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## A study on risk factors and outcome in prelabour rupture of membrane

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### Abstract

**Background and Objectives:** During the last three decades it has taken a new dimension because of identification of clinical risk factors and improved fetomaternal outcome due to better management. The present study aimed to assess the maternal and fetal outcome in patients with prelabour rupture of membrane.

**Methods:** The present prospective cross-sectional study was conducted among the patients presenting with spontaneous rupture of membrane, admitted in Department of OBG of Al-Ameen Medical College Medical College, Athani road, Vijayapura. Informed consent was taken from all enrolled patients after detailed counselling. The contents of the consent were read out to the patients in his language. Detailed history taking including age, parity, weight gain, inter pregnancy interval. History emphasized on exact time of rupture of membrane and duration the amount of leak. Detailed examination like blood pressure, height, temperature was noted. In obstetric history uterine height, fetal presentation, fetal heart rate, estimated weight and other parameters of maternal and fetal well-being was noted. A sterile speculum examination was conducted and presence of liquor amni was noted. The maternal and fetal outcome were monitored and recorded in the Performa. All the data were entered in excel sheet and the analysis was performed using SPSS V.21.0 operating on windows 10.

**Results:** Present study total of 100 patients fulfilling inclusion criteria are included in present study after obtaining the informed consent. The mean age of the patients was found to be 24.92. The maternal complications seen among patients were with 34% puerperal fever, followed with 10% with wound infections and 3% with UTI. Among the fetal complications, the study documented majority with presence of respiratory distress syndrome in 17% of the newborn, followed with 4% meconium aspiration, 3% with conjunctivitis and 1% with sepsis and still birth.

**Conclusion:** The present study documented the major etiological factors for PROM among study participants was following the coitus, followed with history of previous pregnancy leaking. The study also documented the common mode of delivery was lower segment caesarean section with cause of failure to progress among them. The maternal complication documented was majority with puerperal fever and wound infection. The newborn complication documented was majority with respiratory distress syndrome followed with meconium aspiration.

**Keywords:** Prelabour rupture of membrane, Neonatal morbidity and mortality, maternal morbidity and mortality, amniotic fluid, pre term vaginal delivery

### Introduction

Prelabour rupture of membranes (PROM) is a challenging problem to the obstetricians <sup>[1, 2]</sup>. During the last three decades it has taken a new dimension because of identification of clinical risk factors and improved fetomaternal outcome due to better management (use of antenatal corticosteroids, improved to colysis, availability of safer antibacterial agents, safer modes of delivery and improved neonatal care) <sup>[3, 4]</sup>.

When membranes rupture before the onset of labor, it is known as prelabour rupture of membranes (PROM). When PROM occurs before 37 completed weeks of gestation it is termed as preterm prelabour rupture of membranes (p PROM) <sup>[5]</sup>.

In majority of PROM cases approaching term, labor starts within 24 hours (85-90%), but in 10-15% cases, labor may be delayed. When membranes remain ruptured for more than 24 hours (prolonged rupture of membranes) fetomaternal complications are substantial.

Any indication of infection, foetal distress, or cord injuries calls for delivery. It is crucial to adapt a gestational age strategy to therapy to the newborn care unit of each institution. All

pregnant women should be given antenatal antibiotics and steroids without complications since they have obvious advantages. Most of the problem +s of PROM are infection related and also due to gestational immaturity. Hence this study is directed towards optimum management of labor in PROM cases, and operative interventions, if necessary.

### Aims & Objectives

- To study the etiology of PROM.
- To study the labour outcome in PROM.
- To study maternal and fetal mortality and morbidity associated with PROM,

### Material & Method

**Study design:** A prospective cross-sectional study.

### Source of data

- 100 Cases each Of spontaneous rupture of membrane, admitted in Department of Obg,
- Duration of study: February 2021- January 2023
- Al-Ameen Medical College Medical College,
- Athani road, Vijayapur

### Inclusion criteria

1. Primigravida/Multigravida
2. Confirmation of PROM by speculum examination
3. Vertex presentation
4. Adequate pelvis
5. Previous 1 LSCS

### Exclusion criteria

- Malpresentation
- Congenital anomalie / IUDs

### Sample size

A total of 100 patients fulfilling the inclusion criteria were included.

### Sample size estimation

With confidence level of 95%, error of 5% and with prevalence of PROM of 7%, we get a sample size of 98, rounding up to 100 sample size.

Sample size was calculated using the formula

$$P = \frac{4PQ}{D^2}$$

Where,

D – Margin of error

P – Prevalence

Q – 100-p

According to Pandey *et al.* (2000) [16], the incidence of PROM was 7.71% (20)

### Results

In present study total of 100 patients fulfilling inclusion criteria are included in present study after obtaining the informed consent. The mean age of the patients was found to be 24.92±3.77yrs.

**Table 1:** Mean age of the patients

	N	Minimum	Maximum	Mean	SD
Age	100	18.0	36.0	24.920	3.77

**Table 2:** Age wise distribution of patients

	Frequency	Percent	
Age wise	18-25yrs	63	63.0
	26-30yrs	27	27.0
	>31yrs	10	10.0
	Total	100	100.0

The age wise distribution of the patients found to be majority in age of 18-25yrs followed with 26-30yrs and more than 31yrs.

