

**ORIGINAL RESEARCH**

# A study on Fetomaternal Outcome in term Premature Rupture of Membrane

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**ABSTRACT**

**Introduction-** Premature rupture of membrane (PROM) is defined as the spontaneous rupture of amniotic membrane along with the leakage of amniotic fluid before the onset of true labour pain anytime after 28 weeks of gestation. This is an unpredictable condition associated with increased maternal /perinatal morbidity and mortality if not timely managed. **Aims and objectives-**To analyse and understand the outcomes in term pregnancy with PROM regarding the mode of induction, development of chorioamnionitis, puerperal sepsis, endometritis, PPH and interventions like operative deliveries / cesarean section. To analyse the perinatal outcome in term PROM cases. **Material and methods -** It is a prospective study conducted in Department of Obstetrics and Gynecology, Government Vellore Medical College. This study consists of an analysis of labour outcome in 200 cases presented with PROM after 37 completed weeks in one year. The data was collected and analysed. The descriptive statistics in terms of mean and proportion and inferential statistics by Chi square test, Fischer exact tests. **Results-** In this study, term PROM occurred in 61.5% of cases in the age group of 18 - 23 years. Most cases of PROM were booked cases (70.5%). PROM occurred in low SES of about 66.5% while its incidence in middle SES is 29.5%. Its incidence in primi is about 69.5% (133) while in multigravida accounts for about 33.5% (67). Most commonly PROM occurred in gestational age between 38 -39 weeks. In this study risk factors were assessed which included, GHTN (24.5%), anemia (15%) and polyhydramnios. While assessing these risk factors causing PROM, 50% of the study population had no risk factors. We received PROM 5% cases with duration of PROM less than 12 hours and 89.5% PROM cases with duration of greater than 12 hours, 5.5% greater than 24 hours. About 69% (138) delivered by labour natural, 28% (56) delivered by Emergency LSCS and 3% (6) got delivered by instrumentations. Hence labour natural being most common mode of delivery in our study. Among cervical swab culture sensitivity reports Only 33% of the cases were found to have growth in amniotic fluid culture, most common organism is E. coli (19%). Maternal complications occurred in about 18 cases (9%). Its incidence occurred in group with duration of PROM greater than 24 hours. Most common complications being Puerperal pyrexia and wound infection, which were treated with iv antibiotics. 20% of the infants born to PROM mothers had NICU admission for different complications. Out of which only 13 (6.5%) neonatal deaths occurred. In majority of cases neonatal death occurred due to RDS following septicemia. **Conclusion-** All women advised to have regular antenatal care and advise about diet, nutrition and personal hygiene should be given. Genital tract infection should be identified early and treated. Team approach, early recognition of prelabour rupture of membranes and their associated complication and appropriate management of situation helps in reducing the problems caused by PROM to a great extent.

**Keywords-** Premature Rupture Of Membranes, Lower Segment Caesarean Section, Chorioamnionitis.

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**INTRODUCTION**

Premature rupture of membrane (PROM) is defined as the spontaneous rupture of amniotic membrane along with the leakage of amniotic fluid before the onset of true labour pain after 28 weeks of gestation. PROM which occurs prior to 37 weeks of gestation is referred as preterm PROM (PPROM), whereas PROM, which occurs after 37 weeks of gestation, is referred as term PROM. The latent period is defined as the duration from rupture of the membranes until the onset of true labor (1).

Patient with PROM presents with leakage of fluid, vaginal discharge and pelvic pressure without any contractions. It occurs in 3 percent of pregnancies and is the cause of approximately one third of preterm deliveries. It can lead to significant perinatal morbidity, including respiratory distress syndrome, neonatal sepsis, umbilical cord prolapse, placental abruption, and fetal death. Appropriate evaluation and management are important for improving neonatal outcomes (2)(3).

