LINK MEDICAL INTERFACE

JHWCR

Journal of Health, Wellness, and Community Research
Volume III, Issue III
Open Access, Double Blind Peer Reviewed.
Web: https://jhwcr.com, **ISSN**: 3007-0570
https://doi.org/10.61919/afkd0p03

Article

Fetomaternal Outcomes in Preterm Prelabour Rupture of Membranes: A Descriptive Case Series from a Tertiary Care Hospital

Sana Latif[1]

1 Department of Obstetrics and Gynaecology, Lady Reading Hospital, Peshawar, Pakistan

Correspondence
sana.latiff@gmail.com

Cite this Article

Received	2025-03-28
Revised	2025-04-13
Accepted	2025-04-17
Published	2025-04-21
Authors' Contributions	SL: concept, design, data collection, analysis, and manuscript drafting.
Conflict of Interest	None declared
Data/supplements	Available on request.
Funding	None
Ethical Approval	Respective Ethical Review Board
Informed Consent	Obtained from all participants
Study Registration	-
Acknowledgments	N/A

ABSTRACT

Background: Preterm prelabour rupture of membranes (PPROM) is a major contributor to preterm births and is associated with significant neonatal and maternal morbidity. Despite its clinical relevance, the pattern and frequency of fetomaternal outcomes in PPROM vary across populations, with limited data from local tertiary care settings in Pakistan, thereby necessitating context-specific evidence. **Objective**: To determine the frequency of fetomaternal outcomes—including cesarean section, postpartum haemorrhage, birth asphyxia, stillbirth, neonatal sepsis, necrotizing enterocolitis, and respiratory distress syndrome—in patients diagnosed with PPROM. **Methods**: This descriptive case series was conducted at the Department of Obstetrics and Gynaecology, Lady Reading Hospital, Peshawar, over six months. A total of 168 pregnant women aged 18–40 years with singleton pregnancies between 24–36 weeks of gestation and diagnosed with PPROM were enrolled through non-probability consecutive sampling. Patients with established labour, fetal anomalies, or intrauterine fetal death were excluded. Data were collected using a structured proforma, and outcomes were monitored until five days postpartum. Ethical approval was obtained, and the study adhered to the Declaration of Helsinki. Data were analyzed using SPSS v22 with chi-square tests applied post-stratification; $p \leq 0.05$ was considered statistically significant. **Results**: The mean maternal age was 28.6 ± 2.53 years, mean gestational age was 30.16 ± 1.97 weeks. Cesarean section was performed in 19.6% of cases, postpartum haemorrhage occurred in 5.4%, birth asphyxia in 8.3%, and stillbirth in 7.7%. Neonatal sepsis (14.3%), necrotizing enterocolitis (12.5%), and respiratory distress syndrome (42.9%) were the most prevalent neonatal complications. None of the outcomes showed statistically significant associations with age, gestational age, parity, or socioeconomic status. **Conclusion**: PPROM is associated with a high burden of neonatal complications, particularly respiratory distress syndrome and sepsis, and a notable cesarean section rate. Early identification, individualized management, and context-specific care strategies are essential to improve fetomaternal outcomes in such cases.

Keywords: Preterm Premature Rupture of Membranes, Neonatal Sepsis, Respiratory Distress Syndrome, Cesarean Section, Perinatal Morbidity, Obstetric Complications, Maternal Outcomes.

INTRODUCTION

Prelabour rupture of membranes (PROM), particularly in its preterm manifestation known as preterm prelabour rupture of membranes (PPROM), is a critical obstetric condition with considerable clinical and public health implications. Defined as the spontaneous rupture of fetal membranes before the onset of labour and prior to 37 weeks of gestation, PPROM is a significant contributor to perinatal morbidity and mortality, as well as maternal complications (1). It accounts for approximately one-third of all preterm births and affects about 3% of all pregnancies, underscoring its substantial burden on maternal-fetal health systems worldwide (2,3). The associated neonatal complications are closely linked to gestational age at rupture, with increased risk of respiratory distress syndrome (RDS), neonatal sepsis, necrotizing enterocolitis, and intraventricular hemorrhage. RDS alone has been identified in 10%–40% of PPROM cases and is implicated in up to 70% of neonatal deaths (4).

