Original Research Paper

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A CLINICAL STUDY OF MATERNAL AND FETAL OUTCOMES IN CASES OF PRETERM PREMATURE RUPTURE OF MEMBRANES

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ABSTRACT

Introduction: reterm premature rupture of membranes (PPROM) occurs in 3% of pregnancies and is responsible for approximately one third of all preterm births .The incidence of preterm premature rupture of membrane averages from 0.7 to 2.1% and accounts for about 20 to40% cases of PROM before 37 weeks of gestation. **Aim and objectives:** To study maternal and perinatal outcome in patients with preterm premature rupture of membranes **Material and methods:** The present study on "Maternal and Perinatal outcome in cases of preterm premature rupture of membranes (pPROM)"was conducted in the Department of Obstetrics and Gynaecology, MGM Medical college, Kishanganj, Bihar **Result :** 44% women were admitted to hospital within 6 to 11 hours of PROM. 34% women were admitted within 5 hours of PPROM. Furthermore, 46.7% of women were admitted within 24-47 hours of PPROM. Therefore, it can be interpreted that majority of the women were admitted to hospital at the earliest of PPROM. **Conclusion:**

KEYWORDS

Obesity, maternal outcome, neonatal outcome, BMI

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INTRODUCTION

Preterm premature rupture of membranes is defined as spontaneous rupture of amniotic membranes before the onset of uterine contractions or prior to the onset of labour after the age of viability and before 37 completed weeks (36weeks+6days).

Preterm premature rupture of membranes (PPROM) occurs in 3% of pregnancies and is responsible for approximately one third of all preterm births .The incidence of preterm premature rupture of membrane averages from 0.7 to 2.1% and accounts for about 20 to 40% cases of PROM before 37 weeks of gestation.

Preterm premature rupture of membrane complicates about 2-4% of singletonpregnancies and 7- 20% of twin pregnancies, it is associated with 60% preterm deliveries and 10% of perinatal death.

Preterm PROM is an important cause of perinatal morbidity and mortality mainly due to prematurity and its sequelae. Perinatal infection, increased incidence of hyaline membrane disease, intraventricular hemorrhage, sepsis, cord prolapse, umbilical cord compression resulting from oligohydramnios, fetal distress further compromises the outcome and there is increased fetal wastage.

Maternal morbidity is increased because of chorioamnionitis, unfavourable cervix, dysfunctional labour, increase in caesarean rates, postpartum hemorrhage and endometritis.

The longer the time interval between the rupture of membranes and onset of labour,greater is the risk of ascending infections and chorioamnionitis. This risk may assume grave prognosis in patient undergoing ceaserean section.

Thus, earlier the gestational age at the time of PPROM, longer the latency and more is the complications. In planning the management, several issues need to be considered. Prematurity is the principal risk to the fetus while infectious morbidity is the primary maternal risk.

Chorioamnionitis with PPROM is responsible for significant maternal and neonatal morbidity including early onset neonatal sepsis, bronchopulmonary dysplasia, intraventricular haemorrhage and periventricular white matter injury.

PPROM is an obstetric conundrum with significant maternal morbidity and neonatal morbidity and mortality, a careful consideration of various factors and individualization of cases is necessary for appropriate management.

The present study is undertaken to know the current trends of fetal and maternal outcome associated with PPROM so that increased attention will be diverted to the important causative factors and fetomaternal outcome can be improved

AIM OF THE STUDY

1. To study maternal and perinatal outcome in patients with preterm premature rupture of membranes
2. To find out the maternal and perinatal morbidity and mortality trends in preterm premature rupture of membranes

MATERIAL AND METHODS

The present study on "Maternal and Perinatal outcome in cases of preterm premature rupture of membranes (pPROM)"was conducted in the Department of Obstetrics and Gynaecology, MGM Medical college, Kishanganj, Bihar

The study group includes patients admitted with pPROM under the Department of Obstetrics and Gynaecology, MGM medical college, Kishanganj , Bihar during September 2020 to September 2021

Inclusion criteria:

All pregnant women with a singleton pregnancy between 28-37 weeks of gestational age with preterm premature rupture of membranes.

Exclusion criteria:

1. Multiple pregnancies
2. Intrauterine growth restriction
3. Uterine anomalies
4. Foetal anomalies

Ultrasonography was done to assess gestational age, growth parameters, presentation, exclusion of congenital anomalies and liquor columns for amniotic fluid index.

Conservative management was done in all early PPROM (28weeks to

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33weeeks+6days) patients till the onset of spontaneous labour or till the maternal or fetal indication for delivery ensues such as chorioamnionitis, meconium stained amniotic fluid, abruption, cord prolapse, fetal distress and/or advanced labour on admission.

All late PPROM (>34weeks) patients were induced if not getting into spontaneous labour. Patients were hospitalized until delivery & were advised bed rest. Two doses of betamethasone 12 mg I.M 12 hours apart or Dexamethasone 6mg 12 hrly 4 dosage were given to the mothers <34 weeks to enhance fetal lung maturity. Prophylactic antibiotics were used in all cases for ten days or up to delivery

RESULTS

The primary aim of this report is to study the maternal outcome in patients with PPROM in view of chorio amnionitis, mode of delivery and also to study the perinatal outcome in patients with PPROM at term in view of septicemia, RDS and birth asphyxia. A total of 150 patient data was collected and analyzed in R software.

