

# Fetal-Maternal Complications due to Premature Rupture of Membranes: A Prospective Study at Valley's Famous Maternity Hospital

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## ABSTRACT

**Background:** The fetal membrane remains intact till the labor starts in order to maintain the protective intrauterine fluid environment. However, sometimes membranes ruptures prematurely (PROM), a condition in which the disruption of fetal membranes takes place before the beginning of labor that ultimately results in spontaneous leakage of amniotic fluid. The present study is aimed to evaluate the foeto-maternal outcomes due to premature rupture of membranes at term.

**Methods:** A total 70 pregnant women patients with premature rupture of membranes after 37 completed weeks were selected in the study after they properly signed the consent form. Gestational age was confirmed from LMP, clinically, and radiologically. Cervical dilatation of <3 cms, Lack of uterine contractions for at least 1 hour from PROM, Single live pregnancy in vertex presentation and PROM confirmed by Direct visualization or Litmus.

**Results:** Febrile illness as maternal outcome was found in 18.6% patients followed by wound infection in 4.3%. Rest of the patients had pph (2.9%), UTI (1.4%) and sepsis (2.9) as maternal outcome. Perinatal outcome was assessed among the studied patients and it was found that (17.1%) had birth asphyxia followed by (5.7%) patients with septicemia perinatal outcome. Only (2.9%) patients had death as perinatal outcome.

**Conclusion:** The present study revealed that PPRM is undoubtedly associated with a prenatal morbidity and mortality. However,

early diagnosis and timely management is must in order to reduce the associated complications due to PROM.

**Keywords:** Premature rupture of membrane, perinatal complications, gestational age

## INTRODUCTION

Fetal membrane plays a vital role in pregnancy process; it environs the fetus during the gestational period and essentially ensures the maintenance of pregnancy till the delivery of baby. The fetal membrane remains intact till the labor starts in order to maintain the protective intrauterine fluid environment. However, sometimes membranes ruptures prematurely (PROM), a condition in which the disruption of fetal membranes takes place before the beginning of labor that ultimately results in spontaneous leakage of amniotic fluid. This very phenomenon (PROM), if occurs prior to 37 weeks of gestation, then it is termed as preterm PROM, however, if it occurs post 37 weeks of gestational period then it is called as term PROM. It has been reported that around 80% of PROM occur at term and its prevalence approximately ranges from 5%-10%.<sup>1, 2</sup> There is no doubt that PROM significantly contributes to both maternal and fetal mortality and morbidity. Around 18-20% of prenatal mortalities are due to PROM; sepsis, asphyxia and pulmonary hyperplasia are some well-known causal factors of fetal mortality that

arise due to PROM.<sup>3,4</sup> Intrauterine infection among women essentially increases the likelihood of early delivery and the infants born with sepsis have a four-fold death rate compared to those infants born without sepsis.<sup>5</sup> PROM is linked with the risk of developing; chorioamnionitis, unfavorable cervix and dysfunctional labour, increased cesarean rates, maternal endometritis and postpartum hemorrhage (PPH). The present study is aimed to evaluate the feto-maternal outcomes due to premature rupture of membranes at term.

### MATERIAL AND METHODS

The present prospective study has been conducted at Lala-Ded Hospital, Srinagar during March 2016-August 2016. A total 70 pregnant women patients with premature rupture of membranes after 37 completed weeks were selected in the study after they properly signed the consent form. Gestational age of >37 weeks was confirmed on ultrasound, clinically, and LMP date, Cervical dilatation of <3 cms, Lack of uterine contractions for at least 1

hour from PROM, Single live pregnancy in vertex presentation and PROM confirmed by Direct visualization or Litmus. Exclusion Criteria was Gestational age <37 weeks, Cervical dilatation of >3 cms, Women in labour or with uterine contractions within 1 hour of rupture of membrane, Previous cesarean section, Malpresentations and multiple gestations and Complications like contracted pelvis, cephalopelvic disproportion, multiple pregnancy and malpresentations. All the history relevant to the study was taken from the patients. The recorded data was compiled and entered in a spreadsheet (Microsoft Excel) and then exported to data editor of SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA). Continuous variables were expressed as Mean±SD and categorical variables were summarized as frequencies and percentages. Graphically the data was presented by bar diagrams.

### RESULTS AND OBSERVATIONS

In this section we will present all the results in tabular form

Table 1: Clinico-demographic characteristics of study patients [n=70]

Parameter	Number	Percentage	
Age (Years)	< 20	11	15.7
	20-24	45	64.3
	25-29	11	15.7
	30-34	2	2.9
	≥ 35	1	1.4
<b>Mean±SD= 21.8±5.41</b>			
Ante-natal registration	Booked	18	25.7
	Unbooked	52	74.3
Gravida	Primi	48	68.6
	Multi	22	31.4
Time from PROM to admission (hours)	0-6	36	51.4
	6-12	19	27.1
	12-24	12	17.1
	24-48	2	2.9
	≥ 48	1	1.4
<b>Mean±SD= 11.2±2.7</b>			
Mode of delivery	Vaginal delivery	45	64.3
	Ventouse delivery	3	4.3
	LSCS	22	31.4
Indications for LSCS	Failure to progress	12	54.5
	Fetal distress	10	45.5

We found that the average age of patients is (21.8±5.41) years with majority of patients belonging to age interval group of 20-24 year. In the present study, majority of patients were primi gravida constituting about 68.6% and around 31.4% were multi gravida. We analysed time from PROM to