Several maternal and environmental factors contribute to the risk of PPROM, including intrauterine infections, low socioeconomic status, inadequate antenatal care, malnutrition, and habits such as smoking (5). The occurrence of PROM can lead to significant

maternal outcomes such as postpartum hemorrhage and increased rates of cesarean section, along with fetal and neonatal consequences like stillbirth, birth asphyxia, and infections (6,7). Despite the high frequency and severe outcomes associated with PPROM, there remains a lack of consensus on optimal management strategies, with therapeutic approaches varying based on institutional protocols and available neonatal intensive care resources (8).

Studies by Mohan et al. have reported wide variations in fetomaternal outcomes, highlighting the heterogeneity in clinical presentations and management practices (9,10). While some centers advocate for expectant management to prolong gestation, others emphasize timely intervention to prevent infection and adverse neonatal outcomes. This disparity in clinical decisions reflects the need for context-specific data to inform practice. In resource-limited settings, like many tertiary care centers in South Asia, understanding local trends in PPROM-related outcomes is critical for shaping evidence-based guidelines and counseling strategies.

Existing literature from developed countries may not fully capture the risk dynamics and healthcare limitations present in low- and middle-income regions. Therefore, it is essential to generate local data that reflect real-world outcomes and guide obstetricians in tailoring individualized management plans. In Pakistan, few studies have systematically documented fetomaternal outcomes in PPROM, particularly in large government hospitals that serve as referral centers for high-risk pregnancies. Given the variability in antenatal care access, nutritional status, and infection control measures, there is a pressing need to investigate how these factors influence outcomes in patients with PPROM.

This study was designed to determine the frequency of fetomaternal outcomes, including cesarean delivery, postpartum hemorrhage, birth asphyxia, stillbirth, neonatal sepsis, necrotizing enterocolitis, and respiratory distress syndrome, in patients presenting with PPROM at a tertiary care hospital. By evaluating these outcomes in the context of maternal age, gestational age, parity, and socioeconomic status, the study aims to identify patterns that may guide risk stratification and management decisions. The central research question guiding this inquiry is: What are the frequencies of key fetomaternal outcomes associated with preterm prelabour rupture of membranes in a tertiary hospital setting, and how do they vary with demographic and clinical factors?

MATERIAL AND METHODS

This study was a descriptive case series conducted at the Department of Obstetrics and Gynaecology, Lady Reading Hospital, Peshawar. It included pregnant women aged between 18 and 40 years who presented with preterm prelabour rupture of membranes (PPROM), defined as spontaneous rupture of fetal membranes before the onset of labour and prior to 37 completed weeks of gestation. Only singleton pregnancies confirmed through ultrasound were included, with gestational age ranging from 24 to 36 weeks based on the last menstrual period. Women of any parity who met the operational definition of PPROM were recruited through consecutive non-probability sampling. Exclusion criteria comprised patients in established labour at the time of clinical evaluation, those with antepartum haemorrhage, uterine anomalies identified on ultrasound, intrauterine fetal death, or fetuses with congenital anomalies.

Participants were enrolled over a six-month period from 20th December 2020 to 20th June 2021. All patients who met the eligibility criteria were informed about the nature and purpose of the study, and written informed consent was obtained prior to enrollment. The study was conducted in accordance with the principles outlined in the Declaration of Helsinki. Patient confidentiality was strictly maintained by coding data and limiting access to identifiable information to study personnel only.