Table 1: Age distribution of patients

Age(Year)	Frequency	Percentage
20-25	36	24
26-30	70	46.67
31-35	35	23.33
>35	9	6
Total	150	100

The above table indicates the distribution of the patients. It can be viewed that almost half of the women (46.67%) comes in the age category 26-30 years. Around 94% of the women fall below the age of 35 years and only 6 % of women had age group >35 years. The mean age was 26.64 with the standard deviation of 4. 33ears.

Table 2: Frequency table of Time between PROM to Admission of study subjects

Time between PPROM to Admission of study subjects	Frequency	Percentage
0-5	51	34
6-11	66	44
12-23	23	15.33
24-47	7	46.7
47-73	3	2

Table 2 indicates the frequency Latent period of study subjects. It can be viewed from the table that 74.66% women were delivered with in 24 hours of PPROM. Only 2.6 % of patients were delivered after 72 hrs and rest of 34% were delivered between 25-72 hrs.

Fig 1: Frequency table of Latent period of study subjects

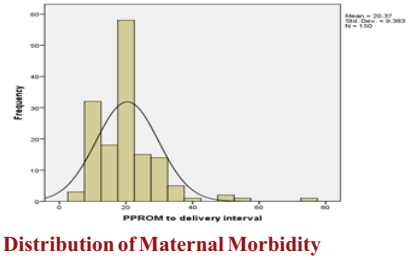


Figure 2: Distribution of Maternal Morbidity

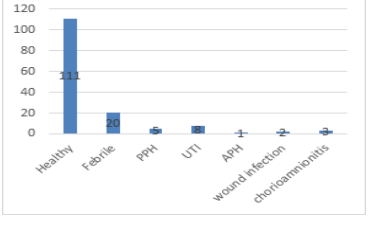


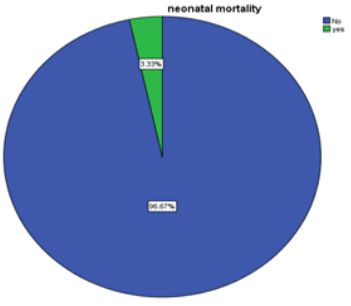
Fig 1 indicates the frequency of time between PPROM to Admission of study subjects. It can be viewed from the table that 44% women were admitted to hospital within 6 to 11 hours of PROM. 34% women were admitted within 5 hours of PPROM. Furthermore, 46.7% of women were admitted within 24-47 hours of PPROM. Therefore, it can be interpreted that majority of the women were admitted to hospital at the earliest of PPROM.

Table 3: Distribution of neonatal Morbidity

Neonatal Morbidity	Frequency	Percentage
Healthy	108	72
Birth asphyxia	18	12
Jaundice	18	12
Septicemia	6	4

Table 3 indicates the frequency table of neonatal morbidity. The 72% were healthy. Birth asphyxia was seen in 12% patients, Jaundice in 12 % and septicaemia was seen in 12% subjects.

Fig 3: Distribution of study subjects as per neonatal mortality



Discussion

Age

A hospital based observational, prospective study was conducted with 150 patients to evaluate the maternal and fetal out comes in pprom cases.

In the present study almost half of the women (46.67%) comes in the age category 26-30 years similar to study of Akter at al(4)., (40.33%).Our mean maternal age was 26 years in contrast to study of Dr. Beenish Ashraf et al (2018)(5) and Dagne Addisu et al (2021)(6)where the mean maternal age was found to be 31 years and 29.76 years respectively. This could be due to early age of marraige and child bearing in our locality

In the present study 46.7% of women were admitted within 24-47 hours of PPROM, 44% within 6 to 11 hours of PPROM and 34% within 5 hours similar to study of study by Umed Thakor duration was 12.06±6.04 hours and 16 hours.

In our study majority of the women(74.66%) women were delivered within 24 hours of PPROMsimilar to the study of Shweta Patil et al.,(7) (64%) and also in a study conducted by Russels (80%)(8). Only 11% had a latent phase of >3days, 28.5% delivered within 25-72 hours in my study which also correlated with the above-mentioned studies.

In the present study 10% were febrile ,4 % were having UTI, 2.5% had PPH, 1.5% had chorioamnionitis, 1% had wound infections.

In a study byDagne Addisu et al (2021)(6), Reeti Rajanet al (2016)(9), V. Dusingizimanaet al (2019)(10), maternal morbidity corresponds to , UTI (20%), UTI (18%) and Febrile (14%) respectively.

In the present study 72% were healthy. Birth asphyxia was seen in 12% patients, Jaundice in 12 % , septicaemia was seen in 4% of the subjects and 3.33 neonatal death.

In studies by Poovathi M. et al (2018)(11), Céline Petit et al (2018)(12) and Reeti Rajanet al (2016)(9) 10%, 2.1% neonatal deaths and 24% of neonates developed respiratory distress, 25% had sepsis, 10% had birth asphyxia, 19% had neonatal jaundice, 3% had NEC, 0.5% had IVH and 2% had congenital pneumonia respectively. By Swapna Mohanaet al (2018)(13) severe RDS (43%) and sepsis (24%) andSwetha Anant Mohokar(14) showed 15% mortality among neonates.

Conclusion

Overall, In spite of having immense improvements in the field of

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obstetrics, especially in neonatal care, the neonatal survival rate remained only moderately high whose pregnancies were complicated by PPROM. Also, the outcome was even worse when it comes to low birth weight babies (1500g or below), However, on the other hand, the maternal outcome of PPROM was reassuring, and no maternal death was reported in this retrospectively designed study. the maternal outcome was overwhelmingly positive in terms of maternal mortality rates. But even so, further studies of longer duration with much larger study population are needed to see the long-term implications of PPROM in both the newborns and the mothers

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