Determinants of Preterm Labour in a Rural Medical College Hospital in Western Maharashtra

Shubhada A,1 Kambale SV,1 Phalke BD1

1Department of Preventive and Social Medicine, Padmshree Dr Vitthalrao Vikhe Patil Foundation’s Medical College, Ahmednagar, India.

Aims: This study was done to estimate the incidence of preterm labour and to study the causes of preterm labour in a teaching hospital.

Methods: A cross sectional study was conducted in a medical college hospital in rural area among all patients who delivered during study period. Data was collected by interview technique and analyzed by appropriate statistical methods.

Results: Total 2105 deliveries occurred during study period and the incidence of preterm delivery in the study was 15%. Incidence of preterm labour was comparatively more among multigravida (49.5%). Out of 315 preterm labour cases, 234 (74.25%) were from low socioeconomic status. Forty-one percent preterm labors were idiopathic, 17% cases had maternal- fetal complications and 15% cases had recurrent urinary tract infections. Significant association was observed between previous history of preterm labour and current preterm labour after applying Z test.

Conclusions: Incidence of preterm labour was 15% among the hospital deliveries in a teaching hospital in rural area. Preterm labour was more common among women of low socioeconomic status, among multigravida and among women having previous history of preterm labour.

Keywords: incidence of preterm labour, determinants of preterm labour, preterm labour.

INTRODUCTION

Preterm birth is a major determinant of neonatal mortality and morbidity and has long-term adverse consequences for health.1 Of all early neonatal deaths that are not related to congenital malformations, 28% are due to preterm birth.2 Children who are born prematurely have higher rates of cerebral palsy, sensory deficits, learning disabilities and respiratory illnesses compared with children born at term.3,4 The estimated 12.9 million preterm births in a multicentre study represent a substantial problem for already overtaxed health, education and social service sectors worldwide. The burden of preterm birth is disproportionately concentrated in Africa and Asia, where about 85% of all preterm births occur (31% and 54%, respectively).5 The incidence of preterm birth in India has been reported to be 14.5%.6

Causal factors linked to preterm birth include medical conditions of the mother or fetus, genetic influences, environmental exposure, infertility treatments, behavioral and socioeconomic factors and iatrogenic prematurity.7

Attempts to prevent preterm birth is one of the most challenging and frustrating problems in public health.8 Proper understanding of the risk factors associated with these deliveries is essential for effective prevention. Therefore present study was conducted to estimate the incidence of preterm labour and to identify and quantify the factors associated with it.

The papers in this journal are published under the terms of the Creative Commons Attribution License. Users are allowed to read, download, copy, distribute, print, search, or link to the full texts of the articles in this journal without asking prior permission from the publisher or the author.
METHODS

This study was conducted in a medical college hospital in rural area in western Maharashtra. All of 2105 patients who had deliveries in study setting during the study period of six months from first July 2010 to 31 December 2010 were included in the study. The study purpose was explained and verbal consent was obtained from study participants. Preterm babies were defined as those babies whose delivery occurred between gestational age 28 weeks and 37 completed weeks while term babies were those whose delivery occurred at or beyond a gestational age of 37 completed weeks but before 42 completed weeks.1

Data collection was done by interview technique. Pre-designed structured proforma was used for data collection. Data collected on maternal profile included maternal age, parity, antenatal care and health problems like antepartum hemorrhage, previous history of pre-term delivery and previous obstetric history.

RESULTS

Total 2105 deliveries occurred during study period; out of them majority of deliveries were full term 1692 (80%), 315 (15%) were preterm and 98 (5%) were post-term. Hence the incidence of preterm delivery in the present study was 15%.

Out of 315 cases of preterm labour, 198 (62.85%) cases were booked and 127 (37.15%) cases were unbooked cases. Incidence of preterm labour was more among multigravida (49.5%) as compared to primigravida (33.3%) and second gravida (17.2%). In our study out of 315 preterm labour cases 187 (59.3%) women underwent caesarean section while 128 (41.7%) women delivered normally. Majority of women (60%) were in the age group of 20-30 years. Out of 315 preterm labour cases, 234 (74.25%) were from low socioeconomic status (class III-V). Majority 116 (36.8%) of cases of preterm labour were idiopathic, 20.6% had maternal or fatal problems and 14.6% had history of recurrent urinary infections (Table 1).

Table 1. Etiology of preterm labours (n=315).

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idiopathic</td>
<td>116 (36.8%)</td>
</tr>
<tr>
<td>Gestational problems (APH, PIH)</td>
<td>065 (20.6%)</td>
</tr>
<tr>
<td>Recurrent urinary infections</td>
<td>046 (14.6%)</td>
</tr>
<tr>
<td>Previous history of preterm labour</td>
<td>046 (14.6%)</td>
</tr>
<tr>
<td>Maternal malnutrition</td>
<td>042 (13.3%)</td>
</tr>
</tbody>
</table>

Fifteen percent of preterm labour cases had previous history of preterm labour and significant association was observed between previous history of preterm labour and current preterm labour after applying Z test (z=2.36, p< 0.005). Twenty-one percent cases of preterm labour had some maternal or fetal problems like hypertension, antepartum hemorrhage however no significant association was noted (z= 1.2, p> 0.005).

DISCUSSION

Preterm birth rates reflect the stark health disparities between developed and developing countries, like many other indicators in the area of maternal and perinatal health.

Incidence of preterm labour reported in developing countries is 9-16%.10 In our study the magnitude of preterm labour was 15%. However Begum et al11 reported the incidence as 23.3% in their study conducted in North India. Similar to present study, a hospital based study in Nigeria reported the incidence as 12% and the incidence reported in the United States was 12.8%.12,13

Preterm labour was more common among lower socioeconomic status in present study, majority of women belonging to class IV and V of economic status had preterm labour. Similar finding was observed in other studies conducted in India and in other countries also.11,14,15 As mentioned in Bulletin of WHO,5 approximately 45-50% preterm labors are idiopathic. In present study 36.8% preterm labors were idiopathic.

History of previous preterm birth or second trimester pregnancy loss is important risk factor associated with preterm birth. In this study also pre-term delivery was significantly associated with previous history of preterm delivery. Other studies had also demonstrated this association.12,14,15 This may be due to the persistence of unidentified factors in some women precipitating preterm delivery. Maternal under-nutrition was commonly observed risk factor among women having preterm labour in present study. Similar finding was observed by Subapriya et al16 and Malvankar et al17 in their studies conducted in India. Ferraz et al18 also mentioned that low maternal weight is an important determinant of preterm labour in their study conducted in Brazil.

Urinary tract infection was significantly associated with pre-term delivery. Urinary tract infection is favored by the morphological and functional changes that take place in pregnancy. In present study maternal or fetal problems and urinary tract infection were important determinants of preterm labour; similar finding was observed in studies conducted in Nigeria and Brazil.12,18
CONCLUSIONS

The incidence of preterm labour was 15% among the hospital deliveries in a medical college hospital in rural area. Preterm labour was common among multiparous women and among women from low socioeconomic status. Previous preterm labour, urinary tract infections, maternal problems and malnutrition were important determinants of preterm labour in the present study.

REFERENCES