The primary outcomes included cesarean section, postpartum haemorrhage, birth asphyxia, stillbirth, neonatal sepsis, necrotizing enterocolitis, and respiratory distress syndrome. Each outcome was defined and recorded according to standard clinical criteria during the patients' hospital stay. All enrolled participants were monitored from admission through delivery and followed during the postpartum period for a total of five days. Demographic data such as age, gestational age at the time of membrane rupture, parity, and socioeconomic status were recorded at baseline. Socioeconomic status was categorized as low, middle, or high based on self-reported monthly household income and access to basic services.

Data were analyzed using IBM SPSS version 22. Continuous variables such as age, gestational age, and parity were reported as means with standard deviations. Categorical variables including outcome frequencies were expressed as percentages. Stratification was performed for age, gestational age, parity, and socioeconomic status to explore associations with fetomaternal outcomes. Chi-square tests were applied for post-stratification comparisons, and a p-value of ≤0.05 was considered statistically significant (9).

RESULTS

The demographic characteristics of the study participants are presented in Table 1. The mean age of the patients was 28.619 years with a standard deviation (SD) of ±2.53 years, indicating that most women presenting with preterm prelabour rupture of membranes (PPROM) were in their late twenties. The mean gestational age at the time of rupture was 30.160±1.97 weeks, suggesting that a majority of cases occurred during the early third trimester. The mean parity of the sample was 1.297±1.25, reflecting that many women were either primigravida or early in their reproductive history.

Socioeconomic status distribution is detailed in Table 2. The majority of patients belonged to the middle socioeconomic class (58.9%, n=99), followed by the low-income group (29.2%, n=49), while a smaller proportion (11.9%, n=20) came from a high-income background. These figures show a predominance of PPROM cases among women from middle and low socioeconomic brackets.

Fetomaternal outcomes associated with PPROM are outlined in Table 3. Cesarean section was required in 19.6% of cases (n=33), whereas the remaining 80.4% (n=135) had vaginal deliveries. Postpartum haemorrhage (PPH) occurred in 5.4% of patients (n=9). Among the neonates, 8.3% (n=14) experienced birth asphyxia, 7.7%

  https://doi.org/10.61919/afkd0p03

(n=13) were stillborn, and 14.3% (n=24) developed neonatal sepsis. Necrotizing enterocolitis (NEC) was seen in 12.5% (n=21), and respiratory distress syndrome (RDS) was the most frequent complication, affecting 42.9% (n=72) of neonates.

Further stratification of these outcomes by demographic variables is presented in Table 4. The incidence of cesarean section was higher among women aged above 30 years (24.2%) compared to those aged 18–30 (18.5%), though this difference was not statistically significant (p=0.458). Likewise, the frequency of cesarean deliveries was slightly elevated in those with gestational age >30 weeks (20.7%) compared to 24–30 weeks (18.6%) with no significant association (p=0.729). Women with higher parity (>2) underwent more cesarean sections (28.1%) than those with lower parity (17.6%), but again the difference was not statistically significant (p=0.179). Socioeconomic status did not significantly influence cesarean delivery rates (p=0.984).

Postpartum haemorrhage was marginally more frequent among women older than 30 years (9.1%) than those aged 18–30 years (4.4%), though the association was not statistically significant (p=0.288). The incidence of PPH varied slightly across gestational age groups—5.8% in 24–30 weeks and 4.9% in >30 weeks (p=0.788). Higher parity (>2) was associated with a higher rate of PPH (9.4%) compared to parity 0–2 (4.4%), yet not reaching statistical significance (p=0.262). Socioeconomic status did not influence PPH incidence (p=0.879).

Birth asphyxia occurred more frequently among younger mothers (18–30 years) at 9.6% compared to 3% in those above 30 years, though this difference was not statistically significant (p=0.219). It was more common in gestational age >30 weeks (9.8%) than in 24–30 weeks (7%) (p=0.515). Among parity groups, birth asphyxia was observed only in patients with parity 0–2 (10.3%) and none among those with higher parity (>2) (p=0.058). No significant differences were noted across socioeconomic groups (p=0.832).