**Table 3:** Showing mean time of PV leak

	Minimum	Maximum	Mean	SD
PV leak since hrs	1.0	48.0	10.990	12.37

The mean time of PV leak was found to be 10.99±12.37hrs.

**Table 4:** Showing pain in abdomen among patients

	Minimum	Maximum	Mean	SD
Pain in abdomen Since hrs	1	24	5.87	4.68

The mean time of pain in abdomen was seen in 5.87±4.68hrs.

**Table 5:** Showing the suspected predisposing factors among patients

	Frequency	Percent	
Suspected predisposing factors	Absent	51	51.0
	Cervical operation	2	2.0
	UTI	25	25.0
	Leaking in previous pregnancy	8	8.0
	Past cervical operation	3	3.0
	P.V. Exam	1	1.0
	Travelling	1	1.0
	Coitus	5	5.0
	Vaginitis	2	2.0
	Vaginosis	2	2.0
	Total	100	100.0

Among the predisposing factors, majority reported with PROM following the UTI (25%), followed by 8% with leaking in previous pregnancy, 5% with Coitus, 3% with past cervical operation.

**Table 6:** Showing the gravida of the patients

	Frequency	Percent	
Gravida	Multi	56	56.0
	Primi	44	44.0
	Total	100	100.0

Among the patients, 56% were multiparous and 44% were primiparous.

**Table 7:** Showing the management of patients

	Frequency	Percent	
Management	Acceleration of labour	43	43.0
	conservative	2	2.0
	Full term vaginal delivery	2	2.0
	Induction of labour	17	17.0
	Lower segment cesarean section	24	24.0
	Spontaneous delivery	12	12.0
Total	100	100.0	

The management of delivery was planned as 43% with acceleration of delivery, 24% with lower segment cesarean section, 17% with induction labour, 12% with spontaneous delivery and 2% as conservative.

**Table 8:** Showing the frequency of mode of delivery

		Frequency	Percent
Mode of delivery	Assisted breech delivery	1	1.0
	Forceps delivery	3	3.0
	Augmented labour	33	33.0
	Full term vaginal delivery	13	13.0
	Lower segment cesarean section	35	35.0
	Pre term vaginal delivery	14	14.0
	Ventouse delivery	1	1.0
Total		100	100.0

Among the mode of delivery, the study documented majority with 35% as Lower segment cesarean section, followed with 32% Full term pitocin accelerated Vaginal delivery, 14% with preterm vaginal delivery, 13% with Full term vaginal delivery and 3% with forceps delivery.

**Table 9:** Showing the indication of LSCS among patients

		Frequency	Percent
Indication for LSCS	Nil	65	65.0
	Breech	4	4.0
	Oligohydraminos	2	2.0
	Cephalopelvic disproportion	6	6.0
	Dysfunctional Labour	1	1.0
	Fetal Distress	6	6.0
	Failure to progress	8	8.0
	MSL	4	4.0
	Previous section	6	6.0
Total		100	100.0

On assessment of the indication of LSCS, majority documented with failure to progress in 8%, 6% with previous LSCS, fetal distress and Cephalopelvic disproportion and 4% with breech presentation.

### Discussion

The present study aimed to assess the risk factors and management options in patients with prelabour rupture of membrane. In present study total of 100 patients fulfilling inclusion criteria are included in present study after obtaining the informed consent. The age wise distribution of the patients found to be majority in age of 18-25yrs followed with 26-30yrs and more than 31yrs. The mean time of PV leak was found to be  $10.99 \pm 12.37$ hrs and time of pain in abdomen was seen in  $5.87 \pm 4.68$ hrs. Among the patients, 56% were multiparous and 44% were primiparous. The gestational status at the presentation was found to be 84% with full term pregnancy and 16% presented with preterm pregnancy.

Among the predisposing factors, majority reported with PROM following the UTI (25%), followed by 8% with leaking in previous pregnancy, 5% with Coitus, 3% with past cervical operation. Among the mode of delivery, the study documented majority with 35% as Lower segment cesarean section, followed with 32% Full term pitocin accelerated Vaginal delivery, 14% with preterm vaginal delivery, 13% with Full term vaginal delivery and 3% with forceps delivery. On assessment of the indication of LSCS, majority documented with failure to progress in 8%, 6% with previous LSCS, fetal distress and Cephalopelvic disproportion and 4% with breech presentation.

The current study found that the most common etiological variables for PROM among study participants were coitus, followed by a history of prior pregnancy leakage. The study also revealed that the most prevalent way of birth was a

lower segment caesarean section, with the cause of failure to proceed being one of them. The bulk of the maternal complications were puerperal fever and wound infection. The most common neonatal problems were respiratory distress syndrome and meconium aspiration.

### Conclusion

The present study documented the major etiological factors for PROM among study participants was following the UTI, followed with history of previous pregnancy leaving. The study also documented the common mode of delivery was lower segment caesarean section with cause of failure to progress among them. The maternal complication documented was majority with puerperal fever and wound infection.

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