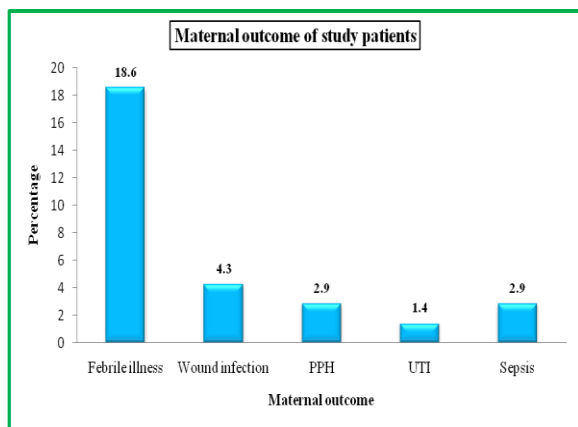
hospital admission and observed that majority of patients accounting for 51.4% reached the hospital within 6 hours after PROM followed by 27.1% patients who make it to the admission from 6 -12 hours after PROM. Mode of delivery was assessed among the patients; it was found that

majority of patients (64.3%) had vaginal delivery and 4.3% had ventouse delivery. The commonest indication for LSCS was failure to progress, accounting for 54.5% and fetal distress indication was found in 45.5% patients

**Table 2: Maternal outcome of study patients**

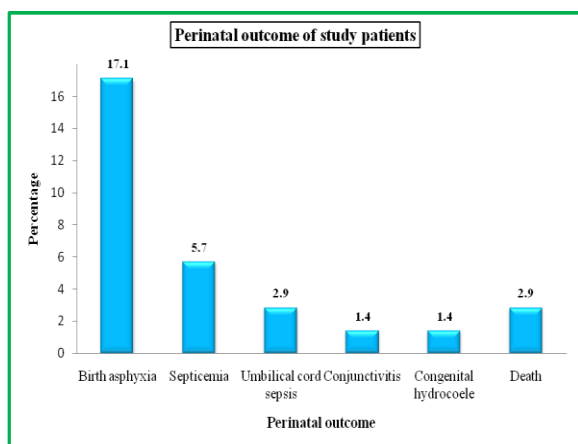
Maternal outcome	Number	Percentage
Febrile illness	13	18.6
Wound infection	3	4.3
PPH	2	2.9
UTI	1	1.4
Sepsis	2	2.9

Febrile illness as maternal outcome was found in 18.6% patients followed by wound infection in 4.3%. Rest of the patients had pph (2.9%), UTI (1.4%) and sepsis (2.9) as maternal outcome.



**Table 3: Perinatal outcome of study patients**

Perinatal outcome	Number	Percentage
Birth asphyxia	12	17.1
Septicemia	4	5.7
Umbilical cord sepsis	2	2.9
Conjunctivitis	1	1.4
Congenital hydrocoele	1	1.4
Death	2	2.9



Perinatal outcome was assessed among the studied patients; and it was found that (17.1%) had birth asphyxia followed by

5.7% patients with septicemia perinatal outcome. Only 2.9% patients had death as perinatal outcome

## DISCUSSION

In the present study on fetal and maternal outcome of PROM patients we analyzed several parameters; we found that the average age of patients was (21.8±5.41) years with majority of patients belonging to age interval group of 20-24 year which is similar to what Patil et al, Gaikwad BH et al, Nagaria T et al reported.<sup>6, 7, 8</sup> For instance, Patil et al reported that maximum number of patients were from 20-24 year age group with average raga age of 22 years.<sup>6</sup> In the present study, majority of patients were primi gravida constituting about (68.6%) and around (31.4%) were multi gravida. Most of the patients had unbooked antenatal registration (74.3%) in comparison to booked registration of (24.7%). These findings are comparable with Patil et al who reported 70% un-booked cases in their study apart from this, Nagaria T et al and Shah M et al also reported likewise results on antennal registration status of patients.<sup>6, 8, 9</sup> It has been found that poor antenatal booking significantly escalates the associated risk factors on PROM.<sup>10</sup> In this study we found that majority of patients accounting for 51.4% reached the hospital within 6 hours duration after had PROM followed by 27.1% patients who make it to the hospital admission within 6 -12 hours after PROM. The average duration from PROM to hospital was (11.2±2.7) hours, comparable to this, several authors reported the likewise results on the duration of PROM to hospital.<sup>6, 7, 11</sup> Mode of delivery was assessed among the patients and it was observed that majority of patients (64.3%) had vaginal delivery and (4.3%) had ventouse delivery. However, the commonest indication for LSCS was failure to progress, accounting for 54.5% and fetal distress indication was found in 45.5% patients. Patil et al reported that almost (66%) had vaginal delivery followed by (34%) LSCS which is similar to our observation, other

authors also reported similar results on mode of delivery.<sup>6,12-14</sup> Among the studied patients; febrile illness as maternal outcome was found in (18.6%) patients followed by wound infection in (4.3%), rest of the patients had pph (2.9%), UTI (1.4%) and sepsis (2.9) as maternal outcome. Likewise results were reported by Patil et al who reported febrile illness as most common maternal outcome.<sup>6</sup> However, contrary to our observation on maternal outcome, Amla et al have reported post-partum fever and UTI as most common maternal complication.<sup>10</sup> In the present study; perinatal outcome was assessed among the studied patients and it was found that (17.1%) had birth asphyxia followed by (5.7%) patients with septicemia perinatal outcome. Only (2.9%) perinatal deaths were recorded during the study period and all these deaths were due to birth asphyxia, these results are in conformity with.<sup>6,7</sup>

## CONCLUSION

The present study revealed that PPRM is undoubtedly associated with a prenatal morbidity and mortality. However, early diagnosis and timely management is must in order to reduce the associated complications due to PROM.

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**Ethical Approval:** Approved

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