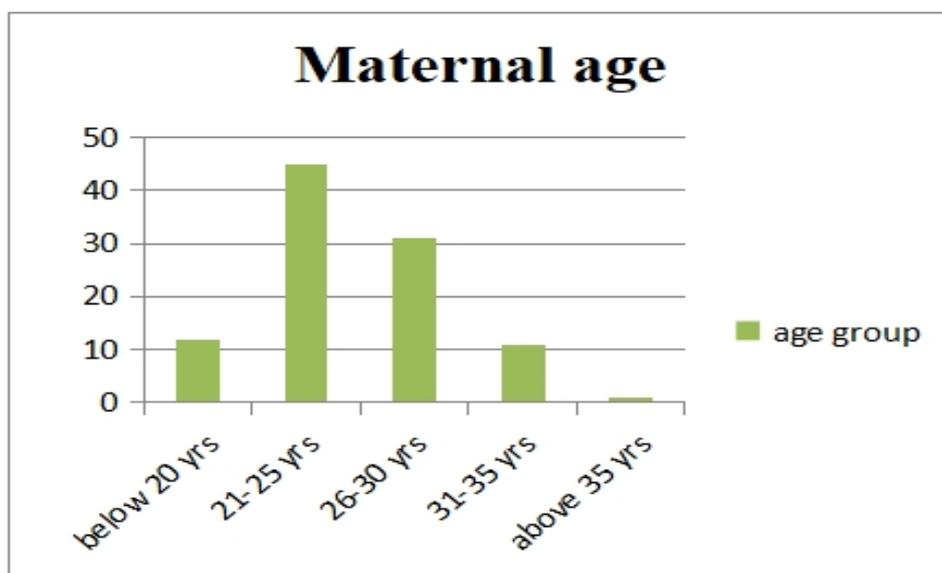


Figure 1: Distribution of Study Group as Per Maternal Age

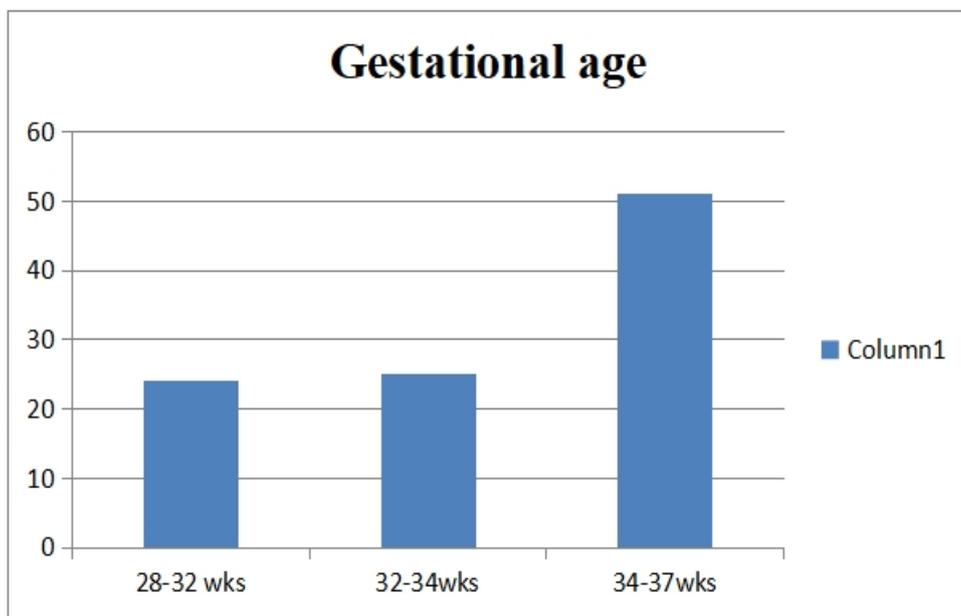


Figure 2: Distribution of the Study Group as Per Gestational Age.

