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FETOMATERNAL OUTCOME OF EARLY PRETERM PREMATURE RUPTURE OF MEMBRANES AT A TERTIARY HEALTH CARE CENTRE

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ABSTRACT Fetomaternal outcome was studied in 100 women in the gestational age 28-33+6 weeks who were admitted with complains of leaking per vagina. Leaking was confirmed with sterile speculum examination and fern test. A high vaginal swab was taken at admission along with administration of antibiotics and betamethasone. Women were managed conservatively in obstetrical ward and monitored for signs and symptoms of chorioamnionitis and fetal distress. Fetomaternal outcome was studied and results were analysed with required statistical tests. Most common gestational age of presentation was 30-30+6 weeks and 47% women delivered within 12 hours. Neonatal mortality was seen in 33% cases and stillbirth in 1%. Most common cause of neonatal morbidity was sepsis. Maternal morbidity was minimal with 3% developing chorioamnionitis, 2% abruption and 5% having fever. 25% patients underwent LSCS and the most common indication for LSCS was failed induction.

KEYWORDS :

INTRODUCTION

Pregnancy is a period of great enthusiasm complemented by equal amount of apprehension. Breaking of waters in early third trimester (28-33+6 weeks) is a time of significant agony not only for the mother but also for the obstetrician who will care of her. Recent evidence suggests that preterm fetal membranes are stronger than term fetal membranes and various biochemical factors are responsible for generating a weak zone in the fetal membrane leading to rupture1. Incidence of PPROM before 34 weeks of gestation was found to be 7% in a study in India2. There is a general consensus among authors and various guidelines in favor of conservative management in PPROM less than 34 weeks to reduce prematurity related perinatal morbidity3,4. However the risk of infection related perinatal and maternal morbidity due to premature rupture of membranes is also significant in a developing country.

METHODOLOGY

The present study was a prospective hospital based descriptive analysis carried out on 100 women with gestational age 28-33+6 weeks who were admitted in department of obstetrics and gynecology with complain of passage of gush of fluid per vagina. After written and informed consent, history and physical examination was done. Gestational age was determined by asking the women about her last menstrual period, if reliable, or from the earliest ultrasonography available. Diagnosis of preterm premature rupture of membrane was based on history and per speculum examination. A history of sudden passage of amniotic fluid from the vagina or feeling wet with pooling of amniotic fluid in the posterior fornix on sterile speculum examination or by fern test was used to confirm the diagnosis. Ultrasonography was done to assess the amniotic fluid index level, gestational age, fetal weight, presentation, placenta localization and congenital anomaly. Women with malpresentations, twin gestation, medical disorders such as diabetes, hypertension and heart disease, fever, intrauterine fetal death, congenital anomaly, diagnosed cases of placenta previa and accidental hemorrhage were excluded from the study. Conservative management was done in all early PPROM (28weeks to 33weeeks+6days) patients till the onset of spontaneous labour or till the maternal or fetal indication for delivery ensued such as chorioamnionitis, meconium stained amniotic fluid, abruption, cord prolapse or fetal distress. Women were managed conservatively in the obstetrical ward and monitored for signs and symptoms of chorioamnionitis and fetal compromise. All women received antibiotics: intravenous ampicillin 2g 6 hourly for 2 days followed by oral amoxicillin 250mg 8 hourly for 5 days. Corticosteroid (24 mg betamethasone divided in 2 doses 24 hour apart) was given to all women. Women were monitored 4 hourly for BP, pulse, temperature and per abdomen examination including fetal heart sound. Fetal monitoring was done by electronic fetal monitor one hour daily and by daily fetal movement count. Following investigations were sent: CBC, CRP, urine complete and microscopy, high vaginal swab apart from the routine antenatal investigations like ABORh, HIV, HBsAg, VDRL, RBS.

All women were required to wear a sterile pad which was inspected 4 hourly for colour and smell of liquour. The diagnosis of clinical chorioamnionitis was based on the presence of maternal pyrexia (temperature>37.8 degree C or 100.4F) and 2 or more of the following: maternal tachycardia(>100bpm), fetal tachycardia(160bpm), uterine tenderness, purulent vaginal discharge, leucocytosis(>15000), C reactive protein>2.7 mg/dl. Mode of delivery was noted and maternal and perinatal outcome was studied. Continuous variables were summarized as mean and SD while nominal variables as proportion. Data analysis was done by parametric test for continuous variables whereas chi square test was used for nominal values. p values <0.05 were taken as significant.