**Etiology-** At term, fetal membranes undergo physical and biochemical changes such as increase in collagenolytic activity (breakdown of collagen) and apoptosis (programmed cell death) to lose their structure(4). One of the main causes of the PROM occurrence is infection (often bacterial infection) that stimulates the release of proinflammatory cytokines from decidua and amniotic membranes. Therefore, many bioactive materials, such as prostaglandins and metalloproteases are released. PG stimulate uterine contractions, and MMP cause cervical ripening, and ultimately cause the rupture of membrane(1).

**Risk factors** includes -Ascending bacterial infections, Increases intrauterine pressure, Race, Cervical insufficiency, Smoking, coitus, Antenatal interventions, Placenta previa ( minor degree ) and placental abruption, Genetic disorders like  $\alpha$ -1 anti trypsin deficiency , Ehler Danlos syndrome , Malpresentation and Malposition & Repeated per vaginal examination contributes to spreading of bacterial infection by direct inoculation of the microbes thereby facilitating PROM(5).

**Complications of PROM-** Fetal complications includes cord compression due to oligohydramnios due to PROM , cord entanglement and cord prolapse , Congenital pneumonia , sepsis and meningitis , Perinatal asphyxia , fetal distress and low apgar score, Intraventricular hemorrhage, Respiratory distress syndrome, Pulmonary hypoplasia, Long term sequelae like cerebral palsy.

Maternal complications includes Chorioamnionitis, Sepsis, abruptio placentae, PPH and retained placenta, increased rate of cesarean section, Endometritis and Recurrence.

**Diagnosis of PROM-** According to *NICE (2015, amended 2019)* guidelines, when a mother comes to casualty with complaints of draining pv , the consultant must do per speculum examination and look for collection of amniotic fluid in posterior fornix. In cases of presence fluid in posterior fornix (+), provide AN steroids , IV antibiotics , Expectant management as of preterm labour. In case of absence of collections, alternatives like placental alpha-microglobulin-1 (PAMG1) or IGF binding protein-1 test testing of the collected fluid done . [2015, amended 2019] If the above test found to be positive then patient's history , general condition and clinical feature should also be considered along with the test results and the following offered offer care consistent with the woman having P-PROM or Re-evaluate the woman's diagnostic status at a later time point. [2015].(6)

**Management Of PROM at TERM-** According to NICE guidelines (2007), offer the woman a speculum examination to determine whether the membranes have ruptured. Avoid digital vaginal examination, .Advise women presenting with PROM at term that risk of serious neonatal infection is 1%, rather than 0.5% for women with intact membranes. About 60% of women with PROM will go into labour

within 24hours. Induction of labour is appropriate approximately 24hours after rupture of the membranes.Until the induction is started or if expectant management beyond 24 hours is chosen by the woman: do not offer lower vaginal swabs and measurement of maternal C-reactive protein and to detect any infection that may be developing, advise the woman to record her temperature every 4 hours during waking hours and to report immediately any change in the colour or smell of her vaginal loss. Assess fetal movement and heart rate at initial contact and then every 24 hours after rupture of the membranes while the woman is not in labour, and advise the woman to report immediately any decrease in fetal movements. If labour has not started 24 hours after rupture of the membranes, advise the woman to give birth where there is access to neonatal services and to stay in hospital for at least 12 hours after the birth.

## AIMS AND OBJECTIVES

- 1) To analyse and understand the outcomes in mother with term PROM in terms of mode of induction , development of chorioamnionitis, puerperal sepsis , endometritis , PPH and interventions like operative deliveries & cesarean section ,
- 2) to analyse the perinatal outcome in term PROM cases in causing sepsis, intrapartum asphyxia and RDS (respiratory distress syndrome).

## MATERIAL AND METHODS

**STUDY DESIGN:** It is a prospective study conducted in Department of Obstetrics and Gynecology , Government Vellore Medical College . This study consists of an analysis of labour outcome in 200 cases with prelabour rupture of membrane after 37completed weeks .

