

Risk Factors and Outcome of Preterm Labour in Tertiary Health Centre

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Abstract:

Background: Currently preterm labour is one of the most challenging problems confronting the obstetricians and perinatologists. This unfortunate episode accounts for 50-75% of the perinatal mortality.

Methods: A cross sectional study was conducted on 210 pregnant women with preterm labour admitted in Monno Medical College Hospital, Manikganj from June 2014 to December 2015, to study the causes and outcome of preterm birth in Tertiary health centre of Manikganj.

Results: Occurrence of preterm birth was 13.82%; 47.14% occurred between 34-37 weeks of gestation; 33.80% occurred 31-33 weeks of gestation and occurred in 28-30 weeks 19.04%. About 22% patients presenting with preterm labour had a past history of abortions and 14.3% had a history of preterm delivery. Premature rupture of membranes was found to be the most common risk factor related with preterm labour in the present pregnancy. Genitourinary tract infection was the next important risk factor of preterm labour; 24.8% (86) patients had either vaginal infection (19.5%) or urinary infection (21.4%) or both. Another important risk factor identified in this study was antepartum haemorrhage which was cause in 11.4 % cases. Preterm babies commonly suffered from various complications like jaundice (32.1%), respiratory distress syndrome (22.6%), asphyxia (13.5%), sepsis, hypoglycemia and coagulopathy.

Conclusion: Most of the preterm births occurred between 34-37 weeks of gestation. Most common risk factors of preterm births are history of abortion and preterm delivery in previous pregnancy; PROM UTI vaginal infection, PIH and APH in correct pregnancy. Newborn jaundice, RDS and birth asphyxia are the common neonatal morbidity in preterm labour. Identifying risk factors to prevent the onset of preterm labour and advanced neonatal care unit can help decrease neonatal morbidity and mortality.

Key Words: Preterm labour, Risk factor, Neonatal outcome.

Introduction:

Preterm labour is one of the most challenging problems faced by obstetricians and perinatologist because of women's pregnancy takes a heavy toll of high perinatal mortality and morbidity. In developing country among the total 27 million babies born annually, 3.6 million babies are born preterm and over 300,000 of these preterm babies die each year because of associated complication.¹

It is estimated that the risks of neonatal mortality and low birth weight are increased by almost 50% if maternal age at childbirth is less than 20 years.²

A very strong association has been found with education status and socio-economic status in the cases of preterm births. Despite the advances in foeto-maternal medicine the preterm rate continues to be high. Women's education is associated with decline in preterm birth rate.³

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Recent studies have shown association between preterm birth and stress and depression, negative life events, perception of racial discrimination and domestic violence are also associated with higher preterm births.⁴

A significant proportion of preterm births are preventable by adequate antenatal care, female literacy and health education, which increase the awareness about antenatal care. So our study aims to find out the main risk factors related to preterm births specially those which can be intervened upon so that proper measure can be undertaken to decrease the preterm birth rate and neonatal morbidity and mortality associated with prematurity.

Materials And Methods:

This cross sectional study was carried out in the Department of Obstetrics and gynecology of Monno Medical College Hospital, Manikganj, on 210 pregnant women with preterm labour 28-34+6 week of gestation from June 2014 to December 2015.

Patients enrolled into study were subjected to a detailed history taking with respect to age, parity, previous pregnancy outcomes and for the presence of any risk factors in this pregnancy including GDM, PIH, anaemia or any other medical disease. A thorough general physical, systemic and obstetrical examination was done paying special attention to the presence of risk factors for preterm labour. Gentle per speculum examination and if required a per vaginal examination and Bishop scoring was done. Complete haemogram, urine routine examination, urine culture and sensitivity, vaginal culture and sensitivity and CRP levels were done.

Ultrasonography was done as and when required to document fetal gestational parameters, rule out multiple pregnancy, congenital malformations and fetal growth restriction. Amniotic fluid index, placental localization and grading; cervical length and status of the cervical os were also assessed. Antibiotic was given according to culture and sensitivity report. These patients were followed up till delivery. Gestational age at the time of delivery, mode of delivery and neonatal outcome in terms of birth weight, morbidity and mortality were recorded.

Inclusion Criteria were duration of pregnancy between 28-37 weeks with uterine contraction of 4 in

20 minutes or 8 in 60 minutes each should last more than 20 seconds+ progressive changes in cervix, preterm premature rupture of membranes(leaking of amniotic fluid per vagina), cervical dilation >1 cm, cervical effacement of 80% or greater, UTI with labour pains after 28 weeks of gestation, chorioamnionitis, preterm labour due to polyhydramnios or multiple pregnancies. Exclusion Criteria were preterm pregnancy with intra uterine death.

After collection of data and editing Data analysis was done by computer aided statistical software SPSS. The level of significance of 0.05 was used for the study.

Results:

Occurance: The total number of deliveries in the hospital of patients between 28-37 weeks were 1519. Among them 210 patients presented in preterm labour giving frequency of preterm births of 13.82%.

Table-I

Distribution of cases according to gestational age (n=210)

Gestational Age	No of Cases	Percentage(%) (n-210)
28-30 weeks of gestation	40	19.05%
31-33 weeks of gestation	71	33.81%
34-37 weeks of gestation	99	47.14%

Table-I shows maximum number of women(47.14%) were in the gestational age group 34-37 weeks.

Table-II

Distribution of cases according to risk factor from past obstetric history.

