



A CLINICAL STUDY ON FETAL OUTCOME OF PRETERM PREMATURE RUPTURE OF MEMBRANES (28 -37 WEEKS) AT A TERTIARY CARE HOSPITAL

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Preterm premature rupture of membranes is a commonly encountered obstetric complication. It is an important cause of fetal morbidity . PPROM occurs in 3-4% of all pregnancies and accounts for approximately 30-40% of preterm births. **Aims and Objectives:** To analyze the fetal outcome in patients with preterm premature rupture of membranes. **Materials and Methods:** An observational study was conducted collecting data of 150 consecutive consenting subjects admitted in tertiary health care center New civil Hospital , Surat , South Gujarat over period of May 2023 to April 2024 .The total of 150 patients with PPROM were included in the study after applying inclusion and exclusion criteria. **Results:** Majority of cases are from late PPROM 84%,37.33% of late neonate has birthweight of >2.5kg , while 4.66% of early neonate has birthweight of >2.5 kg, while 40.66% of late neonate have birthweight of 1.5-2.5 kg , 8.67% early neonate have birthweight of 1.5-2.5 kg , 6% neonate has birthweight of 1-1.5kg , while 2.66% early neonate had weight of <1.5 kg ,26% of neonate in our study require NICU admission , prematurity is most common cause in 12.66% , 2nd most common cause being low birth weight 8% , in perinatal morbidity about 3.33% of neonates suffer from RDS , 2% neonates suffer from septicemia, jaundice , TTN each , 0.66% had fetal death . **Conclusions:** Late preterm period, which is generally associated with more favorable neonatal outcomes compared to early PPROM. However, both groups are at risk for complications, with **low birth weight, prematurity, and respiratory distress syndrome** being the most significant contributors to neonatal morbidity. A notable proportion of neonates required NICU admission, emphasizing the need for close monitoring and timely perinatal management.

KEYWORDS

Preterm premature rupture of membrane , Low birth weight

INTRODUCTION

Preterm premature rupture of membranes (PPROM) is a significant cause of preterm birth and is associated with maternal, fetal, and neonatal morbidity and mortality. It involves examining its prevalence, risk factors, and associated outcomes in various populations.

PPROM occurs in 3-4% of all pregnancies and accounts for approximately 30-40% of preterm births. In developing countries, higher rates are observed, potentially due to lower access to healthcare, infections, and malnutrition.

PPROM typically occurs before 37 weeks of gestation, with an increased incidence at earlier gestational ages. The earlier the rupture, the more significant the risks of complications like preterm birth. The condition is most common between 24-34 weeks of gestation. PPROM is more common in younger mothers (teenage pregnancies) and women over 35 years old. Some studies have shown higher rates of PPROM among Black and Hispanic women compared to Caucasian women. Socioeconomic factors, healthcare access, and prevalence of infections may contribute to these disparities.

PPROM associated with significant maternal morbidity and perinatal morbidity. These includes Chorioamnionitis, Endometritis, Sepsis, Placental Abruption, Postpartum hemorrhage (PPH), Prolonged Hospitalization, Preterm Labor and Delivery ,Increased Caesarean Delivery ,Psychological Stress, Lactational Failure. Various perinatal Morbidity like prematurity , respiratory distress syndrome , intra ventricular hemorrhage ,Sepsis, bronchopulmonary hypoplasia, necrotizing enterocolitis depending on gestational age.

PPROM evaluation and management are important for improving maternal neonatal outcomes. A careful consideration of various factors and individualization of cases is necessary for appropriate management. Proper diagnostic facilities, proper monitoring facilities and a standard protocol in the management can improve the maternal and fetal outcome. So the present study is conceptualized to analyze the maternal and fetal outcome in cases with preterm premature rupture of membranes.

MATERIAL AND METHODOLOGY

Study Setting: Department of Obstetrics and Gynecology, GMCS,

GUJARAT

Duration of Study: MAY 2023 to APRIL 2024

1. INCLUSION CRITERIA:

- All Consenting women between 28-37 weeks pregnancy with Preterm PROM without labour pain.

2. EXCLUSION CRITERIA:

- Pregnant women <28 week of pregnancy > 37 week of pregnancy.
- Pre term labour with intact membrane.
- IUFD
- Non consenting women.

3. MEASURING TOOLS: Age, parity, socioeconomic status, education, antenatal check- ups, latency period, past history, risk factors,

Outcome Variables

- Period of gestation
- Mode of delivery

-Vaginal

*Spontaneous

*Instrumental

-Caesarean section

- Maternal complications

Chorioamnionitis, Abruption, Wound infection, Puerperal pyrexia

4. BRIEF METHODOLOGY:

All women with PPROM delivering in tertiary health care center of South Gujarat were enrolled in this study . All mothers and babies were followed till discharged from hospital .

All data related to maternal and fetal outcome were collected from case records of mother in structured proforma.

This data were analyzed by appropriate statistical test .

5. ETHICAL APPROVAL:

Ethical approval was granted by Human Resource Research Committee, confidentiality was maintained.