**SAMPLE SIZE:** 200

**STUDY DESIGN** -Cross sectional study

**SAMPLING TECHNIQUE**-Convenient sampling

## STUDY POPULATION

### INCLUSION CRITERIA

- Gestational age >37weeks confirmed by dates , clinical examination or ultrasound.
- Cervical dilation <3cms
- Lack of uterine contraction for atleast 1 hour from PROM
- Single live pregnancy in vertex presentation
- PROM confirmed by either direct visualisation or fern / litmus test

### EXCLUSION CRITERIA

- Gestational age <37weeks
- Cervical dilation >3cms.
- Women in labour or with uterine contraction within one hour of rupture of membrane
- Previous cesarean section
- Malpresentation
- Multiple gestations

- Contracted pelvis , Cephalo-Pelvic Disproportion

**RANDOMIZATION DETAILS:** Non Randomized study Institutional ethical committee approval was obtained before the start of study. Written informed consent was obtained from each patient **SOURCE OF FUNDING** -Nil

#### **CONFLICT OF INTEREST**-Nil

**STUDY PROCEDURE-** A detailed history was taken including age, booking, socio-economic status, time of onset of draining, amount of fluid lost, its colour, odour, association with pain or bleeding per vagina and perception of fetal movements. Detailed obstetric and menstrual history was taken. In the obstetric examination -Height of uterine fundus, lie, presentation and position of fetus, engagement of presenting part, condition of uterus whether acting or relaxed, Uterine tenderness was looked for as a sign of chorioamnionitis. Fetal heart sound was auscultated and its rate, rhythm and tone were noted. A sterile speculum examination was done and the condition of vagina and cervix noted. Liquor draining from the OS was observed. The colour and smell of fluid was noted. If no fluid was seen, the lady was asked to cough and

drainage of fluid was looked for. The specimen was collected and subjected to litmus paper test and Fern test. Cervical swab was taken and sent for Gram stain and culture sensitivity. A single pelvic examination was done to note the Bishop's score, adequacy of pelvis, assessment of CPD and to rule out cord prolapse. Investigations like total count, differential count and C-reactive protein were done. Prophylactic antibiotics in the form of injection ampicillin 500 mg IV every 8 hours were given.

Depending upon the Bishop's score, labour was induced with prostaglandins or accelerated with oxytocin. The labour of each case was closely monitored.

**STATISTICAL METHODS APPLIED-**  
Frequencies and percentages  
Chi-Square test and fisher exact test

#### **RESULTS**

**Age of the participants:** The mean (SD) age of participants is 23 years (4 years). About 61.5% are in 18-23 years, 31% are in 24-29 years, 7.5% are in 30-35 years of age.

S. No	Age category	Number	Percentage
1	18-23 years	123	61.5%
2	24-29 years	62	31%
3	30-35 years	15	7.5%
	Total	200	100%
Mean		23 years	
SD		4 years	

**Booking status:** About 70.5% are in B category and 29.5% are in UB category.

S. No	B/UB	Number	Percentage
1	B	141	70.5%
2	UB	59	29.5%
	Total	200	100%

**Socioeconomic status:** About 66.5% are in Low SES and 33.5% are in Middle SES.

S. No	SES	Number	Percentage
1	Low	133	66.5%
2	Middle	67	33.5%
	Total	200	100%

**Obstetric code:** About 66.5% are in Primi and 33.5% are in Multi.

S. No	Obstetric code	Number	Percentage
1	Primi	133	66.5%
2	Multi	67	33.5%
	Total	200	100%

**Gestational age:** Most commonly occurred in gestational age between 38 -39 weeks (44.5%) followed by >40 weeks gestational age

S.No	Gestational age	No of patients	Percentage
1	37 -38 wks	61	30.5%
2	38 -39 wks	89	44.5%
3	>40 wks	50	25%

**Duration of PROM:** The mean (SD) duration of ROM is 7 hours (3 hours). About 96% are with ROM for <12 hours and 4% are with ROM >12 hours

S.No	ROM	Number	Percentage
1	<12 hours	192	96%
2	>12 hours	8	4%
	Total	200	100%
Mean	7 hours	SD	3 hrs

**Bishop score, Induction delivery interval, PROM delivery interval:** The mean (SD) BS of participants is 3.6 (1.1). The mean (SD) IDI of participants 11.4 (3.6). The mean (SD) PDI of participants is 18.3 (4.3).

