STUDY OF MATERNAL AND PERINATAL OUTCOME IN PREMATURE RUPTURE OF MEMBRANE AT TERM PREGNANCY

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ABSTRACT

PROM is one of the commonest obstetric complications and has a diverse aetiology and management policies and is associated with increased maternal and foetal morbidity. Hence, induction of labour was done for early delivery. Many methods have been adapted from times immortal for induction of labour. PROM is an obstetric conundrum which is poorly defined with an obscure aetiology, difficult to diagnose and is associated with significant maternal and neonatal morbidity and mortality and management strategies that are often diverse and controversial. So the present study is to analyse the maternal and perinatal outcome in premature rupture of membranes at term.

KEYWORDS

Premature Rupture of Membrane, Maternal and Perinatal Outcome.

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INTRODUCTION

Premature Rupture of Membranes is an enigmatic condition associated with high risk of maternal and Perinatal Morbidity and Mortality.

PROM is characterized by rupture of membranes before the onset of true labour. This occurs in 5-20% of all labours. Indian studies (Bhalerao and Desai, 2000; Bhide, 2001) report an incidence of PROM in 7-12% of all labours; 70% of the cases it occurs in pregnancies at term. These women are prone to cord compression/cord prolapse and higher risk of infection. The longer the time interval between rupture of membranes and onset of labour, the greater the risk of ascending infection and chorioamnionitis.

Kappy and Khuppel (1979) defined PROM as rupture of the membranes with at least 2 hours of latent period before active labour. PROM is one of the most common complication of pregnancy occurring in about 10% of all births. Incidence of PROM: it is variable. According to Gunn et al. (1970), it varies between 2-18%. Bourgeois et al. (1988) gave an incidence of 7.35%. Aktar et al. reported an incidence of 3.3% in the study by Swati Pandey (2000), it was 7.71%. Duff P. (1991) said that the incidence of PROM varies between 8-10%; 60-80% of cases of PROM occur at term (Alien 1991). According to Grant and Kierse (1989).^{1,2,3}

PROM occurs in 3-10% of term deliveries. Incidence of PPROM ranges from 0.7 to 2.1% and accounts for 20-40% cases of PROM before 37 weeks. According to Graham et al., PPROM occurs in 2% of cases. It is the commonest cause for preterm labour and 10% of perinatal deaths; 80% of term PROM patients begin labour within 24 hours and 95% within 72 hours; 10-25% will have a latent period of more than 24 hours and 2-5% remain undelivered after 72 hours.

In the foetus there is increased occurrence of hyaline membrane disease, intraventricular haemorrhage, sepsis, cord prolapse, foetal distress. Thus, earlier the gestational age at the time of PROM, longer is the latency and more the complication. Almost 80% of patients close to term with PROM begin labour within 24 hours and 95% delivered within 72 hours. Infection, cervical incompetence, trauma, APH, hydramnios, multiple gestation and coitus in pregnancy contribute to PROM. It is often not possible to pinpoint the exact cause in an individual case.

Jiwane (1991) observed that the incidence of PROM increased 4.4 fold in women undergoing routine pelvic examination in the third trimester of pregnancy. Kodkany and Telang (1991) observed that coitus in the last trimester led to a six fold increase in PROM.⁴

METHODOLOGY

This study consists of an analysis of labour outcome in 100 cases with premature rupture of membranes after 37 completed weeks.

This study was done at Government Hospital between the period June 2014 and June 2015. Cases were selected by using simple random sampling techniques.

Inclusion Criteria

1. Gestational age of >37 weeks confirmed by dated, clinical examination or ultrasound.
2. Cervical dilatation of <3 cms.
3. Lack of uterine contractions for at least 1 hour from PROM.
4. Single live pregnancy in vertex presentation.
5. PROM confirmed by direct visualization or Litmus.

Exclusion Criteria

1. Gestational age of <37 weeks.
2. Cervical dilatation of >3 cms.
3. Women in labour or with uterine contractions within 1 hour of rupture of membrane.
4. Previous caesarean section.
5. Malpresentations and multiple gestations.

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Note

Complication like contracted pelvis, cephalopelvic disproportion, multiple pregnancy and malpresentations were excluded from study.

Depending upon the Bishop's score, labour was induced with prostaglandins or accelerated with oxytocin. Time of induction was noted. The labour of each case was closely monitored. Induction to delivery interval and PROM to delivery interval were noted.

