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Etiology and Outcome in Preterm Labour

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ABSTRACT

Preterm delivery with its associated morbidity and mortality still represent one of the major unsolved problems in obstetrics & gynaecology. This is a prospective study conducted in the department of Obstetrics & Gynaecology, Kurnool. The aim of study is to identify etiological factors of preterm labour, and to study perinatal outcome.

KEYWORDS Preterm labour, perinatal mortality, RDS,APGAR

Introduction

Preterm birth affects 7-11% of all new born infants and is a major cause of perinatal morbidity and mortality and is probably the most challenging problem in modern obstetrics. Preterm deliveries present a problem because of severe neonatal complications. These are worse for preterm IUGR. These range from RDS, intraventricular hemorrhage, sepsis and necrotizing enterocolitis. As the clear knowledge of cause of preterm labour is lacking, treatment modalities are aimed at the symptoms. They range from simple bed rest to multiple agent tocolytic therapy with its associated complications, circlages and antibiotics. Despite major decrease in morbidity and mortality rates because of more widespread use of antenatal glucocorticoids and improvements in neonatal care of very premature infant the rate of prematurity itself remained unchanged for decades. Recent studies have focussed on more promising factors, including cervicovaginal fetal fibronectin, bacterial vaginosis and short cervical length as determined by ultrasound.

Methods:

Inclusion criteria : gestational age >28 weeks and < 37 wks, with or without rupture of membranes.

Exclusion criteria: gestational age < 28 wks, and > 37 wks, induced preterm labour.

Patients were evaluated by history to know the etiological factors, clinical examination and ultrasound for confirmation of gestational age. Progress of labour was assessed. Risk factors and perinatal outcome related to preterm labour are recorded and analyzed.

Observation and results:

This study was conducted at government general Hospital, Kurnool. Total numbers of deliveries are 8109. Total numbers of preterm deliveries are 1184. Incidence is 14.6%.

Of the total 1184 preterm deliveries, 312 cases are included in the study. These 312 cases gave birth to 333 preterm deliveries (including 17 twin deliveries and 2 triplets)

Of the total 312 cases, 41 cases (13.14%) cases were booked and 271(86.6%) cases were unbooked.

Most common age group in the study is between 21-25 yrs (47.11%) followed by <20 years(34.3%).16.35% of women are in the age group 26-30 yrs and 2.24 % of women are in the age group >30 years.

Majority of women in the study are multigravida (56.67%),primigravida constitute 3.26%.This indicates that preterm labour is more common in multigravida.

Gestational age between 32-34 weeks constituted majority of cases(49.36%) followed by 35-37 weeks (28.85%) of study population.

In the present study 194 cases constituting 62.17% of preterm births had some etiological factor associated with preterm labour and 118 cases (37.83%) are idiopathic.

47 cases(24.33%) are caused by abruptio placentae,31 cases 15.97% are caused by pre-eclampsia and eclampsia and 28 cases 14.43% are caused by overdistended uterus(multiple gestations, polyhydramnios). Infections, anemia, pprom, cervical incompetence, fetal congenital anomalies, heart disease, jaundice, epilepsy, uterine anomaly are rare causes.

Mode of delivery:

83.4% are delivered vaginally, 13.4% are delivered by caesarean section and 3.2% are delivered by outlet forceps.

Most common indication for caesarean section :(9) cases is failed progress and 7 cases is fetal distress.

Distribution of cases according to APGAR score:

Cases with apgar >6 were 211, out of these 151 cases were sent to NICU and 87 cases were admitted and 16 cases died at NICU.

25 cases with apgar 4-6 were sent to NICU. All were admitted and 9 cases died at NICU.

Distribution of cases according to weight of the baby.

Out of 333 babies born 35.43% are birth weight between 1.6-2kg, 28.22% are with birth weight >2kg, 25.83% are

with birth weight between 1.1-1.5kg and 10.52% are with birth eight <1kg.

Perinatal mortality:
122 babies died in the perinatal period giving perinatal mortality of 39.1%, majority are due to early neonatal deaths(50%).

In our study the three most common causes of mortality are RDS 18 cases, septicaemia 10 cases and 9 cases birth asphyxia. 7 deaths are due to congenital malformations and 3 due to meconium aspiration.

Perinatal mortality in babies <1kg is 100%.perinatal mortality is least in babies weighing >2kg.