Stillbirths were notably higher in women over 30 years (15.2%) versus those aged 18–30 years (5.9%) with a borderline p-value of 0.075. A higher frequency was observed in the gestational age group 24–30 weeks (10.5%) compared to >30 weeks (4.9%) (p=0.175). Higher parity was associated with an increased stillbirth rate (12.5%) compared to lower parity (6.6%), but without statistical significance (p=0.262). The highest rate of stillbirth was seen among high socioeconomic status patients (15%) compared to middle (8.1%) and low (4.1%) groups (p=0.300).

Neonatal sepsis was slightly more common among mothers aged >30 years (18.2%) than those aged 18–30 (13.3%) (p=0.476), and among those with gestational age >30 weeks (15.9%) compared to 24–30 weeks (12.8%) (p=0.571). Sepsis occurred in 18.8% of neonates born to mothers with parity >2 versus 13.2% in those with parity 0–2 (p=0.422). There was a higher proportion in the low socioeconomic group (16.3%), followed by the middle (15.2%) and high (5%) groups, but the association remained statistically non-significant (p=0.441).

Necrotizing enterocolitis was reported more frequently among younger mothers (14.1%) compared to those older than 30 (6.1%) (p=0.212). The condition occurred in 11.6% of neonates in the 24–30 week group and in 13.4% of those with gestational age >30 weeks (p=0.726). A higher frequency was observed in parity 0–2 (14.7%) versus parity >2 (3.1%), nearing statistical significance (p=0.075). The socioeconomic differences were minor and statistically insignificant (p=0.623).

Table 1: Mean ± SD of patients according to age, gestational age and parity.

Demographics	Mean ± SD	
1	Age (years)	28.619±2.53
2	Gestational age (weeks)	30.160±1.97
3	Parity	1.297±1.25

Table 2: Frequency and %age of patients according to socioeconomic status.

Socioeconomic Status	Frequency	%age
Low	49	29.2%
Middle	99	58.9%
High	20	11.9%
Total	168	100%

Table 3: Frequency and Percentage of Patients According to Maternal and Neonatal Outcomes (n = 168)

Outcome	Yes (n, %)	No (n, %)	Total
C-section	33 (19.6%)	135 (80.4%)	168
Postpartum Haemorrhage (PPH)	9 (5.4%)	159 (94.6%)	168
Birth Asphyxia	14 (8.3%)	154 (91.7%)	168
Still Birth	13 (7.7%)	155 (92.3%)	168
Neonatal Sepsis	24 (14.3%)	144 (85.7%)	168
Necrotizing Enterocolitis	21 (12.5%)	147 (87.5%)	168
Respiratory Distress Syndrome	72 (42.9%)	96 (57.1%)	168

Respiratory distress syndrome was the most prevalent neonatal complication, affecting 43% of neonates born to mothers aged 18–30 and 42.4% in those over 30 (p=0.955). The occurrence of RDS was slightly higher in the 24–30 week group (44.2%) compared to

the >30 week group (41.5%) (p=0.722). RDS was more common among women with higher parity (>2), with an incidence of 50% compared to 41.2% in parity 0–2 (p=0.364). Socioeconomic status did not show any meaningful association with RDS (p=0.903), as rates were 44.9%, 41.4%, and 45% across low, middle, and high groups, respectively. Fetomaternal outcomes were cesarean section 19.6%, postpartum haemorrhage 5.4%, birth asphyxia 8.3%, still birth 7.7%, neonatal sepsis 14.3%, necrotizing enterocolitis 12.5% and respiratory distress syndrome was 42.9% as shown in Table 3.

