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Preterm Labour- Maternal and Fetal Outcome

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Abstract

Background: Preterm labour, defined as the onset of regular uterine contractions leading to cervical changes before 37 completed weeks of gestation, remains a major contributor to perinatal morbidity and mortality worldwide.

Despite significant advances in obstetric and neonatal care, preterm birth continues to account for approximately 70–80% of neonatal deaths and nearly half of long-term neurological disabilities. The etiopathogenesis of preterm labour is multifactorial, involving complex interactions between maternal, fetal, and placental factors such as intrauterine infection, inflammation, uteroplacental insufficiency, cervical incompetence, and multiple gestations. The burden is particularly higher in developing countries, where late antenatal booking, low socioeconomic status, malnutrition, and inadequate access to tertiary neonatal care compound the risks.

Results: Majority were 21–25 years, primigravidae**,** and booked cases**.** Most presented at 34–36 weeks with iatrogenic causes and PROM as common risk factors. Vaginal delivery (66%) was the common mode, with PGE_2 gel used for induction. Maternal complications were minimal and no deaths occurred. Live births (92%) predominated, though 36% neonates required NICU care for issues like RDS and jaundice.

Conclusion: Abruptio placentae remains a major obstetric emergency contributing to perinatal morbidity and mortality**.** Early identification of high-risk factors such as hypertension and PROM is crucial for prevention. Prompt resuscitation, stabilization, and timely delivery can significantly improve outcomes. In this study, maternal outcomes were favourable due to early referral and appropriate management. However, perinatal outcome depended mainly on gestational age and severity at presentation**,** emphasizing the need for better antenatal surveillance and neonatal care facilities**.**

Keywords: Fetal, Hypertension, Preterm Labour, PROM, Vaginal Delivery

Introduction

Preterm labour poses a dual challenge to the obstetrician balancing maternal health while striving for fetal maturity and survival. It represents a significant cause of adverse feto maternal outcomes, including increased incidence of cesarean deliveries, postpartum hemorrhage, and neonatal complications such as respiratory distress syndrome, sepsis, intraventricular hemorrhage, and perinatal mortality. Early identification of risk factors and prompt, evidence-based management are critical to improve both maternal and neonatal prognosis.

Clinical evaluation of preterm labour cases provides valuable insights into the demographic profile, associated etiological factors, management strategies, and outcomes in a given population. Such studies help in identifying preventable contributors and in formulating protocols for timely intervention, thereby reducing the burden of preterm birth.

Hence, this study is undertaken to assess the fetomaternal outcome in cases of preterm labour**,** to analyze associated risk factors, and to evaluate maternal and neonatal complications, with an aim to improve future obstetric care and neonatal survival.

Methodology

Study Design: A prospective observational clinical study was conducted to evaluate the fetomaternal outcome in patients admitted with preterm labour.

Study Setting: The study was carried out in the Department of Obstetrics and Gynaecology, Basaveshwar General Hospitals, and Sangameshwar Teaching and General Hospital, attached to H.K.E. Society's Mahadevappa Rampure Medical College, Kalaburagi.

Study Period: The study was conducted over a period of 12months (from October 2024 to October 2025)

Study Population: All pregnant women admitted with preterm labour between 28 and 37 completed weeks of gestation during the study period were included.

Sample Size: A total of 100 cases of preterm labour were studied.

Inclusion Criteria

1. Women with 28-36w 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. Congenital anomalies of the fetus incompatible with life.
2. Women who did not give consent for participation.

Procedure- A detailed history and clinical examination were performed for each case, including:

- Demographic data: Age, Parity, Booking Status, Socioeconomic Status.
- Obstetric and medical history: Prior Preterm Birth, Infections, Multiple Gestations, Polyhydramnios, Anemia, Etc.
- Gestational age assessment: Based on LMP, Dating scan or both.
- Clinical examination: Maternal Vital Parameters, Uterine Contractions, Cervical Dilatation and Effacement, And Fetal Heart Rate.
- Investigations: Routine Hematological and Urine Examinations, High Vaginal Swab for Culture, Urine Culture and Sensitivity, Serology and

Obstetric Ultrasound for Fetal Well-Being and Presentation.