Table 2:

Weeks of Gest	Column1
28-32 wks	24
32-34wks	25
34-37wks	51

Table 3:

Column1	Column2
PRIMI	37
MULTI	63

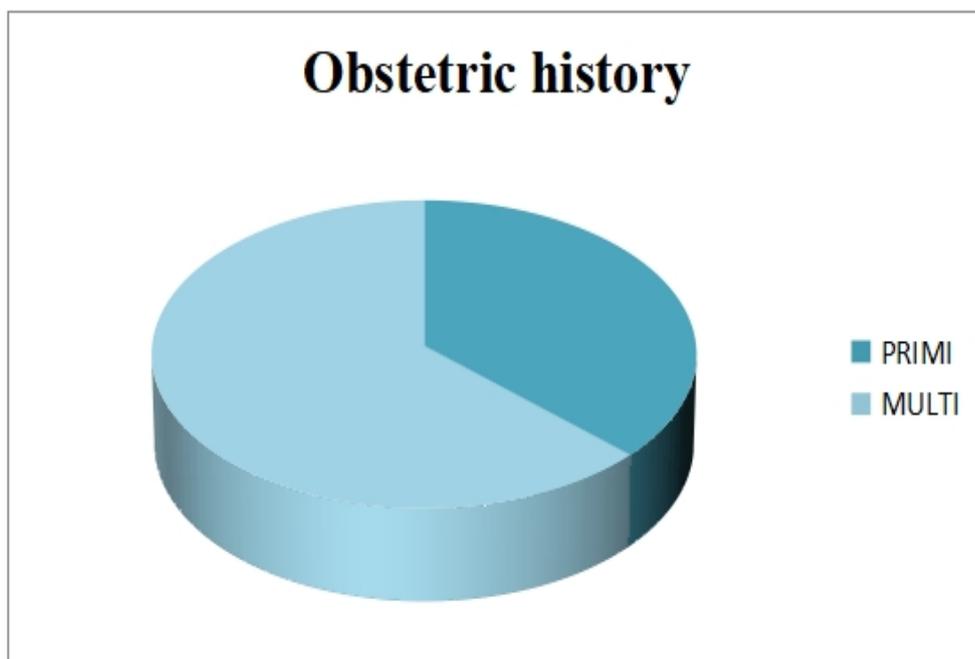


Figure 3: Distribution of the Study Group as Per Obstetric History.

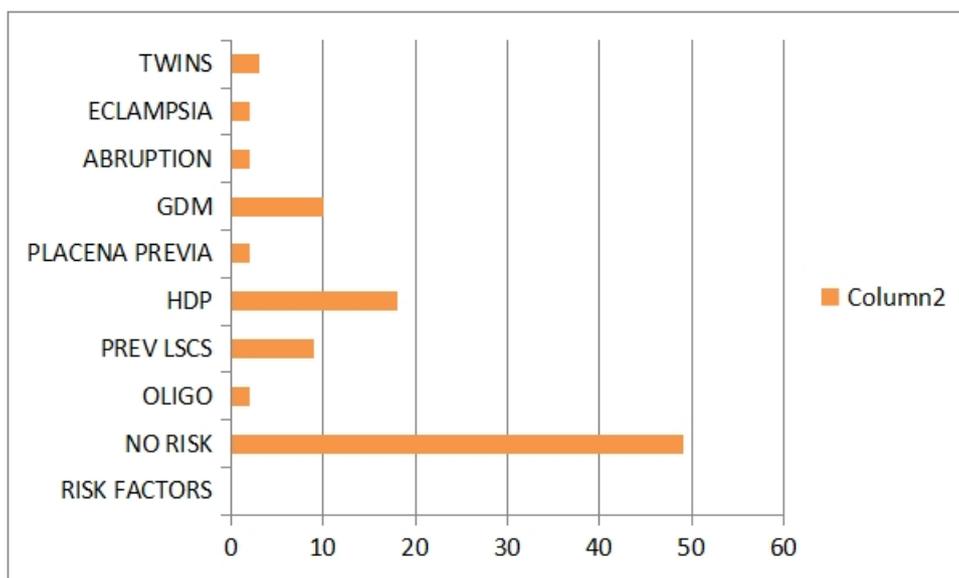


Figure 4: Distribution of the Study Group as Per Associated High Risk

Table 4:

Column1	Column2
Risk Factors	
No Risk	49
Oligo	2
PREV LSCS	9
HDP	18
PLACENA PREVIA	2
GDM	10
ABRUPTION	2
ECLAMPSIA	2
TWINS	3

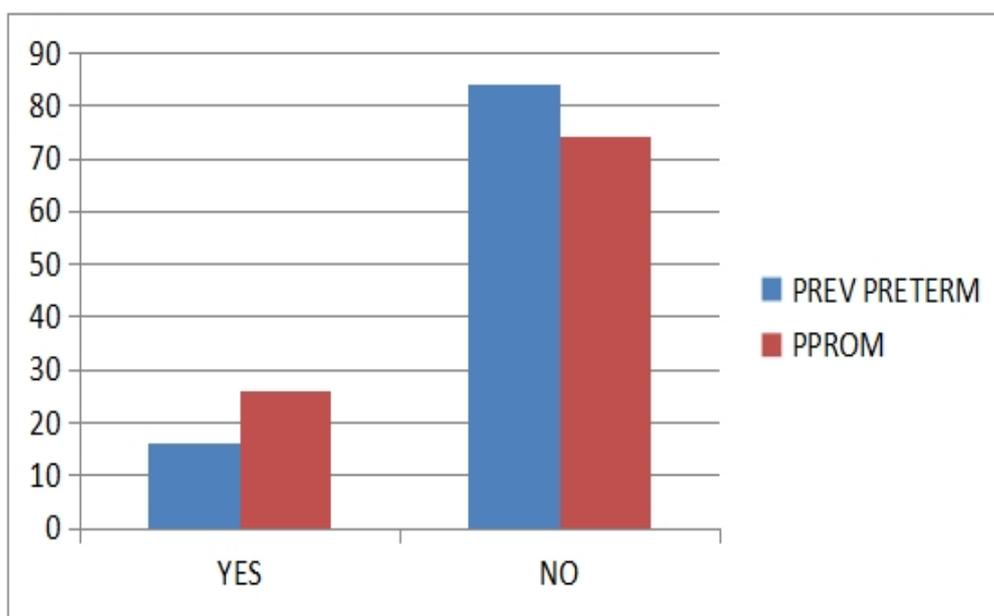


Figure 5: Distribution of the Study as Per Previous Obstetric History

Table 5:

Column1	Column2	Column3
	YES	NO
PREV PRETERM	16	84
PPROM	26	74

Table 6:

Column1	Column2
mode of delivery	
PTVD	58
VBAC	2
LSCS	40

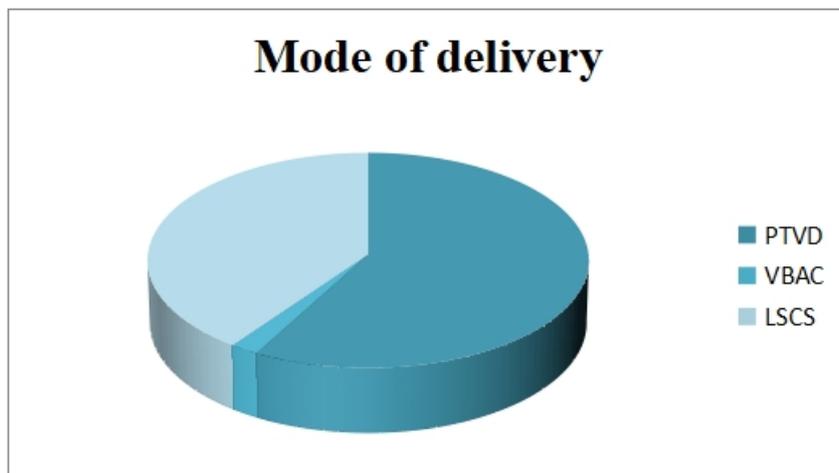


Figure 6: Distribution of the Study Group as Per Mode of Delivery

Table 7:

Column1	yes	no
antibiotics	99	1
steroids	21	79
tocolytics	21	79
MgSO4	2	98
progesterone	3	97

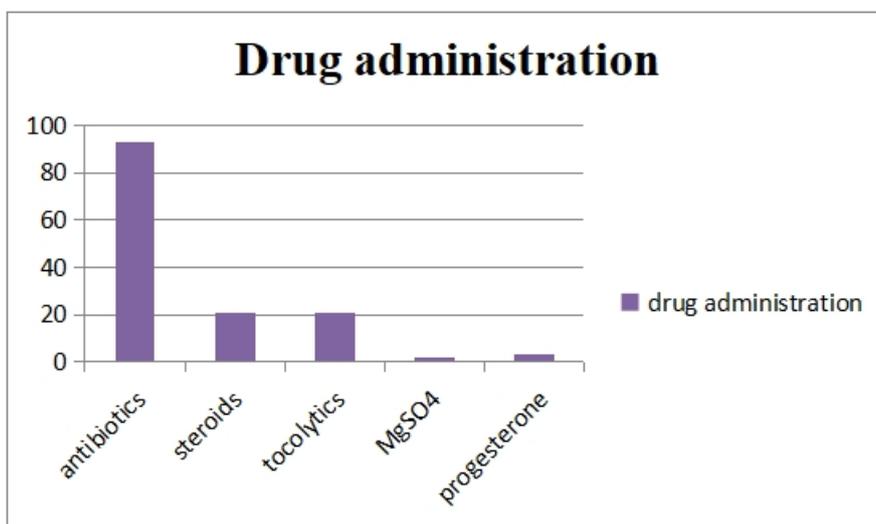


Figure 7: Distribution of study group as per drug administration

Table 8:

Column1	above 34wks	below 34wks
2.5kg	26	16
1.5 -2.5kg	25	23
1-1.5kg	0	8
1kg	0	2

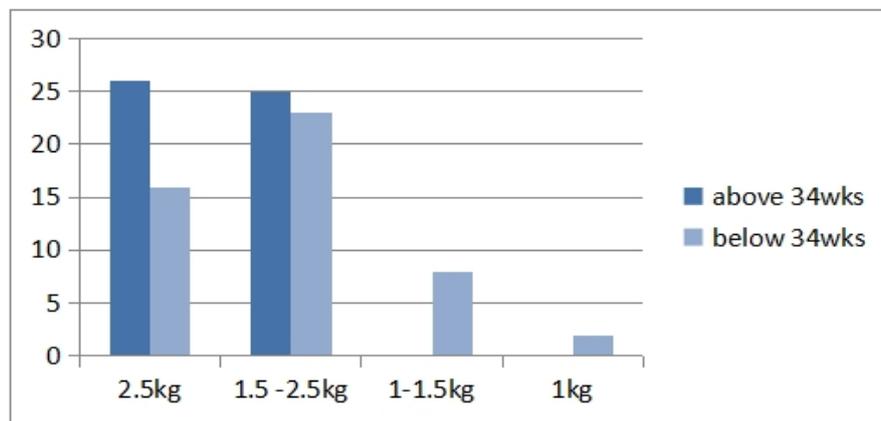


Figure 8: Association between gestational age at birth and neonatal weight

Table 9:

Column1	above 34 wks	below 34 wks
mother side	41	30
SNCU	4	8
NICU	3	7
PNM	2	5

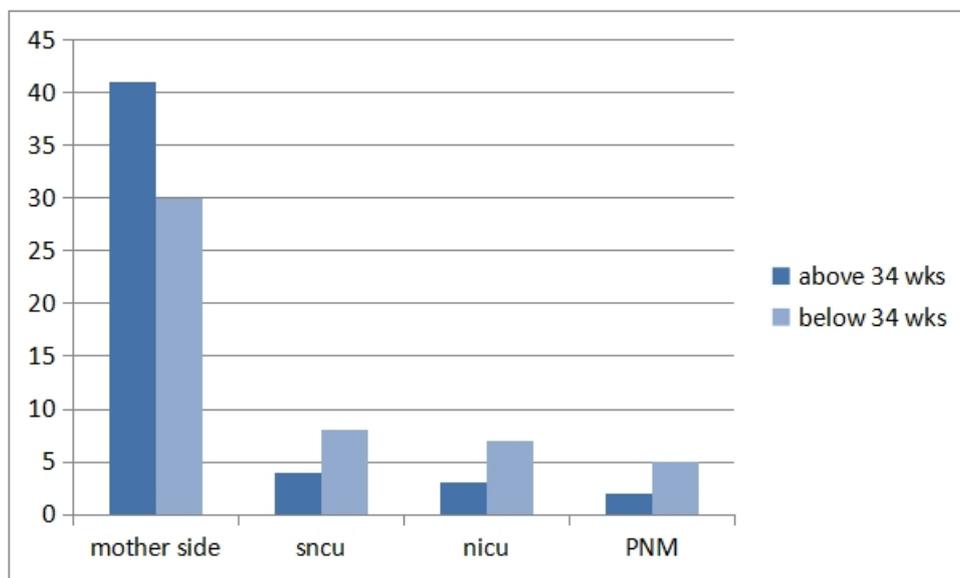


Figure 9: Association between gestational age at delivery and immediate neonatal outcome

Discussion

Our study is a retrospective observational study of clinical profile of the patients coming to our hospital with preterm labour from January 2021 to December 2021. Maternal age is one of the important factors which determine the outcome pregnancy. A study conducted by Goffinet found that women younger than 17 years and older than 35 years are at increased risk of preterm labour. While in our study maximum number of patients were of the age group of 21 to 25 years i.e. 45% (figure 1), 1% women were above 35yrs age group and 12% were below age group up to 20 years. Hence our study contradicts the findings of Goffinet. Previous history of Preterm delivery is strongly associated with preterm labour. Etiopathogenesis in primigravidae can be explained

on the basis of genetic polymorphism, congenital cervical incompetence due to connective tissue disorders like Marfan’s syndrome, Ehler - Danlos syndrome.[12] Out of the total patients observed, 63% were multigravidae, whereas primigravidae were 37% (figure 3)

According to Martin and co-workers (2006)[7], there were 5,08,356 preterm births in United States out of which 86,116 i.e. 17% were from Multifetal pregnancies. Authors studied association various high risk factors and found that 50% of the patients were associated with some high risk factor. 9% patients had undergone previous caesarean section. 18% patients had HDP. 3% were twin gestations. 16% of the patients had previous history of preterm labour in our study whereas 49% had no such history (Figure 4). Bloom and associates in 2001

conducted a study of 16000 women with preterm labour where 62% of the patients had previous history of preterm labour.

26% (figure-5) of the total patients observed presented with preterm premature rupture of membranes (PPROM). In majority of the cases of PPRM cause remains unknown. Chorioamnionitis, urinary tract infection, genital tract infection, short cervix, and prior history can be associated with PPRM. Leitich et al, conducted study in 2003 showed association between bacterial vaginosis and preterm birth/premature rupture of membranes. [13]

From all of these studies, there seems no doubt that adverse vaginal flora is associated in some way with spontaneous preterm birth. Goldenberg and associates showed that 30-35% follow preterm premature rupture of membranes. [14]

Conclusion

Preterm labour is an important cause of perinatal morbidity and mortality, administration of IV antibiotics, steroid prophylaxis and tocolytics and MgSO₄ for neuroprotection have improved perinatal outcome significantly, iatrogenic preterm labour is conducted in association of maternal risk factors like pre-eclampsia, eclampsia, GDM, APH for improving maternal and perinatal outcome.

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