S.No	Variable	Mean	SD
1	BS	3.6	1.1
2	IDI	11.4	3.6
3	PDI	18.3	4.3

**Induction delivery interval:** About 5.5% had <6 hrs, 60.5% had between 6 to 12 hours, 34% had more than 12 hours

S. No	Category	Number	Percentage
1	<6 hours	11	5.5%
2	6-12 hours	121	60.5%
3	>12 hours	68	34%
	Total	200	100%

**PROM delivery interval:** About 5% had <12 hrs, 89.5% had between 12 to 24 hours, 5.5% had more than 24 hours

S. No	Category	Number	Percentage
1	<12 hours	10	5%
2	12-24 hours	179	89.5%
3	>24 hours	11	5.5%
	Total	200	100%

#### Comparison of PDI and Mode of Delivery

Table : Comparison of PDI and mode of delivery			
PDI	Mode of delivery		
	NVD	LSCS	Instrumental
<12 hours	100%	0%	0%
12-24 hours	69.8%	26.8%	3.4%
>24 hours	27.3%	72.7%	0%
p value 0.005 – Significant association is present (Fischer exact test)			

**Mode of Delivery:** About 69% had normal vaginal delivery, 28% had LSCS and 3% had instrumental delivery. Among the causes for LSCS and instrumental delivery, FD and FP are the most common indications.

S. No	Mode of delivery	Number	Percentage
1	Normal Vaginal Delivery	138	69%
2	LSCS	56	28%
3	Instrument	6	3%
	Total	200	100%

**Mode of induction:** Most common mode of induction used is oxytocin.

Mode of Induction	No of patients	Percentage
Spontaneous	26	13%
Oxytocin	69	34.5%
PGE2 gel	38	19%
Misoprostol	67	33.5%

**Maternal risk factors:** 50% of women had no risk factors. 24.50% of patients had GHTN, 15% had associated Anemia 5.5% had Polyhydramnios as risk factors.

Risk factors	Numbers of patients	Percentage
Nil	100	50%
Previous history	2	1%
GHTN	49	24.5%
Anemia	30	15%
GDM /Polyhydramnios	11	5.5%
UTI	8	4%

**Maternal complications:** About 9% had complications. Among the complications, fever is the most common presentation.

S. No	Complications	Number	Percentage
1	Yes	18	9%
2	No	182	91%
	Total	200	100%
	Fever	15	

**Neonatal complications:** About 21% had complications. Among the complications, birth asphyxia is the most common presentation.

S. No	Complications	Number	Percentage
1	Yes	42	21%
2	No	158	79%
	Total	200	100%
	Birth asphyxia	15	

#### Investigations - Cervical swab and CRP

About 34.5% are CRP Positive. About 33% are Cervical swab positive.

In the swab positive Cases, E.coli is the most Common organism detected.

S. No	Investigations	Number	Percentage
1	Swab positive	66	33%
2	CRP	69	34.5%
	Organism seen in swab		
	E.coli	35	

#### Reason FOR NICU admission

Reason for NICU admission	No of infants	Percentage
RDS	31	77.5%
Sepsis	9	22.5%



**Cause for neonatal death**

Causes for neonatal death	No of infants	Percentage
Sepsis	7	53.8%
RDS	4	30.7%
Both	2	15.3%

**Comparison of various factors with maternal outcomes**

Factor	Favourable outcome N=182	Unfavourable outcome N=18	p value
Age	23±4	22±4	0.23
ROM	6.9±2.7	8.5±4.9	0.04*
BS	3.6±1.1	3.3±1	0.3
IDI	11.2±3.6	12.9±3	0.06
PDI	18±4.1	21.1±5.1	0.003*
B	92.2%	7.8%	0.36
UB	88.1%	11.9%	0.36
SES – Low	90.1%	9.9%	0.4
SES - Middle	94%	6%	0.4
Multi	94%	6%	0.433
LSCS	76.8%	23.2%	0.001*
*p <0.05 – Indicates that there is a significant difference between the factor and the outcome			

