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MATERNAL AND PERINATAL OUTCOME IN PRETERM PRELABOR RUPTURE OF MEMBRANES

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Abstract:

Introduction: *Preterm premature rupture of membranes (PPROM) occurs in 3% of pregnancies and is responsible for approximately one third of all preterm births.* ***Objectives of the study****: The main objective of the study is to analyze the maternal and perinatal outcome in preterm prelabor rupture of membranes.* ***Material and methods:*** *This cross sectional study was conducted in Ganga Ram Hospital, Lahore during June 2019 to January 2020.Patients admitted in Obstetrics and Gynaecology UniI through outpatient & casualty department with gestational age between 24 to 37 weeks with preterm premature rupture of membrane (PPROM) confirmed by ultra sound and clinical examination were included regardless of their age.* ***Results:*** *A total of 72 female patients were included in the study. Mean age and gestational age of the patients was 25.36±3.8 years and 32.09±1.78 weeks. 56.9% (n=41) patients had 15-25 years of age and 43.1% (n=31) patients fell in age group 26-40 years. Gestational age distribution showed that majority of the patients i.e. 58.3 (n=42) had gestational age 29-32 weeks and 41.7% (n=30) had 33-36 weeks of gestational age.* ***Conclusion****: It is concluded that most common maternal morbidity associated with PPROM was chorioamnionitis, that of neonatal morbidity was prematurity and its complications.*

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INTRODUCTION:

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. For surviving preterm neonates, there may be significant health consequences with lasting disabilities, including respiratory problems, hearing and vision impairment, cerebral palsy, and mental retardation [1].

Delivery of fetus before thirty seven weeks (259 days) is labeled as preterm birth. Preterm birth is multifactorial and its incidence has increased one and half fold in last few years and is a leading cause of fetal mortality worldwide. About 75% mortality and morbidity of fetus and mother occurs during preterm birth [2]. Pattern and mechanism of preterm labor is unknown but in all cases force full uterine contractions are common. Uterine contractions may be physiological and pathological that ends with preterm delivery of fetus [3].

Preterm labor is an unresolved issue in obstetrical profession and has lot of challenges for fetal and maternal outcomes. Preterm labor can be stopped with use of tocolytic medication, antibiotics and corticosteroids; in cases of preterm labor progesterone can be used for maintenance of tocolytic effect [4]. Many techniques have been used and recommended to stop the preterm labor. Use of excessive water to prevent dehydration and complete bed rest are famous but do not have any effect in inhibition of preterm labor. It has been shown that parenteral to colytic agents have better outcome as compared to oral [5].

The fetal and neonatal morbidity and mortality risks are significantly affected by severity of oligohydramnious, duration of latency, and gestation at PROM. The primary complication for the mother is risk of infection. Complications of PROM for the fetus and newborn consist of prematurity, fetal distress, cord compression, deformation and altered pulmonary development leading to pulmonary hypoplasia and pulmonary hypertentsion, necrotizing enterocolitis (NEC) and neurologic disorder. Infectious morbidities in mother, fetus and newborn have been related to both PROM and prolonged rupture of membranes [6].

Objectives of the study

The main objective of the study is to analyze the maternal and perinatal outcome in preterm prelabor rupture of membranes.

MATERIAL AND METHODS:

This cross sectional study was conducted in Ganga Ram Hospital, Lahore during June 2019 to January 2020.Patients admitted in Obstetrics and Gynaecology UniI through outpatient & casualty department with gestational age between 24 to 37 weeks with preterm premature rupture of membrane (PPROM) confirmed by ultra sound and clinical examination were included regardless of their age. Patients with multiple gestation, obstetric bleeding, fetal anomaly, allergic reactions, intrauterine death and patients who refused to participate in the study were excluded. Successful tocolysis was labeled as prolongation of pregnancy for minimum 48 hours (corticosteroids were given in this time for fetal lung maturity) after therapy of tocolysis. Failed or unsuccessful tocolysis was labeled when delivery occurred within 48 hours. After admission, detailed workeup including history, general physical examination, abdomen and pelvic examination and relevant /specific investigations were noted.

Statistical analysis

All data were analyzed using SPSS version 21. Post stratification chi square test was applied to see effect modification. P< 0.05 was considered as significant.

RESULTS:

A total of 72 female patients were included in the study. Mean age and gestational age of the patients was 25.36±3.8 years and 32.09±1.78 weeks. 56.9% (n=41) patients had 15-25 years of age and 43.1% (n=31) patients fell in age group 26-40 years. Gestational age distribution showed that majority of the patients i.e. 58.3 (n=42) had gestational age 29-32 weeks and 41.7% (n=30) had 33-36 weeks of gestational age. The cause of mortality in the present study was sepsis. All of them were between 28 weeks-29 weeks and latency period of <24hrs. Sepsis was the cause of neonatal mortality in our study.

Table 01: Analysis of Maternal morbidity

Maternal complications	Early PROM	Late PROM
Chorioamnionitis	12%	2%
Abruption	16%	4%
No complications	72%	94%

Table 2. Analysis of perinatal mortality

Gestational age	Latency period (hrs)	Birth weight (kg)	Cause of mortality
29 weeks	12	1.3	Sepsis, pulmonary hemorrhage
28 weeks	06	1.2	Sepsis, DIC
28 weeks	05	1.0	Still born

DISCUSSION:

Chorioamnionitis was more common in indicated deliveries as they had prolonged latency period and they were prone to infection during this period. In a study by Bryden et al also showed 67% of chorioamnionitis among early PPROM were in indicated delivery.12 Another study by Jenny et al showed 1.6% of chorioamnionitis in late PPROM.11 In the present study (16%) had abruption in early PPROM, no abruption in late PPROM [7]. Due to their adverse effects and short outcomes these drugs were replaced with oxytocin, Ca+ channel openers and blockers. A new drug nifedine has been introduced for reduction of uterine contractions [8]. It is a Ca+ channel antagonist that blocks the Ca+ influx in cells of myometrium and oral intake gains peak plasma level within 45 minutes and has half life 2-3 hours their use [9]. In our study, we observed that in nifedipine 88.9% patients had prolonged pregnancy while in nitroglycerine 61.1% patients had prolong pregnancy. Conde-Agudelo et al conducted a study in 2011 on comparison between nifedipine and magnesium sulphate in management of preterm labor. They reported that nifedipine was more effective in â2-adrenaqergic agonist as Mg sulphate is also [10-11].

CONCLUSION:

It is concluded that most common maternal morbidity associated with PPROM was chorioamnionitis, that of neonatal morbidity was prematurity and its complications.

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