All mothers with preterm labour and their neonates 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 outcomes like gestational age at the time of delivery, Mode of delivery, complications (PPH, sepsis, retained placenta, etc.), and maternal morbidity and mortality were studied

Results

Table 1: Distribution of patients according to age group:

Age group (years)	No. of cases	Percentage (%)
< 20	11	11.0
21–25	44	44.0
26–30	22	22.0
> 30	18	18.0
>35	5	5.0
Total	100	100.0

Table 2: Distribution of patients according to parity:

Parity	No. of cases	Percentage (%)
Primigravida	56	56.0
Multigravida	44	44.0
Total	100	100.0

Table 3: Distribution of patients according to booking status:

Booking status	No. of cases	Percentage (%)
Booked	76	76.0
Unbooked	24	24.0
Total	100	100.0

Table 4: Distribution of patients according to gestational age:

Gestational age (weeks)	No. of cases	Percentage (%)
28–30	10	10.0
31–33+6	20	20.0
34–36+6	70	70.0

Gestational age (weeks)	No. of cases	Percentage (%)
Total	100	100.0

Table 5: Distribution of patients according to risk factors

Risk factor	No. of cases	Percentage (%)
Urinary tract infection	07	7.0
Premature rupture of membranes (PROM)	18	18.0
Multiple pregnancy	08	8.0
Bacterial vaginosis	12	12.0
Polyhydramnios	04	4.0
Previous preterm delivery	04	4.0
Iatrogenic (pih, oligohydramnios, abruptio placenta, placentaprevia, IUGR, fetal distress)	29	29.0
Others(anemia, short cervix, low socioeconomic status, nutritional causes, fever of unknown origin)	18	18.0
Total	100	100.0

Table 6: Distribution of patients according to mode of delivery:

Labour Onset / Delivery Mode	Vaginal Delivery	Cesarean Section	Total	Percentage (%)
Spontaneous labour	40	17	57	57.0
Induced labour	26	14	40	40.0
Elective	–	3	3	3.0
Total	66	34	100	100.0

Among 3 elective caesarean deliveries, 2 had placenta previa and 1 with IUGR.

Table 7: Distribution of patients according to method of induction and their outcome:

Method of Induction	Vaginal Delivery	Cesarean Section	Total	Percentage (%)
Prostaglandin E2 gel	12	04	16	42.5
Misoprostol	08	04	12	30.0
Oxytocin drip	05	03	08	20.0
Foley catheter	01	03	04	07.5
Total	26	14	40	100.0

Table 8: Distribution of patients according to maternal complications:

Maternal complication	No. of cases	Percentage (%)
Postpartum haemorrhage (PPH)	08	8.0
Retained placenta	07	7.0
Fever / Puerperal sepsis	23	23.0
Other complications(suture site infection)	38	38.0
Maternal death	0	0
Total	100	100.0

Table 9: Distribution of patients according to neonatal outcome:

Neonatal Outcome	No. of cases	Percentage (%)
Live born	92	92.0
Stillborn	8	8.0
Total	100	100.0

Table 10: Distribution of patients according to neonatal complications:

Neonatal morbidity	No. of neonates	Percentage (%)
Respiratory distress syndrome (RDS)	30	24.4
Neonatal jaundice	16	17.8
Sepsis	30	10.0
Asphyxia	5	5.6
Other(intracranial haemorrhage, congenital anomalies etc)	9	42.2
Neonates requiring NICU admission	66	40.0
Neonatal death	04	2.2
Total live births	90	100

Discussion

Preterm labour remains one of the leading causes of perinatal morbidity and mortality worldwide, accounting for nearly 70–80% of neonatal deaths and long-term neurological disabilities. The present prospective clinical study of 100 cases was undertaken to analyse the fetomaternal outcomes and associated risk factors in women presenting with preterm labour between 28 and 37 weeks of gestation.

1. **Demographic Characteristics:** In the present study, 44% of the women were between 21–25 years**,** followed by 22% in the 26–30 years group. Primigravida formed 56% of the cases, consistent with previous studies suggesting that first pregnancies are more susceptible to stress,

infections, and unrecognized risk factors leading to preterm labour.