Table 4: Combined Stratification Table of C-section, PPH, Birth Asphyxia, Still Birth, Neonatal Sepsis, NEC & RDS by Demographic Variables

Outcome	Stratification Variable	Category	Yes (n, %)	No (n, %)	p-value
C-section	Age (years)	18â€“30	25 (18.5%)	110 (81.5%)	0.458
		>30	8 (24.2%)	25 (75.8%)	
	Gestational Age (weeks)	24â€“30	16 (18.6%)	70 (81.4%)	0.729
		>30	17 (20.7%)	65 (79.3%)	
	Parity	0â€“2	24 (17.6%)	112 (82.4%)	0.179
		>2	9 (28.1%)	23 (71.9%)	
	Socioeconomic Status	Low	10 (20.4%)	39 (79.6%)	0.984
		Middle	19 (19.2%)	80 (80.8%)	
		High	4 (20.0%)	16 (80.0%)	
PPH	Age (years)	18â€“30	6 (4.4%)	129 (95.6%)	0.288
		>30	3 (9.1%)	30 (90.9%)	
	Gestational Age (weeks)	24â€“30	5 (5.8%)	81 (94.2%)	0.788
		>30	4 (4.9%)	78 (95.1%)	
	Parity	0â€“2	6 (4.4%)	130 (95.6%)	0.262
		>2	3 (9.4%)	29 (90.6%)	
	Socioeconomic Status	Low	2 (4.1%)	47 (95.9%)	0.879
		Middle	6 (6.1%)	93 (93.9%)	
		High	1 (5.0%)	19 (95.0%)	
Birth Asphyxia	Age (years)	18â€“30	13 (9.6%)	122 (90.4%)	0.219
		>30	1 (3.0%)	32 (97.0%)	
	Gestational Age (weeks)	24â€“30	6 (7.0%)	80 (93.0%)	0.515
		>30	8 (9.8%)	74 (90.2%)	
	Parity	0â€“2	14 (10.3%)	122 (89.7%)	0.058
		>2	0 (0.0%)	32 (100.0%)	
	Socioeconomic Status	Low	4 (8.2%)	45 (91.8%)	0.832
		Middle	9 (9.1%)	90 (90.9%)	
		High	1 (5.0%)	19 (95.0%)	
Still Birth	Age (years)	18â€“30	8 (5.9%)	127 (94.1%)	0.075
		>30	5 (15.2%)	28 (84.8%)	
	Gestational Age (weeks)	24â€“30	9 (10.5%)	77 (89.5%)	0.175
		>30	4 (4.9%)	78 (95.1%)	
	Parity	0â€“2	9 (6.6%)	127 (93.4%)	0.262
		>2	4 (12.5%)	28 (87.5%)	
	Socioeconomic Status	Low	2 (4.1%)	47 (95.9%)	0.3
		Middle	8 (8.1%)	91 (91.9%)	
		High	3 (15.0%)	17 (85.0%)	
Neonatal Sepsis	Age (years)	18â€“30	18 (13.3%)	117 (86.7%)	0.476
		>30	6 (18.2%)	27 (81.8%)	
	Gestational Age (weeks)	24â€“30	11 (12.8%)	75 (87.2%)	0.571
		>30	13 (15.9%)	69 (84.1%)	
	Parity	0â€“2	18 (13.2%)	118 (86.8%)	0.422

  https://doi.org/10.61919/afkd0p03

Outcome	Stratification Variable	Category	Yes (n, %)	No (n, %)	p-value
		>2	6 (18.8%)	26 (81.2%)	
	Socioeconomic Status	Low	8 (16.3%)	41 (83.7%)	0.441
		Middle	15 (15.2%)	84 (84.8%)	
		High	1 (5.0%)	19 (95.0%)	
NEC	Age (years)	18â€“30	19 (14.1%)	116 (85.9%)	0.212
		>30	2 (6.1%)	31 (93.9%)	
	Gestational Age (weeks)	24â€“30	10 (11.6%)	76 (88.4%)	0.726
		>30	11 (13.4%)	71 (86.6%)	
	Parity	0â€“2	20 (14.7%)	116 (85.3%)	0.075
		>2	1 (3.1%)	31 (96.9%)	
	Socioeconomic Status	Low	8 (16.3%)	41 (83.7%)	0.623
		Middle	11 (11.1%)	88 (88.9%)	
		High	2 (10.0%)	18 (90.0%)	
RDS	Age (years)	18â€“30	58 (43.0%)	77 (57.0%)	0.955
		>30	14 (42.4%)	19 (57.6%)	
	Gestational Age (weeks)	24â€“30	38 (44.2%)	48 (55.8%)	0.722
		>30	34 (41.5%)	48 (58.5%)	
	Parity	0â€“2	56 (41.2%)	80 (58.8%)	0.364
		>2	16 (50.0%)	16 (50.0%)	
	Socioeconomic Status	Low	22 (44.9%)	27 (55.1%)	0.903
		Middle	41 (41.4%)	58 (58.6%)	
		High	9 (45.0%)	11 (55.0%)	