The above table shows the comparison of various factors with maternal outcome using the chi square test, fisher exact test and t test. P value of <0.05 is considered significant association between the factor and outcome. Multivariate logistic regression of variables age, ROM, SES, Mode of delivery showed that LSCS had effect on maternal complications (p 0.001).

**Comparison of various factors with neonatal outcomes**

Factor	Favourable outcome N=158	Unfavourable outcome N=42	p value
Age	23.2±3.8	21.8±3.4	0.03*
ROM	6.8±2.6	8±4	0.03*
BS	3.6±1.1	3.3±1	0.09
IDI	11.0±3.6	12.7±3.3	0.009*
PDI	17.7±4.2	20.1±4.1	0.001*
B	80.1%	19.9%	0.54
UB	76.3%	23.7%	0.54
SES – Low	76.5%	23.5%	0.32
SES - Middle	85.1%	14.9%	0.32
Primi	71.4%	28.6%	0.001*
LSCS	50%	50%	0.001*
Instrument delivery	33.3%	66.7%	0.001*
Birth weight	2.7±0.3	2.8±0.3	0.18
APGAR at 1 min	6.5±0.5	5.5±0.5	0.001*
APGAR at 5 min	7.5±0.5	6.6±0.5	0.001*
*p <0.05 – Indicates that there is a significant difference between the factor and the outcome			

The above table shows the comparison of various factors with neonatal outcome using the chi square test, fisher exact test and t test. P value of <0.05 is considered significant association between the factor and outcome. Multivariate logistic regression of variables age, ROM, SES, Mode of delivery, Birth weight and APGAR score at 1 min & 5 min showed that Obstetric code, Mode of delivery, APGAR score had effect on Fetal complications (p <0.05).

**DISCUSSION**

Premature rupture of membranes is a obsolete complication of pregnancy when encountered leads to increased maternal complications, operative procedures, maternal mortality and morbidity, neonatal morbidity and mortality.

**Age group**

In the present study, 200 patients admitted with PROM were evaluated. In this study, PROM was present in

61.5% of cases in the age group of 18 to 23 years. Similar results were obtained in a study conducted by Akter et al<sup>7</sup>(40.33%).

### Booking status

In our study most cases of PROM occurred in booked cases which accounts for about 70.5% whereas in unbooked cases its occurrence is 29.5%. These results are comparable to a study conducted by Shwetha Patil et al.,<sup>8</sup> where the percentage of unbooked cases was accounting to 31% and booked cases to 69%. There was no significant correlation between the antenatal care and incidence of PROM which was in contrast to a study done by Shweta Anant Mohokar et al<sup>9</sup> where there was a strong correlation between the unbooked cases (84%) and the incidence of PROM. The unbooked cases receive poor antenatal care that ultimately leads to increased risk of infection to the mother which is a major risk factor for PROM.

### Socioeconomic status

In our study most common incidence PROM occurred in low socioeconomic status of about 66.5% while its incidence in middle SES is 29.5%. which is comparable with the study conducted by Swathi Pandey et al<sup>10</sup> which is 61%. Studies have shown a correlation between low socio-economic status and defects in the amniotic membrane. The factors that lead to PROM in low socio-economic status include poor hygiene, malnutrition, anemia, stress, over exertion, high parity, recurrent genitourinary infections etc. These factors lead to a decreased antibacterial activity in the amniotic fluid of patients that in turn leads to PROM. The major factor that leads to an increase in cases of PROM among mothers belonging to low socio-economic status is malnutrition. Malnutrition in turn leads to increased risk of infections that eventually leads to PROM. Hence the cause of PROM involves a vicious cycle of malnutrition and infections.