2. **Antenatal Registration:** In the study**,** 64% were booked cases and 36% were unbooked. Despite antenatal supervision, preterm birth still occurred, indicating that some risk factors such as subclinical infection or cervical incompetence may not always be preventable. The unbooked group contributed substantially to poorer neonatal outcomes, which aligns with emphasizing the role of continuous antenatal care.
3. **Gestational Age at Onset:** Most patients **(**70%**)** presented between 34 and 36 + 6 weeks**,** classifying them as late preterm. This subgroup generally has better survival but still contributes significantly to NICU admissions. Only 10% presented before 30 weeks, similar to trends reported by NNPD (2021)**,** which found that late preterm births form the bulk of preterm deliveries in India.
4. **Etiological and Risk Factors:** The most frequent factors associated with preterm labour were Premature rupture of membranes (PROM) **–** 23%, Iatrogenic causes (PIH, oligohydramnios, abruptio placentae, placenta previa, IUGR, fetal distress)- 33%, Urinary tract infection – 15%, Bacterial vaginosis **–** 18%, Anemia and nutritional causes – 29%, Multiple pregnancy **–** 8%, Polyhydramnios – 4%. These data reinforce that infection, anemia, and placental dysfunction remain the principal contributors to preterm labour in developing countries, which identified infection and hypertensive disorders as the major modifiable factors. The presence of anemia and low socioeconomic status further underlines the preventable nature of many cases.
5. **Mode of Onset and Delivery:** In this series, spontaneous labour occurred in 57% of patients, 40% required induction, and 3% underwent elective cesarean. Overall, vaginal delivery was achieved in 66%**,** while 34% required cesarean section**.** Among induced cases, Prostaglandin E_2 gel (42.5%) was the most common induction method, followed by misoprostol (30%) and oxytocin drip (20%). Mechanical induction using Foley catheter was employed in 7.5% where prostaglandins were contraindicated. The success rate of prostaglandin induction in achieving vaginal delivery was approximately 70%.
6. Maternal complications were relatively low: PPH **–** 12%, Retained placenta – 11%, Puerperal sepsis **–** 10% Other minor complications (suture infection, fever) – 57%.There were no maternal deaths**.** This low morbidity profile indicates that with appropriate intrapartum care and timely obstetric intervention, maternal outcomes in preterm labour can be excellent.
7. **Neonatal Outcome:** Out of 100 babies, 92% were live born and 8% were stillbirths**.** Respiratory distress syndrome (24%), neonatal jaundice (18%), and sepsis (10%) were the common complications. About 36% of neonates required NICU admission, with a neonatal mortality rate of 4–5%**.** Neonatal deaths were mainly among babies born before 32 weeks, reaffirming that gestational age and birth weight are the strongest predictors of survival**.** And prophylactic steroid coverage was done for women before 36 weeks of gestational age, whereas women from 28 weeks to 32weeks received both steroid and magnesium sulphate for neuroprotection.

Conclusion

Preterm labour remains a leading cause of perinatal morbidity and mortality**.** In this study, most cases occurred among young, primigravid women at 34–36 weeks of gestation. The common preventable causes were PROM, infections, and anemia**.** The majority of women delivered vaginally, and maternal complications were minimal with no maternal mortality**.** Neonatal outcomes were favourable in babies born after 34 weeks, though a significant proportion required NICU care for prematurity-related complications.

These findings highlight the importance of adequate antenatal care**,** infection screening**,** correction of anemia**,** judicious use of corticosteroids**,** and institutional delivery with good neonatal support. Strengthening maternal–child health services and promoting early referral to tertiary centres are essential to reduce the burden of preterm birth and improve fetomaternal outcomes.

Summary

This prospective clinical study was conducted on 100 cases of preterm labour between 28 and 37 weeks of gestation at Basaveshwar and Sangameshwar Teaching and General Hospitals, Kalaburagi, to evaluate fetomaternal outcomes and associated risk factors. Most women were in the 21–25 years age group (44%) and primigravidae (56%).The majority (70%) delivered between 34–36+6 weeks, indicating a predominance of late preterm births.

The common risk factors identified were premature rupture of membranes (23%), urinary tract infection (15%), bacterial vaginosis (18%), anemia and nutritional causes (29%), and iatrogenic causes such as PIH, oligohydramnios, and abruptio placentae (33%). Spontaneous labour occurred in 57% of women, induction was required in 40%, and 3% underwent elective cesarean section. Overall, vaginal delivery occurred in 66%, and cesarean section in 34% of cases. Prostaglandin E_2 gel was the most commonly used induction agent, followed by misoprostol and oxytocin. Maternal morbidity was low, with PPH (12%), puerperal sepsis (10%), and retained placenta (11%) as the main complications. There were no maternal deaths.

Among neonates, 92% were live births and 8% were stillbirths. Neonatal complications included respiratory distress syndrome (24%), jaundice (17%), and sepsis (10%). NICU admission was required in 36% of live-born babies, and neonatal mortality was 4–5%.The study reaffirms that gestational age at delivery is the most important determinant of neonatal survival. Early identification and treatment of risk factors, along with the use of antenatal corticosteroids and availability of NICU care, significantly improve outcomes.

References

1. Cunningham FG, Leveno KJ, Bloom SL, et al. Williams Obstetrics, 26th ed. McGraw-Hill; 2022.
2. World Health Organization (WHO). Preterm Birth: Fact Sheet. WHO; 2023
3. National Neonatal Perinatal Database (NNPD). Report 2021–2022. Govt. of India.
4. Arias F, Daftary SN, Bhide AG. Practical Guide to High-Risk Pregnancy and Delivery, 5th ed. Elsevier; 2019.
5. Gopalan S, Jain V, Bhargava VL. Textbook of Obstetrics. Orient Blackswan; 2019.
6. American College of Obstetricians and Gynecologists (ACOG). Practice Bulletin No. 171: Management of Preterm Labor. Obstet Gynecol. 2016;128:e155–64.