International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Thanki N et al. Int J Reprod Contracept Obstet Gynecol. 2026 Jun;15(6):2124-2127
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20261621

Original Research Article

A prospective observational study on clinical profile and maternal outcome of pregnant women with PROM greater than 28 weeks to onset of labour

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Received: 09 April 2026
Revised: 13 May 2026
Accepted: 15 May 2026

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ABSTRACT

Background: Prelabour rupture of membranes (PROM) is a common obstetric condition associated with significant maternal morbidity. This study aimed to study clinical profile, associated etiological factors and maternal outcome in pregnancy with PROM.
Methods: This prospective observational study was done at a tertiary health care centre in south Gujarat. All consenting women with PROM (28 weeks to onset of labour) admitted in labour room of a tertiary health care centre in south Gujarat were enrolled in this study.
Results: Majority of patients belonged to age group of 18-25 years (53.3%). Majority of the patients were from normal BMI (76.3%), literate (62.7%), primigravida (54.7%). The majority of women 66.7% presented with leaking per vaginum, while 33.3% presented with abdominal pain without cervical dilatation with incidental detection of PROM. With respect to gestational age, 58% of pregnancies resulted in term delivery, while 42% resulted in preterm delivery. In our study 69.33% had moderate anemia, 25% had positive high vaginal swab for bacterial vaginosis. 70.3% had poor bishop's score, 61.3% of our subjects requires induction of labour, 79.7% subjects had leaking to delivery interval was >12 hours. In this study, 54.6 cases underwent LSCS. Most common indication of LSCS was fetal distress (48.8%). Puerperal pyrexia was the most common maternal complication (14.3%), 30.7% of our subjects had lactational failure.
Conclusions: PROM is a significant obstetric condition associated with increased maternal morbidity. Infection-related complications are the major contributors. Early diagnosis, timely antibiotic therapy, and appropriate obstetric management can significantly improve maternal outcomes.

Keywords: Chorioamnionitis, Lower segment cesarean segment, Preterm rupture of membrane

INTRODUCTION

Prelabour rupture of membranes (PROM) is defined as rupture of fetal membranes before the onset of labour and occurs in approximately 8-10% of pregnancies. It is an important obstetric condition associated with increased maternal morbidity. The fetal membranes act as a barrier to ascending infection, and their rupture exposes both mother and fetus to potential complications. It is associated with increased maternal morbidity including chorioamnionitis, puerperal sepsis, prolonged hospital stay and increased operative delivery.[1] The risk of infection increases with prolonged duration between rupture of membranes and delivery.[2] PROM remains an important contributor to maternal and neonatal morbidity in developing countries due to poor antenatal care, malnutrition and delayed referral.[3]

In developing countries, factors such as poor antenatal care, malnutrition, and delayed presentation to healthcare

facilities further aggravate the risk. This study aimed to evaluate the maternal outcomes in women presenting with PROM in a tertiary care centre.

METHODS

This prospective observational study was conducted in a tertiary health care centre in south Gujarat enrolling 300 subjects fulfilling inclusion criteria of pregnant women of gestational age 28 weeks and above, with PROM, over a period of 1 year from November 2024 to October 2025. All consenting pregnant women beyond 28 weeks of pregnancy presenting with PROM without labour pain were included in this study. Women with gestational age less than 28 weeks, preterm labour with intact membranes, intrauterine fetal demise and those unwilling to participate were excluded from this study.

The study was done with a pre-designed proforma. For every case, information like age, residence, booking status, obstetric history, past history and sonography findings were recorded. Physical and obstetric examination carried out on admission, mode of delivery, intraoperative findings and postnatal/ postoperative complications were noted. All cases were followed up until discharge from the hospital. Ethical approval was granted by Human Resource Research Committee, confidentiality was maintained.

RESULTS

The maternal and fetal outcome of PROM was analyses in relation to age, parity, socioeconomic status, antenatal care, gestational age, parity, past obstetric history, associated risk factors, mode of delivery. Table 1 shows various demographic variables and its relation in patients with PROM. Majority of the patients with PROM were in the age group 18-24 years (53.3%). Majority number of cases were from urban area (85%), maximum number of cases were seen in primigravida (54.7%).

Table 1: Demographic characteristics.

Demographic characteristics	No. of patients	Percentage
Age (years)		
18-24	160	53.3
25-30	138	46.0
>30	2	0.7
Area wise distribution		
Urban	255	85.0
Rural	45	15.0
Obstetric history		
Primigravida	164	54.7
Multigravida	136	45.3
Gestational age (weeks)		
28-34	45	15
34-37	81	27
>37	174	58
Significant past history		
Fever	29	9.67
UTI	27	9
Leaking to delivery interval		
<6 hours	12	4
6-12 hours	48	16
>12 hours	239	79.7
Anemia		
Mild (HB- 10-10.9 gm%)	89	29.7
Moderate (HB- 7-9.9 gm%)	208	69.3
Severe (HB-<7 gm%)	3	1
High vaginal swab		
Positive- Bacterial vaginosis	25	25
Negative	23	19.66

Maximum number of cases (58%) occurred in patients with term PROM (gestational age more than 37 weeks) and 42% cases had PPROM (gestational age between 28 to 37 weeks). Around 9.67% of subjects had past history of

fever. 64.67% subjects had poor bishop's score, 69.3% of subjects had moderate anemia, 25% of our subjects are positive for bacterial vaginosis, 9% had urinary tract infection, 69.33% of subjects had moderate anemia, so careful antenatal monitoring, early detection and treatment of anemia, antibiotic coverage and screening for bacterial vaginosis help prevent PROM.