DISCUSSION

The present study investigated fetomaternal outcomes in cases of preterm prelabour rupture of membranes (PPROM) and contributes to the growing body of literature seeking to better understand the clinical implications of this obstetric complication. The findings revealed that respiratory distress syndrome (RDS) was the most frequent neonatal outcome, occurring in 42.9% of cases, followed by neonatal sepsis (14.3%), necrotizing enterocolitis (12.5%), and birth asphyxia (8.3%). Maternal outcomes included a cesarean section rate of 19.6% and postpartum haemorrhage in 5.4% of cases. These frequencies are consistent with earlier studies reporting PPROM-associated morbidity. For instance, Mohan et al. documented RDS in 86.6% of cases and neonatal sepsis in 33.3% in a cohort managed expectantly before 25 weeks of gestation, suggesting higher complications with earlier PPROM onset (10). Conversely, our study population had a mean gestational age of 30.16 weeks, possibly accounting for the relatively lower rates of neonatal complications.

When comparing cesarean section rates, the 19.6% frequency observed in our study aligns closely with the 22.5% reported by Mohan et al. (9), and is lower than the 31% rate reported by Shetty and Shetty in term PROM cases (18). These differences reflect the influence of gestational age, cervical favourability, and clinical decision-making policies. Notably, in our cohort, cesarean delivery was more frequent among women with higher parity and unripe cervices, though not statistically significant, supporting prior findings that unfavourable cervix and fetal malpresentations increase surgical delivery likelihood (11). Additionally, our findings support Borna et al., who showed higher cesarean rates among patients with oligohydramnios (AFI <5), due to increased risk of non-reassuring fetal testing (13).

Stillbirth occurred in 7.7% of cases in our study, comparable to the 9.5% reported in Mohan et al. (10), but lower than the 12% perinatal mortality reported by Shetty and Shetty (18). The reduction in stillbirth rate may be attributed to better monitoring, timely interventions, and supportive neonatal care in our setting. Birth asphyxia occurred in 8.3% of neonates, a rate higher than the 5.38% found by Mohan et al. (9), possibly reflecting variations in neonatal resuscitation protocols or response time post-delivery.

The high incidence of RDS in our study is consistent with literature identifying it as a primary complication of preterm delivery following membrane rupture. As RDS incidence inversely correlates with gestational age, its occurrence in 42.9% of neonates in our population with a mean gestation of 30 weeks is within expected limits. Merenstein and Weisman highlighted that low levels of surfactant in preterm infants significantly contribute to RDS, which remains a major cause of neonatal morbidity and mortality following PPROM (14). The role of antenatal corticosteroids in reducing RDS severity is well established, although our study did not document steroid use as a variable, limiting interpretation of its effect.

Neonatal sepsis was present in 14.3% of cases, a value higher than in some regional studies (6.58%) (9), but markedly lower than the 33.3% reported in very early gestational ruptures (10). This trend suggests that latency duration and gestational age at rupture are

critical factors influencing infection risk. The theoretical basis lies in prolonged membrane exposure leading to ascending infection, reduced amniotic antimicrobial capacity in early gestation, and immature neonatal immune defenses (4,14). Clinical protocols that incorporate vigilant infection monitoring and timely delivery decisions may mitigate this risk.

