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Original Research Article

Contribution of Preterm Delivery to Perinatal Outcome in a Referral Hospital

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Abstract: Preterm delivery is a major challenge in perinatal healthcare. Most perinatal deaths occur in preterm infants and preterm birth is an important risk factor for neurological impairment. Preterm labor is a common complication that contributes significantly to high perinatal morbidity and mortality. The incidence of preterm labor in India is 10-15%. Preterm birth is an obstetrician's dilemma and a pediatrician's challenge. Preterm babies are at risk of many immediate and long term complications. Some preterm labour occur for no apparent reasons and others are associated with causal factors such as multiple pregnancy, foetal abnormality, maternal infections or antepartum hemorrhage which themselves maybe responsible for a substantial proportion of perinatal loss. This study aims at finding out the causes of preterm labour, perinatal outcome and identification of the cases which need intervention. This is a retrospective study done in the department of Obstetrics & Gynecology of a referral hospital. 544 women with preterm delivery and their perinatal outcome was study over a period of 1 year at a tertiary care centre. The case records of all the preterm deliveries were reviewed with regard to risk factor, gestational age, previous obstetrics history, and medical and obstetrics complications in present pregnancy and labour. The foetal outcome in terms of mortality and morbidity were also analyzed. According our study out of 3742 babies born, 544 were preterm. Thus, the incidence of preterm labor was 14.53%. Out of 119 preterm babies, 25 were still born and 30 out of 94 live births died within 7 days of delivery (recognized as early neonatal death). The total perinatal mortality among preterm births was found to be 55 out of 94. 55% of total perinatal deaths had pregnancy duration of 28 to 34 weeks. When compared to term births, preterm births had 7.2% still born babies, 15.9% early neonatal deaths and 9.8% perinatal mortality. Preterm labour inspite of its low incidence of around 10% contributes disproportionately to perinatal mortality. The prevention of preterm labour is one of the greatest challenges to perinatologists and much of it also depends on socio economic factors. We should concentrate on effective means and methods of prevention of avoidable factors responsible for preterm labour, so as to bring down the mortality and morbidity associated with this condition. Early detection of high risk factors, appropriate intervention, institutional deliveries and good neonatal care with back up facilities can improve the outcome of preterm labour.
Keywords: Preterm labour; perinatal mortality; severe anemia

INTRODUCTION

According to WHO, the term prematurity denotes infants born 3 weeks or more before term in pregnancy beyond 20 weeks of gestation. Preterm birth remains a leading direct cause of mortality in both developed and developing countries. Preterm birth is responsible for 75 % of neonatal mortality and 50% is associate with long term neurological impairment in children. There are several problems associated with preterm births. While some preterm labour occurs for no apparent reason, others are associated with causal factors such as multiple pregnancy, foetal anomaly, maternal infection or antepartum haemorrhage which themselves may be responsible for substantial proportion of perinatal loss. Preterm delivery may also be due to deliberate obstetric intervention because

pregnancy is complicated by such factors as inadequate foetal growth, Rhesus isoimmunization or severe preeclampsia.

Present analysis is to determine the incidence and the association between preterm delivery and perinatal mortality in our country by correlating the outcome of the baby not only with gestational age, but also with possible causal factors associated with preterm birth such as multiple pregnancies, maternal or foetal complications.

MATERIAL AND METHODS

A detailed retrospective and observational study was made taking records of 544 infants delivered before the onset of 37 weeks of gestation at a referral hospital over a period of 1 year. The preterm infants accounted for 14.53 % of all deliveries in this period. Gestational age at delivery was calculated from last menstrual period. The case records of all the preterm deliveries were reviewed with regard to maternal age, parity, previous obstetric history, medical and obstetric history and complications in current pregnancy and labour. The foetal outcomes in terms of morbidity and mortality were also analyzed. Still birth was defined as foetal death occurring after 28 weeks of pregnancy and early neonatal death was defined as death of any live born baby in the first week of life irrespective of its gestational age.

Aim of Study

- To study the causes of preterm births.
- To identify cases requiring intervention.
- To study the perinatal outcome of preterm births.