If there was any evidence of fetal jeopardy or any other obstetrical complications, labour was cut short by instrumental delivery or caesarean section as required. Following facts were noted soon after delivery: Apgar score at 1 and 5 minutes, birth weight, sex, congenital anomalies, immediate complication and birth injuries, signs of asphyxia, meconium aspiration, sepsis and other associated complications were recorded. Mothers were watched for third stage complications like PPH and retained placenta. They were followed up in puerperal period.

OBSERVATIONS AND RESULT

Age in Yrs.	No.	Percentage
15-19	13	13
20-24	64	64
25-29	17	17
30-34	5	5
>35	1	1

Antenatal Care	No.	Percentage
Booked	24	24.0
Unbooked	76	76.0

Gravida	No.	Percentage
Primi	63	63.0
Multi	37	37.0
Total	100	100.0

In the study by Anjana Devi, 52% were booked in the PROM group compared to 63% in control group. The risk of PROM in unbooked cases was statistically significant.⁵ In the present study, 63% were primigravidas and 37% were multigravidas. The percentage of primigravidas was higher.⁶

Time between PROM to Admission

As the duration of PROM increases, problems in the mother and the baby also increase. In the study by Umed Thakur, the duration from PROM to admission was 12.06±6.04 hours. In the study by Anjana Devi, the duration of PROM ranged from 3 hours to 5 days, mean being 16 hours.^{7,8}

In the present study the minimum duration of PROM was 2 hours and maximum was 72 hours, mean duration being 9.6 hours.

Mode of Delivery

Mode of Delivery	Anjana Devi	Singhal	Kamala J	Piya Ray	Present Study
LSCS	45.2%	49.0%	15.0%	8.3%	30.0%
VD	45.3%	49.0%	74.0%	81.7%	66.0%
Instrumental delivery	12.5%	2.0%	11.0%	10.0%	4.0%

Swati Pandey showed 31% rate of caesarean section in the study group and 12% in the control group. In the present study 30% has caesarean section, being comparable to the

study by Swati Pandey. Rate of caesarean section was higher in the studies by Anjana Devi and Singhal and lower in the studies by Piya Ray and Kamala Jayram compared to the present study.^[9,10]

Morbidity	Anjana Devi	Singhal	Present Study
Febrile Morbidity	20.19%	17.5%	15.0%
PPH	1.92%	1.5%	1.0%

In the present study, maternal morbidity was 23%.

In study by Sanyal, perinatal morbidity was 32% and mortality was 5%; Kodkany perinatal morbidity was 39.8% among which birth asphyxia was responsible for 29.5%.

In Anjana Devi's study, perinatal mortality rate was 4.8%. In Piya Ray's study, it was 2.5%. In the present study perinatal morbidity was 28% and mortality rate was 3.0%.

DISCUSSION

PROM is an enigmatic condition associated with high risk of maternal morbidity, perinatal morbidity and mortality. It complicates 5-10% of all pregnancies. Complication increase with decrease in gestational age and increase in the latent period. In the present study, the rate of caesarean section was 30%. Maternal morbidity was seen in 23%. Febrile morbidity being the commonest accounting for 15%. Perinatal morbidity was seen in 28% of cases. Birth asphyxia was the commonest cause for perinatal morbidity. The perinatal mortality rate was seen in 3.0%. Early recognition of genital tract infection should be done and treated appropriately. Women should be educated about the possibility for PROM and the need to report at the earliest. A combined effort of obstetrician and neonatologist is necessary. Early recognition of premature rupture of membranes and their associated complications and appropriate management of situation helps in reducing the problems caused by PROM to a great extent.

ABBREVIATIONS

- B/UB - Booked/Unbooked.
- BS - Bishop's score.
- DTA - Deep Transverse Arrest.
- FD - Fetal Distress.
- FP - Failure to Progress.
- H - Healthy.
- IDI - Induction to Delivery Interval.
- IP Sep - Intrapartum Sepsis.
- LP - Latent Period.
- LSCS - Low Segment Caesarean Section.
- Ob Sc - Obstetric score.
- PDI - PROM to Delivery Interval.
- PNM - Perinatal Mortality.
- Pr II St - Prolonged Second Stage.
- Pr PROM - Prolonged PROM.
- Sec ar de - Secondary arrest of descent.
- Sec ar di - Secondary arrest of dilation.
- VD - Vaginal Delivery.

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