A STUDY OF RISK FACTORS AND PERINATAL OUTCOME IN PRETERM LABOUR AT TERTIARY CARE HOSPITAL

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ABSTRACT

Background- Preterm labour is a common complication that contributes significantly to high perinatal morbidity and mortality. In India, the reported incidence of preterm labour is 10-15 percent. Premature babies are at risk of many immediate and long term complications.

Material and Methods- Prospective observational study of various risk factors responsible for preterm labour and the perinatal outcome was done in 125 women, over one year period at tertiary care centre in rural area. Diagnosis of preterm labour was done by ACOG 197 criteria.

Results- The incidence of preterm labour was 13.2%. It was observed that 95% women were unbooked cases from poor socio-economic class, staying in a rural area. Fifty percent cases had pregnancy duration of 32 to 34 weeks. Sixty percent cases had some associated risk factor responsible for preterm labour. Ante partum haemorrhage (22.53%) over distension of the uterus (16.90%), hypertension and maternal anaemia were common risk factors. Perinatal mortality in the study group was 42.4%. Early neonatal deaths accounted for 50% of the perinatal mortality. Antepartum haemorrhage, maternal anaemia, hepatitis, obstructed labour, and fetal congenital anomalies were common causes of stillbirths, where as respiratory distress, birth asphyxia and septicaemia were common causes of early neonatal deaths. Neonatal mortality was 100% in the babies with birth weight less than 1000 grams .Neonatal mortality was 63.33% in babies born before 31 weeks of gestation.

Conclusion- Early detection of high risk factors, appropriate intervention, institutional delivery and good neonatal care back up facilities can improve the outcome of preterm labour.

Keywords: Preterm labour, Perinatal mortality, Neonatal mortality

1. INTRODUCTION

WHO (1972) defined preterm labour as a foetus delivered earlier than 37 wks or less than 259 days from the first day of LMP[1]. It complicates approximately 5-10% of pregnancies and accounts for about 75% of perinatal deaths[2] . Beck and colleagues estimated that 9.6 percent of all births were preterm.[3] Approximately 85 percent of preterm births take place in Africa and Asia. In Malaysia, 50 percent of neonatal deaths are due to preterm births.[4] Residual mental and motor handicaps are the major deterrents to the optimal development of a preterm infant[5] .The precise aetiology if preterm labour is still unknown. Many factors like PROM, over distension of the uterus, medical diseases like chronic nephritis , obstetrical complications like pre eclampsia and ante partum haemorrhage are thought to be mainly responsible for onset of preterm labour.[6] Very often, the diagnosis of preterm labour is made at advanced stage of labour, making it difficult to effectively stop it or act upon it. With the background of the above information, this clinical prospective study was carried out in the Department of Obstetrics and Gynaecology of Rural Medical College, Loni, over a period of one year. The study aimed at finding out the incidence, etiological risk factors responsible for preterm onset of labour and the perinatal outcome in these cases.

2. MATERIAL AND METHODS

This prospective observational clinical study was carried out in 125 cases, between 28-37

weeks of pregnancy, who presented with preterm labour. The study was carried out at a rural referral hospital having level two facilities for the care of preterm babies. Presence of following symptoms and signs were taken as the criteria for inclusion of cases. 1. Painful uterine contractions occurring at least once in 10 min and lasting for 30 seconds.
2. Cervical effacement of more than 50% and dilatation more than 3 cms.in primigravida and more than 4 cms in multigravida. 3. Presence of show or bag of membranes. Cases were admitted in the labour room and the progress of labour was assessed. Obstetric management was done as per the findings in the individual case. Antibiotics were started in the cases of PROM >12 hours. Paediatricians were available at the time of delivery. Babies were transferred to premature baby care unit for neonatal care and neonatal outcome was analysed.

3. RESULTS

During the study period 125 women went into labour before term. The incidence of preterm labour was 13.2%.It was observed that 95% women were from poor socio-economic class and were from rural area .Ninety percent of them were unbooked .Fifty percent cases had pregnancy duration of 32 to 34 weeks. The incidence of preterm labour was found to be increasing with age and parity. Fifty seven percent cases had some associated risk factor responsible for preterm labour. Ante partum haemorrhage (22.53%) and over distension of the uterus. (16.90%) were common risk factors. Eighty four percent cases delivered normally vaginally and 11.6% by caesarean section. Perinatal mortality was 42.4%. Early neonatal deaths accounted for nearly 50% of the perinatal mortality. APH, obstructed labour, fetal congenital anomalies were common causes of stillbirths, whereas, respiratory distress, birth asphyxia and septicaemia were common causes of early neonatal deaths. Neonatal mortality was 100% in the babies born with birth weight of 1000 grams. Neonatal mortality was directly proportional to birth weight of the baby. Neonatal mortality was 63.33% in babies born before 31 weeks of gestation. Overall early neonatal mortality was 27.27% . The incidence of preterm labour or spontaneous abortion in the previous pregnancies was found in 13.6% cases.