### Obstetrics score

Its incidence in primi is about 69.5%(133) while in multigravida accounts for about 33.5%(67) In a study conducted by Swathi Pandey et al<sup>10</sup> (multigravida 48% and primigravida 52%) similar results were obtained. But actually multiparity is a risk factor for PROM due to long standing infection, trauma to cervix and patulous os. The Assefa study in Ethiopia showed a similar result to this study that the gravida is not a risk factor associated with PROM<sup>11</sup>.

### Gestational age and maternal risk factors

Most commonly PROM occurred in gestational age between 38 -39 weeks which accounts about 44.5% followed by >40 weeks gestational age. In a study conducted by Shweta Patil et al.,<sup>8</sup> the percentage of PROM was 75% between 35-36 weeks of gestational age, whose results correlate with the present study which implies that the risk of PROM increases with increasing gestational age. This can be

justified with the fact that PROM occurs due to mechanical stretching of membranes with increasing gestational age. At term gestational age, the fetus that is conceived gets bigger which causes greater intrauterine pressure and the membrane weakens so it can be causing premature rupture of the membranes. In our study maternal risk factors like PIH (24.5%), anemia(15%) and polyhydramnios were present. Assessing the risk factors causing PROM, 50% of the study population had no risk factors. Gunn et al.<sup>12</sup> also showed similar results in his study where PIH was the most common risk factor. The risk factors of PROM include prior preterm birth, cigarette smoking, polyhydramnios, urinary and sexually transmitted infection, prior PROM, work during pregnancy, low Body Mass Index, bleeding, low socioeconomic status. In the present study, In 5% of the study population the latency period was less than 6 hours, 89.5% had latent period between 12 -24 hours which was similar to the results obtained in a study conducted by Shweta Patil et al.,<sup>8</sup> (64%). Only 5.5 % had a latent phase of 24 hours, The duration of the latency period was inversely related to the gestational age at PROM. Among our patients who delivered vaginally, 13% went into spontaneous labour, while induction was done to the rest of 87%. Out of the 87% of the patients induced, 33.5% were induced with misoprostol and 19% induced with cerviprime gel and rest 34.5% were induced with oxytocin. Meta analysis of recent trials also shows a tendency for a reduced caesarean section rate with the use of vaginal prostaglandins compared with oxytocin at 37 + weeks (Hannah 1993)<sup>13</sup>.

### Duration of PROM

In our study of 200 total cases we received PROM 5% cases with duration of PROM less than 12hours and 89.5% PROM cases with duration of greater than 12hours, 5.5% greater than 24hours. Several studies show that latency beyond 24 hours increases the incidence of chorioamnionitis and neonatal sepsis. Spontaneous labour occurs in 60%–67% of these patients within 24 hours. If no labour occurs, labour induction seems to be the optimal strategy for women with PROM at term. In 2009, the American College of Obstetricians and Gynecologists recommended using oxytocin for induction of labour in case of PROM at term, even if the cervix is unfavourable. Several other labour-inducing options are available, including prostaglandin, misoprostol and Foley catheters; however, none of these approaches demonstrates superiority over oxytocin in inducing labour, even when the cervix is unfavourable<sup>14, 15, 16</sup>.

### Mode of delivery

In our study material, about 69%(138) delivered by labour natural, 28%(56) delivered by Emergency LSCS and 3%(6) got delivered by instrumentations.. Hence labour natural being most common mode of delivery in our study especially those who presented with favourable bishop score and multigravidas. This

is similar to findings of Swathi pandey et al<sup>10</sup> and contrary to findings of Jayaram VK et al<sup>17</sup> who reported an incidence of 31.5% of LSCS in their studies.

Failure to progress, failed induction and fetal distress were found to most common indicated for emergency LSCS in our study. In studies conducted by Swathi Pandey<sup>10</sup> and Singhal<sup>19</sup> fetal distress was the most common indication for LSCS.