RESULTS:

Gestational age at delivery

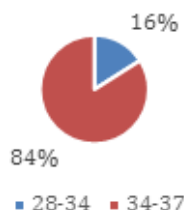


Figure 1: Gestational age at Delivery

In my study most of cases were presented as late Pre -Prom between 34 -37 week pf pregnancy (84%). 16 % cases were presented as early Pre-PROM .

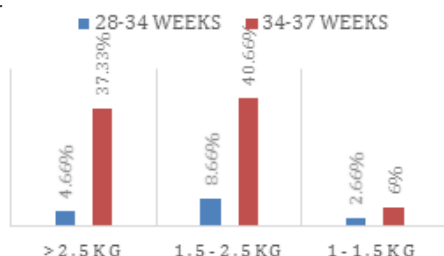


Figure 2: Birth weight and Pre-Prom :

- In our study 37.33% late neonate has birthweight of >2.5kg, while 4.66% early neonate had also birthweight of >2.5kg, due to multiparity, obesity, diabetic mother.
- In our study 40.66% late neonate has birthweight of 1.5-2.5kg, while 8.67% early neonate had also birthweight of 1.5-2.5kg.
- In our study 6% neonate has birthweight of 1-1.5kg, while 2.66% early neonate had also birthweight of 1-1.5kg.

NICU Admission

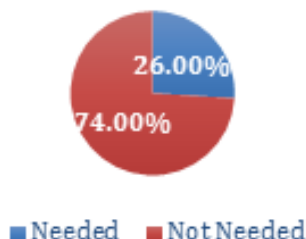


Figure 3: NICU admission :

In our study 26% neonate needs NICU admission, while 74% neonates do not need it.

Table 1: Indication of NICU admission :

Parameters	(N=150)	Percentage
LOW BIRTH WEIGHT	12	8%
PREMATURITY	19	12.66%
JAUNDICE	3	2%
RESPIRATORY DISTRESS SYNDROME	5	3.33%

In our study out of 150 subjects, most common indication for NICU admission is due to prematurity 12.66%, while low birth weight is 2nd most common cause 8%, respiratory distress 3.33%, jaundice 2%.

Table 2: Perinatal morbidity Parameter :

Parameters	Frequency (N=150)	Percentage
RDS	5	3.33%
Septicemia	3	2%
Jaundice	3	2%
Transient tachypnea of newborn	3	2%
Fetal death	1	0.66%

- In our 150 subjects, 3.33% neonates suffer from respiratory distress syndrome, 2% due to septicemia, jaundice, transient tachypnoea of newborn, 0.66% foetal death occur due to extreme low birth weight due to prematurity and respiratory distress syndrome.

DISCUSSION:

The study is a observational study conducted among 150 patients with PPROM admitted to Department of Obstetrics and Gynaecology, NCHS. Figure 1 suggests relationship between Pre Prom and gestational age. In our study, the majority of Preterm Prelabour Rupture of Membranes (Pre-PROM) cases occurred in the **late preterm period (34–37 weeks)**, accounting for 84% of total cases. This aligns with existing literature, where late Pre-PROM is more common and often associated with better neonatal outcomes compared to early Pre-PROM.

Birth weight analysis revealed that a significant proportion of late preterm neonates (37.33%) had a birth weight >2.5 kg, while 4.66% of early preterm neonates also had birth weights >2.5 kg, likely influenced by maternal factors such as **multiparity, obesity, and diabetes**. study 40.66% late neonate has birthweight of 1.5-2.5kg, while 8.67% early neonate had also birthweight of 1.5-2.5kg. 6% neonate has birthweight of 1-1.5kg, while 2.66% early neonate had also birthweight of 1-1.5kg. However, lower birth weights were still prevalent, particularly among early Pre-PROM cases, reflecting the impact of prematurity.

NICU admissions were required in 26% of neonates, with **prematurity (12.66%)** and **low birth weight (8%)** being the most common indications, respiratory distress 3.33%, jaundice 2%. This emphasizes the burden of prematurity on neonatal health services.

Respiratory Distress Syndrome (RDS) was a notable morbidity, affecting 3.33% of neonates admitted, and was the leading cause of early neonatal complications, , 2% due to septicemia, jaundice, transient tachypnoea of newborn, 0.66% foetal death occur due to extreme low birth weight due to prematurity and respiratory distress syndrome.

Overall, the findings underscore the significant **neonatal morbidity associated with Pre-PROM**, especially in early preterm deliveries.

CONCLUSION

Preterm premature rupture of membranes (PPROM) is a commonly encountered obstetric complication. The condition poses jeopardy to both fetus and mother as prematurity and its sequelae endanger the fetus, while risk of infection with an amnionitis is a threat to both fetus and mother.

This study highlights that the majority of PPROM cases occur in the late preterm period, which is generally associated with more favorable neonatal outcomes compared to early PPROM. However, both groups are at risk for complications, with **low birth weight, prematurity, and respiratory distress syndrome** being the most significant contributors to neonatal morbidity. A notable proportion of neonates required NICU admission, emphasizing the need for close monitoring and timely perinatal management. Early identification of maternal risk factors and appropriate intervention can help improve outcomes in pregnancies complicated by PPROM.

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