Inclusion Criteria

- Gestational age >20 weeks but < 37 weeks
- All booked and referred cases
- Vaginal preterm, Instrumental and caesarian preterm delivery

Exclusion Criteria

- Pregnancy > 37 weeks
- Malpresentation
- Anomalous foetus

RESULT

During the study period of 1 year, the perinatal mortality rate was 84 per 1000 live births. This was made up of a still birth rate of 69.7 per 1000 and early neonatal death rate of 14.6 per 1000. One third of all perinatal deaths were due to lethal congenital anomalies and these were excluded from the analysis.

Table-1: Booked versus referred cases

Type of cases	Number of cases	Percentage
Booked	300	55%
Referred	244	45%
Total	544	100%

Table-2: Perinatal mortality in relation to gestational age:

	Preterm	Term	Post term	Total
No. Of deliveries	544	3156	42	3742
Live births	408	3020	35	3463
Still births	148	106	7	261
Early neonatal deaths	35	17	3	55
Perinatal deaths	183	123	10	316

Table-3: Perinatal Mortality in relation to gestational age

Gestational age	No. of infants	No. of deaths	Percentage
28 – 30 weeks	217	87	40.09%
31 – 33 weeks	195	76	38.9%
34 – 37 weeks	132	20	15.15%
Total	544	183	33.6%

Table-4: Obstetric factors associated with perinatal mortality

Obstetric factors	Total preterm babies delivered	Total perinatal deaths	Percentage
Severe anemia	299	151	50.5%
Multiple pregnancy	126	21	16.6%
PIH	98	10	10.2%
APH	21	1	4.76%
PPROM	10	0	0
Subclinical chorioamnionitis	2	0	0
Cervical incompetence	2	0	0
History of previous preterm delivery	2	0	0
Total	544	183	

Table-5: Causes of death in preterm births

Causes of death	Number of patients	Percentage
Birth asphyxia	55	30%
Intraventricular hemorrhage	42	23%
Neonatal sepsis	31	17%
Necrotizing enterocolitis	15	8%
Respiratory distress	40	22%
Total	183	100

DISCUSSION

Preterm birth incidence in our study was 14.53% as against 7.5% in India last year. The study shows anemia, malnutrition, PIH, APH, multiple pregnancies are the main contributing factors for preterm birth. Regular antenatal visits, prevention of anemia, proper nutrition and prior identification of risk factor for preterm labour can reduce the risk of preterm birth [1]. Though it is very difficult to predict who will deliver prematurely, preventive strategies revolve around efforts to reduce the background risk factors, screening symptomatic and asymptomatic women for the risk of preterm delivery and treatment of women with threatened and established preterm labour. Intervention has been aimed at general improvement in nutrition, rest, hydration and psychological support. According to our study, the number of preterms attributing anemia as cause of preterm delivery is 50%. Other important factors include multiple pregnancies, PIH, APH, preterm premature rupture of membranes, subclinical chorioamnionitis, cervical incompetence and previous preterm labour. Percentage of deaths in preterm labour due to anemia was seen to be highest with lowest incidence amongst patients with preterm delivery due to subclinical chorioamnionitis, PPROM, cervical incompetence and previous preterm labour. Most of these factors are preventable or some intervention can be carried out in early pregnancy to prevent it.

CONCLUSION

Preterm onset of labour is a heterogenous condition with multifactorial etiologies. Clinical suspicion from the past obstetric history, early detection and correction of risk factors medical and obstetriucs like control of blood pressure in PIH, correction of anemia, treatment of cervicovaginal infections and asyptomatic bacteriuria, use of tocolytics in overdistended uterus, cervical encirclage in proven cases of cervical incompetence, use of injectable progesterone in cases of idiopathic threatened preterm labour reduce the incidence of preterm lbour. Maternal betamethasone in preterm labour helps in enhancing the foetal pulmonary maturity and reduces the incidence of respiratory distress syndrome in newborn babies. Deliveries in institution having facilitiues for neonatal care will improve the perinatal outcome in preterm labour.

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