Table 2: Obstetric outcome.

Mode of delivery	N	Percent
Vaginal delivery	136	45.4
LSCS	164	54.6
Indications of LSCS		
Fetal distress	80	48.8
Non progression of labour	39	19.2

On analyzing intra-natal variables, we observed 70.3% subjects had poor Bishop score, 61.3% subjects required induction of labour, 54.6% subjects required caesarean section.

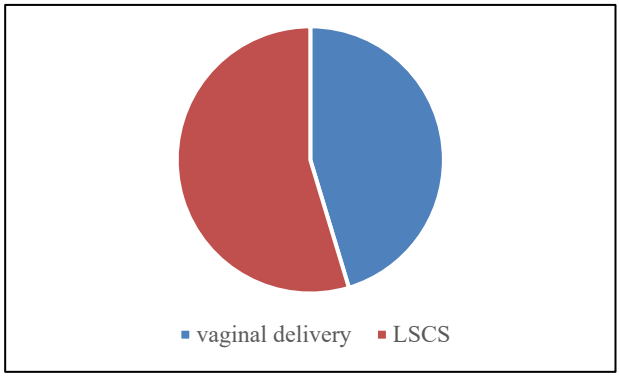

Figure 1: Mode of delivery.

45.4% of our subjects delivered by vaginally, 54.6% subjects delivered by LSCS. Most common indication of LSCS was fetal distress was 48.8%. In our study, lactational failure was most common maternal complication 30.7%. Puerperal pyrexia was 2nd most common maternal complication (14.3%) followed by chorioamnionitis (5.7%) and PPH (3.7%). 48% of our subjects needed second line antibiotics to prevent these complications.

Table 3: Maternal complications.

Category	Frequency	Percentage
Pueperal Pyrexia	43	14.3
Chorioamnionitis	17	5.7
PPH	11	3.7
Wound infection	0	0
Lactational problem	92	30.7
Sepsis	17	5.7
Post op fever	10	3.33
Total	190	63.33

Around 79.7% of patients had delivery >12 hours of membrane rupture, which leads to increase in maternal morbidity like chorioamnionitis, puerperal pyrexia, sepsis.

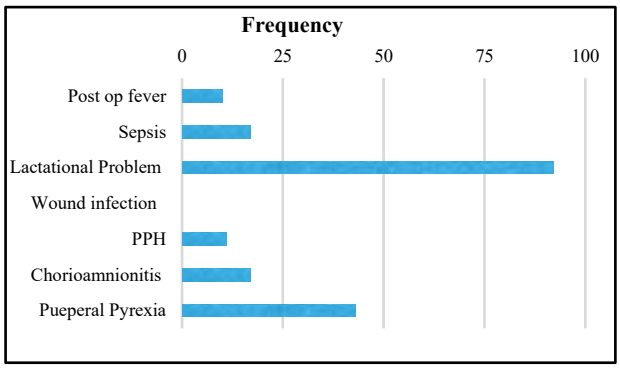

Figure 2: Maternal complications.

DISCUSSION

The present study demonstrated that PROM was more common among younger women and primigravida patients, findings comparable with studies conducted by Andrabi et al.[4] A high rate of caesarean delivery was observed in the present study, with fetal distress being the commonest indication. Similar observations were reported in previous studies on PROM.[5] The prolonged leaking-to-delivery interval observed in most patients may explain the increased maternal morbidity including puerperal pyrexia and chorioamnionitis.[6] Moderate anaemia and bacterial vaginosis were commonly associated with PROM in the present study. Early detection and treatment of maternal infections and anaemia during antenatal care may reduce PROM-related complications.[7] Timely referral, antibiotic therapy and appropriate obstetric intervention remain essential for improving maternal outcomes.[8]

CONCLUSION

Prelabour rupture of membranes (PROM) is a commonly encountered obstetric condition. 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. So, during antenatal period we should focus on careful antenatal monitoring, early detection and treatment of anaemia, antibiotics coverage and progesterone support in patient having fever, screening for bacterial vaginosis shall be done to prevent PROM. On analyzing intra-natal variables, we observed 70.3% subjects had poor Bishop score, 61.3% subjects required induction of labour, 54.6% subjects required caesarean section. Considering high maternal morbidity and caesarean section rate these subjects shall delivered in a center having skilled. Obstetrician and facility for caesarean section. Screening and treatment of risk factors may contribute to prevention of PROM. A team effort by the obstetrician and neonatologist can ensure a healthy and fruitful life for mother and baby.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Thanki N, Trivedi K, Zinzuvadia R. A prospective observational study on clinical profile and maternal outcome of pregnant women with PROM greater than 28 weeks to onset of labour. Int J Reprod Contracept Obstet Gynecol 2026;15:2124-7.