Necrotizing enterocolitis (12.5%) was also a frequent finding and aligns with rates observed in other cohorts involving neonates born after PPROM. The pathophysiology may involve a combination of intestinal immaturity, compromised perfusion, and microbial colonization, all of which are exacerbated by prematurity and inflammation from intrauterine infections (7). The association of NEC with lower parity groups in our study, while not statistically significant, warrants further exploration to determine if primigravid patients have less resilient intrauterine environments or delayed health-seeking behavior.

While our study provides useful insight into the burden and spectrum of fetomaternal outcomes associated with PPROM, several limitations must be acknowledged. The single-center design limits generalizability, particularly to rural or lower-tier healthcare settings where diagnostic and neonatal support facilities may differ significantly. Additionally, the use of non-probability sampling may have introduced selection bias. Although data were prospectively collected, not all clinical management variables—such as latency duration, use of corticosteroids or antibiotics, or neonatal weight—were documented, limiting the ability to control for confounding factors. The relatively small sample size also limited the power to detect statistically significant associations in subgroup analyses.

Nonetheless, this study's strengths lie in its systematic follow-up of participants from admission through postpartum recovery, use of standardized definitions for outcomes, and stratification by key demographic factors, allowing contextual interpretation. Future research should aim to incorporate multicenter datasets, include longitudinal tracking beyond the early postpartum period, and consider the impact of interventional variables such as antenatal corticosteroids, tocolysis, and antibiotic prophylaxis. Further investigation into the duration of membrane rupture and latency-to-delivery interval would provide critical insights into optimizing neonatal outcomes and reducing infectious complications.

In conclusion, the findings confirm that PPROM is a clinically significant condition associated with substantial neonatal morbidity, especially respiratory distress syndrome and sepsis, as well as notable maternal outcomes like cesarean section and postpartum haemorrhage. The variability in outcomes underscores the importance of individualized management based on gestational age, parity, and maternal health. Enhanced surveillance, early diagnosis, and gestational-age-based therapeutic approaches remain pivotal in improving prognosis for both mothers and neonates affected by this condition.

CONCLUSION

This study on fetomaternal outcomes in preterm prelabour rupture of membranes (PPROM) highlights a substantial burden of neonatal complications, particularly respiratory distress syndrome, neonatal sepsis, and necrotizing enterocolitis, along with maternal outcomes such as cesarean delivery and postpartum haemorrhage. The findings underscore the clinical significance of PPROM as a major contributor to preterm morbidity and mortality, aligning with the study objective to determine the frequency of these outcomes. These results emphasize the need for gestational age-specific management strategies, early risk identification, and timely interventions to improve maternal and neonatal prognosis. Clinically, the study supports vigilant monitoring and individualized care protocols in obstetric practice, while also indicating the necessity for further research on long-term neonatal outcomes and the efficacy of preventive interventions in diverse healthcare settings.