Table 1. Risk factors Associated with Preterm Labour

Risk Factor	*No. of cases*	*Percentage*
Antepartum haemorrhage	**16**	**22.53**
Hydramnios, Multiple Pregnancies	**12**	**16.90**
Hypertension	**10**	**14.08**
Febrile conditions	**08**	**11.26**
Anaemia	**05**	**07.04**
Premature rupture of membranes	**08**	**11.26**
Cervical Incompetence	**06**	**08.45**
Others	**06**	**08.45**
Total	**71**	**100**

Table.2. Perinatal mortality in Preterm Labour

Type of Deaths	*No. of cases*	*Percentage*
Macerated stillbirth	**08**	**15.09**
Fresh stillbirth	**18**	**33.96**
Early neonatal deaths	**27**	**50.94**

Table 3 Risk Factors Associated with stillbirth in preterm labour

RISK FACTOR	*Number of Fresh Stillbirths*	*Number of Macerated Stillbirths*
Antepartum haemorrhage	**6**	**-**
Obstructed Labour	**4**	**-**
Fetal Congenital malformations	**3**	**3**
Pregnancy induced hypertension	**2**	**1**
Birth asphyxia	**2**	**-**
Maternal anaemia	**-**	**3**
Maternal hepatitis	**-**	**1**
Maternal Burns	**1**	**-**
Total	**18**	**8**

Table 4. Causes of Neonatal deaths

Cause	*No. of cases*	*Percentage*
R.D.S.	**11**	**40.74**
Birth Asphyxia	**05**	**18.51**
Septicaemia	**05**	**18.51**
Fetal Congenital Malformations	**03**	**11.11**
Meconium aspiration	**01**	**03.70**
Pulmonary haemorrhage	**01**	**03.70**
D.I.C.	**01**	**03.70**
Total	**27**	***100***

4. DISCUSSION

This clinical prospective study was carried out in a rural tertiary care teaching hospital catering patients from surrounding villages. In the present study, majority of women were from lower socioeconomic class. This observation was in agreement with that of other workers. [7,8]. Devi (1980) reported. 12.18% incidence of preterm labour in India[9]. In the present study, the incidence was slightly more (13.2%) than that reported by Devi. It could be related to poor socioeconomic class, ignorance and lack of awareness about the available antenatal care facilities in the study population. Many observers have pointed out that the maternal age over 35 years and primigravida are significantly associated with preterm labour and low birth weight babies. In the present study, we observed that the incidence of preterm labour was more in grand multies and in elderly women. Molly ET. Al. (1970) found that 67% of premature births had some obvious risk factors associated with the onset of preterm labour[10]. In this study, we could find the associated risk factors in 57% cases. Ante partum haemorrhage, hypertension during pregnancy and over distension of uterus were the common risk factors. The perinatal mortality among premature babies in the developing countries is still very high. Low birth weight and prematurity are the factors responsible for it.

Risk of perinatal deaths increases with the age of the mother (over 35 years) and for those from the underprivileged social classes (WHO: 1972).[1] Rural residence definitely adds to the risk due to paucity of the trained personnel, poor transport and lack of communication. In the present study, it was observed that perinatal mortality was directly related to birth weight and gestational age of the baby. Same was observed by Devi et.Al. (1974)[11] and Singh et al.(1980)[12]. Acute placental insufficiency as a result of antepartum haemorrhage, obstructed labour and severe hypertension was the main causes of intrapartum deaths. Severe anaemia, chronic hypertension and hepatitis were responsible for ante partum foetal deaths. Majority of these deaths can be prevented by reducing the incidence of preterm labour through regular antenatal checkups, screening of high risk cases ,diagnosis and treatment of lower genital tract infections[13,14,15,16], by performing prophylactic circlage in cases of cervical incompetence[17,18], use of short term tocolysis and glucocorticoids for improving lung maturity[19,20,21],use of progesterone in overdistened uterus[22] and by improving maternal nutrition with supplementation in the last trimester[23,24]. The peripheral health workers including those at primary health centers must be educated about the measures to be taken while shifting the premature babies from periphery to the hospital. They must be provided with the thermocol boxes for shifting the babies to prevent hypothermia during transport .Correction of the delays in the transport can further help in reduction of perinatal deaths. Prematurity, birth asphyxia were responsible for 60% of neonatal deaths in this study. Septicaemia was responsible for 18% neonatal deaths. Incidence of deaths due to sepsis is very high and must be reduced by improving the aseptic conditions in the labour room and in the neonatal care units and by use of broad spectrum antibiotics in preterm labour. Overall improvement in the neonatal care facilities will help in the improvement of neonatal outcome.

CONCLUSION-

Preterm onset of labour is a heterogeneous condition with multifactorial aetiology. Clinical suspicion from the past obstetrical history ,early detection and correction of risk factors (Medical, Obstetrical) like control of blood pressure in pre eclampsia, correction of anaemia, treatment of cervico- vaginal infections and asymptomatic bacteriuria, avoidance of coitus in late pregnancy, use of tocolytics in overdistended uterus, cervical encirclage in proven cases of cervical incompetence, use of injectable progesterone in ediopathic threatened preterm labour can

reduce the incidence of preterm labour. Maternal betamethasone in preterm labour helps in enhancing the fetal pulmonary maturity and reduces the incidence of respiratory distress syndrome in newborn babies. Deliveries in the institution having facilities for neonatal care will improve the perinatal outcome in preterm labour.

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