### Birth weight

Since our study included term cases most cases of about 85.5% newborns had birth weight more than 2.5 kg and 14.5% less than 2.5 Kg. These results obtained were nearly similar to the results in the study by Swetha Anant Mohokar et al.,<sup>9</sup> where 26% gave birth to babies weighing 2- 2.5kg.

### Cervical swab

Amniotic fluid culture sensitivity was done in all the patients and there was no growth in cultures in 67% of them. Among the 33% of the positive cases, most common organism is E.coli (19%), others were klebsiella (5.5%) and S. aureus (6.5%) isolated. The commonest organism isolated by Swathi Pandey<sup>10</sup> in cervical swab was E. coli.

### Maternal complications

In our study among 200 cases, maternal complications occurred in about 18 cases (9%). Its incidence occurred in group with duration of PROM greater than 24 hours. Most common complications being Puerperal pyrexia and wound infection, which were treated with iv antibiotics.

A study by Artal K<sup>20</sup> showed the incidence of puerperal pyrexia to be 13% and chorioamnionitis to be 3%. Chorioamnionitis occurs frequently in patients with PROM and monitoring of the patient is directed at the early recognition of infection. The overall incidence of chorioamnionitis ranges from 4.2% to 10.5%.

When we compared the draining duration interval with presence of significant impact on the maternal complication, where longer the interval higher the complications. This was statistically significant too (p value – 0.001). It was observed in our study that as the duration of PROM to delivery increases there is an increased risk of development of maternal and neonatal morbidity which is similar to the findings of Thakor U et al<sup>18</sup> in their study.

### NICU admission

In my study 20% of the babies born to PROM mothers were admitted in NICU for various complications in my study. APGAR score was below 6 in 14% of babies in my study. These results correlated with Shweta Patil et al.,<sup>8</sup> where the percentage of NICU admissions was 36%.

Out of the 20% babies admitted, the most common cause for neonatal morbidity was respiratory distress

syndrome (74.5%), followed by septicaemia (22.5%), jaundice (3.5%), which is similar to findings of Noor S et al<sup>19</sup> and contrary to findings of Kifah Al et al<sup>20</sup> who reported higher rates of morbidity and mortality in his study. The study conducted by Arul Kumar showed that after 32 weeks of gestation the common causes of perinatal morbidity were RDS, perinatal asphyxia and infection, but with good supportive neonatal care most of the infants can survive. Draining to delivery interval was also correlated and there was statistically significant correlation with longer duration of draining delivery interval.

### Neonatal death

Out of 200 cases, 13 (6.5%) neonatal deaths were seen. A study by Swetha Anant Mohokar<sup>9</sup> showed 15% mortality among neonates. The most common cause of neonatal death being sepsis followed by respiratory distress syndrome. We also analysed the impact of draining to delivery interval on neonatal death where most of neonates died where in interval more than 24 hours group. Although the major causes of neonatal death associated with PROM include infection, pulmonary hypoplasia, cerebral palsy.

### CONCLUSION

PROM is associated with maternal morbidity and perinatal morbidity and mortality, PROM is more common in primi.

Hence health education should be given to all primi regarding importance of PROM and seeking health care facilities earlier. Genital tract infection should be identified early and treated.

PROM is more common in low economic status, malnutrition. All women advised to have regular antenatal care and advise about diet, nutrition and personal hygiene should be given.

Most common of delivery in our study was labour natural, so PROM is not an indication for LSCS.

So the patients and attenders should be counselled regarding advantages of labour natural.

Most common cause of neonatal death was neonatal sepsis. In order to reduce sepsis rate antibiotics-Inj. ampicillin 1g IV every 8 hours to all patients presenting with PROM should be started, should avoid frequent per vaginal examination, clean delivery surfaces.

Combined effect of neonatologist and obstetrician is necessary for reducing perinatal morbidity and mortality.

Thus a team approach, early recognition of prelabour rupture of membranes and their associated complication and appropriate.

Management of situation helps in reducing the problems caused by PROM to a great extent.

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