Risk Factor	No. of Cases	Percentage (n-210)
Abortion	46	21.90%
Preterm Delivery	30	14.29%
Diabetes	14	6.67%
Hypothyroidism	3	1.43%
Anaemia	55	26.19%
No risk factor found	62	29.52%
Total	210	

Table-II shows 21.9% had previous history of abortion and 14.3% has previous history of preterm delivery.

Table-III

Distribution of cases according to risk factor in present pregnancy.

Risk Factor	No. of Cases	Percentage (n-210)
Vaginal Infection	41	19.52%
UTI	45	21.43%
PROM	52	24.76%
PIH	25	11.90%
Antepartum Haemorrhage (APH)	24	11.43%
Multiple Preganancy	11	5.24%
Polyhydramnius	12	5.71%
No risk factor	31	14.76%
Total	241	

Table-III shows 24.8% cases of PROM, 21.4% cases of UTI and 19.5% cases vaginal infection associated with preterm labour.

Table-IV

Neonatal morbidity associated with prematurity(221 babies, Twin 11 cases)

Neonatal Morbidity	No. of Cases	Percentage (n-210)
Jaundice	71	32.11%
RDS	50	22.6%
Asphyxia	30	13.57%
Sepsis	23	10.40%
Hypoglycemia	25	11.31%
Pneumonia	13	5.88%
Intra Ventricular Haemorrhage	9	4.07%
Total	221	

Table-IV shows that common morbidity of premature newborns were jaundice 32.11%, RDS- 22.6% and asphyxia- 13.57%

Discussion:

In our tertiary care centre the frequency of preterm births from period of June 2014 to December 2015 was 13.82%. This is significantly more than the incidence of preterm birth given by researchers like Sumana and Misra et al;⁵ who reported a frequency of 10-12%. The high occurrence of preterm births in our institute is probably because, being a tertiary care centre dealing with high risk pregnancies, this includes those patients who delivered before term in view of other obstetric indications.

The maximum incidence was found between 34-37 weeks of gestation(47.14%) followed by 31-33 weeks(33.80%) and then between 28-30 weeks(19.04%).

Risk factor of preterm labour was found to be multifactorial. We found a correlation between past obstetric history and the reproductive outcome in the present pregnancy; 21.9% patients presenting with preterm labour had a past history of abortions. Our results were consistent with the finding of Trivedi et al;⁶ Chhabra et al;⁷ and Singh et al;⁸ where 22.6%, 18% and 14.4% subjects respectively had history of previous abortions. About fourteen percent patients in our study had history of preterm delivery in the previous pregnancies. Sigh Uma et al;⁹ also found that 14.4% patients had history of previous preterm delivery. Pandey et al;⁹ also concluded that prior preterm birth is a risk factor for preterm labour and it was identified in 14.4% subjects in their study group. Therefore, a detailed past obstetric history should be taken in all antenatal patients and those with a prior history of spontaneous abortion or preterm births should be counseled regarding the risk of preterm labour in the present pregnancy and managed accordingly.

In our study the commonest risk factor for preterm labour was preterm premature rupture of membranes which was associated with 24.8% preterm births. This is an accordance with Singh et al;⁸ study where preterm premature rupture of membranes was associated with 25.9% preterm births.

Another important cause of preterm labour in our study was genitourinary tract infection: 19.5% subjects in our study had vaginal infection. Singh et al;⁸ found positive vaginal culture in 12.25% patients and Deka et al;¹⁰ found that cervical infection was present in as many as 55% patients with preterm labour; 21.4% patients in the study group had urinary tract infection. Similar finding were reported by pandey et al;⁹ Chhabra et al;⁷ and Singh et al;⁸ who found and incidence of 20.34%, 14% and 8.4% respectively confirming that UTI is an important factor for preterm labour. This means that it is important to diagnose UTI early and treat it aggressively to prevent preterm labour.

Antepartum haemorrhage contributed to 11.4% preterm birth in our study. Tocolysis was not offered to these patients and they were allowed to deliver.

This is in accordance with the finding of Singh et al;⁸ who also found that antepartum haemorrhage either led to spontaneous onset of preterm labour or induced labour in view of abruption placenta in 10.8% patients.

Multiple pregnancies were found to be associated with preterm labour in 5.2% of cases in our study. Arias et al;¹¹ also reported that multiple pregnancy was responsible for 12-25% of all preterm deliveries.

The most common neonatal complications in our study group were jaundice(32.1%), RDS(22.6%) and Asphyxia(13.5%). Sonkusare et al;¹² reported the incidence of jaundice as 50.80%, RDS as 20.16% and sepsis as 23.39%. These were also the common complications in studies carried out by Singh et al;⁹ and Venket et al;¹³. The incidence of RDS was maximum in extremely premature babies and reduced significantly with increasing birth weight, gestational age > 34 weeks and in patients who received two antenatal doses of injection Dexamethasone.

Conclusion:

This study concludes that the frequency of preterm birth from period of June 2014 to December 2015 was 13.82% in Monno medical College hospital, Manikganj. Following etiological factors were significantly associated with preterm birth i.e. previous history preterm delivery or abortion, premature rupture of membranes, anaemia, polyhydramnios, multiple pregnancies pregnancy induced hypertension.

The occurrence of UTI and genital tract infection was more in patients presented with preterm labour. Neonatal morbidity and mortality was more in babies delivered prematurely and the most common cause of neonatal mortality among preterm infants was extreme prematurity and RDS.

Preventive measure may be taken nationally and institutionally to reduce prematurity and its consequences.

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