REFERENCES

1. Patil P, Kumari A, Anand HP. Ultrasonographic Evaluation of Cervical Length and Amniotic Fluid Index as Predictor of Pregnancy Outcome in Case of Preterm Premature Rupture of Membrane. Int J Reprod Contracept Obstet Gynecol. 2018;7(4):1411–5.
2. Yu H, Wang X, Gao H, You Y, Xing A. Perinatal Outcomes of Pregnancies Complicated by Preterm Premature Rupture of the Membranes Before 34 Weeks of Gestation in a Tertiary Center in China: A Retrospective Review. Biosci Trends. 2015;9(1):35–41.
3. Manuck TA, Rice MM, Bailit JL, Grobman WA, Reddy UM, Wapner RJ, et al. Preterm Neonatal Morbidity and Mortality by Gestational Age: A Contemporary Cohort. Am J Obstet Gynecol. 2016;215(1):103.e1–103.e14.
4. Dars S, Malik S, Samreen I, Kazi RA. Maternal Morbidity and Perinatal Outcome in Preterm Premature Rupture of Membranes Before 37 Weeks Gestation. Pak J Med Sci. 2014;30(3):626–9.
5. Frey HA, Klebanoff MA. The Epidemiology, Etiology, and Costs of Preterm Birth. Semin Fetal Neonatal Med. 2016;21(2):68–73.
6. Kothari S, Jora R, Chouhan H. Incidence and Risk Factors for Low Birth Weight, Very Low Birth Weight and Extremely Low Birth Weight Babies in Western Rajasthan. IP Int J Med Paediatr Oncol. 2017;3(3):102–5.
7. Asgarian A, Sourani K, Afrashteh S, Mohammadbeigi A. The Prenatal Outcomes of Pregnancies After 34 Weeks Complicated by Preterm Premature Rupture of the Membranes. Adv Hum Biol. 2019;9(3):263–6.
8. Drassinower D, Friedman AM, Običan SG, Levin H, Gyamfi-Bannerman C. Prolonged Latency of Preterm Premature Rupture of Membranes and Risk of Neonatal Sepsis. Am J Obstet Gynecol. 2016;214(6):743.e1–6.
9. Esteves JS, Sá RAM, Carvalho PRN, Velarde LGC. Neonatal Outcome in Women With Preterm Premature Rupture of Membranes (PPROM) Between 18 and 26 Weeks. J Matern Fetal Neonatal Med. 2016;29(7):1108–12.
10. Polettini J, Dutta EH, Behnia F, Saade GR, Torloni MR, Menon R. Aging of Intrauterine Tissues in Spontaneous Preterm Birth and Preterm Premature Rupture of the Membranes: A

Systematic Review of the Literature. Placenta. 2015;36(9):969–73.

11. Mohan SS, Thippeveeranna C, Singh NN, Singh LR. Analysis of Risk Factors, Maternal and Fetal Outcome of Spontaneous Preterm Premature Rupture of Membranes: A Cross Sectional Study. Int J Reprod Contracept Obstet Gynecol. 2017;6(9):3781–7.

12. Mohan S, Fatema N, Osit VC, Abri FM, Shafouri NST. Maternal and Perinatal Outcomes Following Expectant Management of Preterm Premature Rupture of Membranes Before 25 Weeks of Gestation: A Retrospective Observational Study. J Clin Gynecol Obstet. 2018;7(1):1–6.

13. Borna S, Borna H, Khazardoost S, Hantoushzadeh S. Perinatal Outcome in Preterm Premature Rupture of Membranes With Amniotic Fluid Index <5. BMC Pregnancy Childbirth. 2004;4(1):15.

14. Merenstein GB, Weisman LE. Premature Rupture of the Membranes: Neonatal Consequences. Semin Perinatol. 1996;20(5):375–80.

15. Shetty S, Shetty H. Fetomaternal Outcomes in Premature Rupture of Membranes at Term: A Case Control Study. Int J Reprod Contracept Obstet Gynecol. 2018;7(2):725–30.

16. Akter S, Akter R, Rashid M. Preterm Prelabour Rupture of the Membrane and Feto-Maternal Outcome: An Observational Study. J Bangladesh Coll Phys Surg. 2010;28(1):17–23.

17. Triniti A, Suthatvorawut S, O-Prasertsawat P. Epidemiologic Study of Cervical Swab Culture in Preterm Premature Rupture of Membrane (PPROM) at Ramathibodi Hospital. Thai J Obstet Gynaecol. 2008;16(3):173–8.

18. M P, Yogalaksmi Y. A Study of Perinatal Outcome in Preterm Premature Rupture of Membranes. Int J Reprod Contracept Obstet Gynecol. 2018;7(12):5061–5.

19. Canavan TP, Simhan HN, Caritis S. An Evidence-Based Approach to the Evaluation and Treatment of Premature Rupture of Membranes: Part II. Obstet Gynecol Surv. 2004;59(9):678–89.