RESULTS

The mean age of women was found to be 23.91±3.44 years in our study. 55% had regular antenatal visits. 34% were illiterate. 56% resided in urban areas and 44% resided in rural areas. 63% belonged to lower middle class. 42% women were primigravida and 26% women had gestational age of 30- 30+6 weeks at admission. Among the multigravidas 20% had a history of preterm vaginal delivery and 12% had suffered a miscarriage earlier. In the present pregnancy, 6% had taken treatment for vaginal discharge antenatally and 3% had severe anemia and received blood transfusions. 3% also had cervical cerclage in present pregnancy and 4% patients had history of 1st trimester bleeding. 47% delivered within 12 hours of leaking and 16% delivered after 48 hours. 75% delivered vaginally and 25% underwent LSCS. The most common indication for LSCS was failed induction(36%). At birth 26% neonates had an Apgar score of <4 and after 5 min, 64% neonates had an Apgar score of >7. 57% neonates were extremely low birth weight(weight <1.5 kg). Mortality was seen in 33% neonates with 1 stillbirth. Neonatal mortality increased with increase in latency period however the p value was not significant. Most common cause of perinatal morbidity in our study was sepsis seen in 36% neonates followed by congenital pneumonia in 32% neonates. 89% neonates were admitted in NICU for more than 24 hours and the most common intervention was use of antibiotics reported in 77% neonates. Neonatal sepsis and NICU admission also increased with increase in latency period. Maternal morbidity was minimal with chorioamnionitis seen in 3% women, abruption in 2% and fever in 5%. Maternal morbidity also increased with latency period. The p value, however, was not significant.

DISCUSSION

Our study indicates that early PPROM is a significant contributor to neonatal morbidity and mortality. Majority of patients were less than 25 years of age. This coincides with the child bearing age of the population. Although more than half of the study population had regular antenatal visits and resided in urban areas, a significant number of women came from rural areas without any antenatal care belonging to a low socioeconomic echelon. Such class of population has a higher likelihood of being malnourished which subsequently culminates in an immunocompromised state thus contributing to higher rates of morbidity seen in our study. 42% women in our study were primigravida. This is because most of the women in our study were less than 25 years of age. Similar findings have been reported by Noor S et al5, D'souza et al6 and Diraviyam JMV et al7. Most common gestational age of presentation in early PPROM in our study was 30-30+6 weeks. The mean gestation in a study by Arora P et al2 was 306/7±1.8 weeks which is similar to our study. In a study by Pasquier et al8 mean gestational age at presentation was 31 weeks. Most common past maternal history in our study was a history of preterm delivery seen in 20% women. Such history has also been reported by Goya et al9, Mohan SS et al10 and Akter S et al11. Latency period was more than 24 hours for 32% women in our study. 75% women delivered vaginally and 25% underwent LSCS with most common indication for LSCS being failed induction. A similar percentage for mode of delivery has been documented by D'souza et al6, Diraviyam JMV et al7 and Goya M et al9. However the indication for LSCS differed. Neonatal mortality was 33% in our study with most common cause being sepsis which was closely followed by congenital pneumonia. Arora P et al2 also found a high rate of neonatal sepsis in their study on early PPROM(24%). Mortality increased with increased in latency period but the p value was not significant. Similarly development of sepsis in neonate was not found to be dependent on latency period. This is in accordance to study by Ekin A et al3, Aziz et al12 and Frenette P et al13. Majority of neonates in our study group were extremely low birth weight(<1.5kg) and at 5 minutes of birth only 64% neonates had an Apgar score of >7. This is not in accordance with other studies. The reason behind this difference is 2 pronged. One reason is a shorter latency period seen in our study which did not allow completion of required steroid doses for fetal lung maturity. Secondly the poor socioeconomic status of our study cohort eventually leads to an immunosuppressive state which is passed down to the neonate. Dars S et al14 in their study on PPROM also concluded that low socioeconomic status resulted in a higher percentage of neonatal death. Both these factors along with gestational age related prematurity has resulted in a higher neonatal mortality in our study population. Use of antibiotics was the most common intervention in our study which is similar to a study by D'souza et al6. Maternal outcome in our study was favourable with no maternal mortality and 3% women developing chorioamnionitis. The percentage of maternal morbidity was low in our study which is because of a shorter latency period and adequate antibiotic coverage. Maternal morbidity increased with increase in latency period. However the difference was not significant. This was similar to a study by Ekin A et al3 and Frenette P et al13. We also found out that 53% women had a positive vaginal swab culture report, but this did not translate into a similar percentage of chorioamnionitis in the study group. Similar findings were also documented by Arora P et al2 and Carrol S G et al15 and they concluded that lower genital tract cultures provide poor prediction of intrauterine infection.

CONCLUSION

Expectant management in early PPROM is a 2 edged sword especially in a developing nation where we are still battling with issues associated with low socioeconomic status. Maternal outcome in a case of early PPROM is largely favourable due to provision of prophylactic antibiotics even which is usually given to patients before they are referred to a tertiary health centre. A similar provision of antenatal corticosteroids at primary health centre may go a long way in ensuring a better neonatal outcome even at an early gestational age.

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