Perinatal mortality is 88.23% for gestational age 28-31wks,33.77% for gestation age 32-34weeks, 1.11% for gestational age 35-37 weeks. perinatal mortality decreases with increasing gestational age.

Discussion.
The study was aimed at knowing the etiological factors associated with preterm labour and perinatal outcome in preterm labour. The results of the study are discussed below.

Incidence: incidence is 14.6% . this is comparable to incidence in bangal et al13.2%, devi et al12.18%.

Booking status : majority of study population in our study are unbooked 92%. This was comparable to Bangal et al 90%, Bajwa et al94%.

Maternal age : mean age group in our study was between 20-30 years. This was comparable to Iams et al 26.2,Bajwa it al 20-27 years.

Parity : multigravida constituting 56.6% is comparable to Feresu et al 56.2% and Singh et al 53%.

Gestational age : In our study 48.39% of cases are between 32-34 weeks comparable to bangal et al where 50% belong to gestational age 32-34 weeks.

Percentage of preterm deliveries associated with etiological factors:

In our study preterm labour is associated with risk factor in 62.17% is comparable to Bangal et al 57%.

Mode of delivery: the rate of caesarean section is 13.4%and that of vaginal delivery is 83.45. This is comparable to Bangal et al where caesarean section was 11.6% and vaginal delivery 84%.

Perinatal mortality: in our study was 39.1%, comparable to Bangal et al 42.4%.

Early neonatal death: early neonatal death rate in the present study was 18.21% is comparable to sonkusare it al 14.5% and Singh et al 12.36% studies.

Causes of early neonatal deaths:
In our study the three most common causes of early neonatal deaths is RDS 40.74%,Septicemia18.51% and birth asphyxia18.51, comparable to Bangal et al study in which RDS 38.3%, septicaemia 21.3% birth asphyxia 19.12%.

Conclusion:
The present study was done to analyze the etiology and to determine perinatal outcome of preterm labour between 28-37 weeks of gestation.

Incidence of preterm labour was 14.6%

312 cases were included in the study giving birth to 333 babies including multiple gestation.

Most of the cases were unbooked.

Of these cases majority were in the age group 21-25 years (47.11%).

Majority of these cases were multigravida.

Most common gestational age is 32-34 weeks (49.36%) .

Etiological factors are identified in 194 cases constituting 62.17%.

The three common identified etiological factors were abruptio placentae, PIH, overdistended uterus.

The rate of vaginal delivery was 83.4%.

The rate of caesarean section was 13.4%.the indications were failed progress of labour(9), fetal distress(8),CPD(7), hand prolapse (7),twin with 1st twin noncephalic presentation (3), breech(3), 2 prior c/s(4) and uterine anomaly(1).

Perinatal mortality was 39.1%. Most common causes of early neonatal deaths were respiratory distress syndrome, septicaemia and birth asphyxia.

Out of 211 with APGAR >6, 151 cases were sent to NICU. Out of these 82 cases were admitted in NICU and 66 cases survived.

Out of 25 cases with APGAR 4-6, 16 cases survived.

Babies with APGAR 2-4 were resuscitated and sent to NICU but none of them survived.

In babies with birth weight <1kg, 100% perinatal mortality was identified.

Conclusion:
Preterm labor is a heterogenous condition with multifactorial etiology. In the present study we have identified many etiological factors for preterm labour many of them were modifiable.

Clinical suspicion from the past obstetric history, regular antenatal checkups, early detection and correction of risk factors both obstetrical and medical like control of BP in pre-eclampsia, correction of anemia, treatment of cervicovaginal infections and asymptomatic bacteriuria, cervical circlage in case of incompetence can reduce the incidence of preterm labour.

Perinatal outcome depends on the gestational age at the time of delivery and birth weight of the neonate born.

Most common cause of early neonatal deaths was RDS which can be reduced by giving corticosteroids in the antenatal period in high risk cases.

The other common causes of increased early neonatal death rate were septicaemia and birth asphyxia which can be reduced by preventing antenatal maternal infections, close monitoring for signs of hypoxia preferably by continuous electronic fetal monitoring.

Optimal mode of delivery in preterm labour was still debatable. Mode of delivery should be individualized in each case.

Perinatal mortality with gestational age between 28-31 weeks was 88.23%.

In the present study perinatal mortality decreased with increasing gestational age and increasing birth weight of the baby.