

INCIDENCE, RISK FACTOR AND PREGNANCY OUTCOME OF PRETERM LABOUR: ONE YEAR STUDY IN COMBINED MILITARY HOSPITAL, CHITTAGONG

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Summary

Preterm labour & delivery are very challenging obstetric complications encountered by obstetricians. In this study we tried, to determine the incidence, risk factor and pregnancy outcome of patients presenting with preterm labour in Combined Military Hospital. Its a retrospective study in the department of Gynecology & Obstetric, Combined Military Hospital, Chittagong Cantonment from July 2012 to June 2013. Sample size: 116. Inclusion Criteria: Gravid women both primi and multi. Pregnancy of more than 28 weeks duration but less than 37 completed weeks of gestation. Patient is in active labour. Exclusion Criteria: Labour pain started before 28 weeks of pregnancy. Induced preterm labour in any cases like PIH, eclampsia, Preeclampsia, APH, foetal IUGR, etc. Incidence of preterm labour was 22.30% in this study. Preterm rupture of membranes and infection were the commonest causes of preterm labour. Significant risk factor associated with preterm labours in this study are maternal age <20->35 years, low socio-economic condition, lack of proper antenatal care, multiple pregnancy etc. Irrespective of use of a course of steroid neonatal mortality was significantly high in babies before 34 weeks. Other perinatal outcomes of preterm labour are birth asphyxia, RDS, neonatal jaundice and septicemia. High incidence of preterm labour being the most serious problem facing our obstetrician.

The incidence is higher in our set up, compared to the developed countries. As prevention is naturally best way to combat preterm labour, some modifiable risk factors are identified. Health care provider may encounter maternal age, nutritional status, infection and can identify the target population for better prenatal care.

Key words

Preterm labour; Preterm delivery; Uterine tocolytics; Rupture of membranes; Preterm neonate.

Introduction

Preterm labour is one of the important health issue all over the world, which is very challenging for an obstetrician. It is one of the clinical events where normal pregnancy can turn into a high risk one for the mother as well as for the foetus. A delightful experience in a woman's life is her pregnancy. All the expectations become fulfilled with the delivery of a healthy child, but during the pregnancy there is a risk from the beginning to its end. Preterm labor is defined as one where labour starts before 37 completed weeks (259 days) counting from the first day of last menstrual period. The lower limit of gestation is not uniformly defined where as in developed countries it has been brought down to 20 weeks, in developing countries it is 28 weeks [1]. Preterm labour complicates 10-15% of all pregnancies [2]. It is the number one cause of neonatal morbidity and causes 75% of neonatal deaths that are not due to congenital anomalies. Incidence of preterm labor is 23.3% and of preterm delivery 10-69% in India [3]. It is rising world over because of increased frequency of multiple births due to assisted reproductive techniques (ART), more working mothers, increasing psychological stress. There are many predisposing factors for preterm labour. Medical factors like multiple pregnancy, polyhydramnios, persistent vaginal infections. Hence it is a time felt need to as-certain the vulnerable group of woman will help to design a

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strategy for better prenatal, antenatal and intranatal care that will help in early detection and management of preterm labour and reduce the perinatal mortality and morbidity in our military hospital.

Materials & methods

It is a retrospective study. About one hundred and sixteen antenatal women admitted with preterm labour at less than 37 weeks gestational age & more than 28 weeks were recruited. Duration of study July 2012 to June 2013. Both prime and multi gravid women in active labour were included. Labour pain started before 28 weeks pregnancy, induced preterm labour in any cases like PIH, eclampsia, pre eclampsia, APH, foetal IUGR etc were excluded from the study. All those with less than 34 weeks gestation were given steroid intramuscularly at the time of admission and again after 12 hours. Women with rupture of membrane were kept on bed rest and intravenous antibiotics were given, risk factors related to preterm labour and neonatal outcome were recorded and analyzed.

Results

Among the 520 antenatal admissions during study period, 116 were admitted with preterm labour giving an incidence of 22.30%. Age distribution of the pregnant mothers shown in Table I. Maximum patient within 20-35 years of age. Out of 116 cases of preterm labour 22 (18.96%) were <20 years, 84 (72.41%) were between 20-35 years and 10 (8.62%) were more than 35 years of age. Gestational age of the mother maximum between 30-34 weeks of gestation i.e. 76 (65.51%) out of 116 patient 4 (3.4%) were 28-29 weeks of gestational age and 36 (31.03%) between 35-37 weeks of gestational age. 80 patients (68.96%) were under regular antedated check up, 2(1.72%) under no check up and 34 (29.31%) were under irregular antedated checkup also 15 (27%) patient had history of previous preterm delivery and 101 (100%) had no such history. Multiple pregnancies were shown in table II. Out of 116 patient 6(5.1%) were diagnosed multiple pregnancies & rest 110 (94.82%) were single pregnancy. 38(32.75%) patient had ruptured membrane and 78(67.24%) with no rupture of membrane Table II also shows the associated risk factors of study population.

Highest in this group was anaemia. It contributes 30 (25.86%) next to this group was urinary tract infection. 28(24.13%) than pregnancy induced hypertension 22 (18.96%). Diabetes mellitus 16 (13.79%) and chronic hypertension & pre-eclampsia both contributes 10 (8.62%) each. Table III shown mode of delivery of study population. 76 (65.51%) mothers had vaginal delivery and 40 (34.48%) needed caesarean section. Outcome of deliveries of this pregnant mothers were 106(91.38%) live birth and 10(8.62%) were intrauterine foetal death. Table IV showed the outcome of this neonates, 63(54.31%) babies were healthy, 02(1.72%) had RDS, 30 (25.86%) had neonatal jaundice, 6(5.17%) developed septicemia, 6(5.17%) had umbilical sepsis, 2(1.72%) developed neonatal convulsion & 7(6.03%) died during neonatal period.

Table I : Maternal characteristics of of the study population (n=116)

Different variables	Frequency	Percent
Maternal Age (in year)		
<20 years	22	18.96
20 to35 years	84	72.41
>35 years	10	8.62
Gestational Age (in weeks)		
28 to29 weeks	4	3.4
30 to34 weeks	76	65.51
35 to37 weeks	36	31.03
Maternal Antenatal Care		
No	02	1.72
Regular	80	68.96
Irregular	34	29.31
Previous History of Preterm delivery		
Yes	15	27.0
No	101	89.0

Table II : Clinical features of the study population (n=116)

Different variables	Frequency	Percent
Multiple Pregnancy		
Yes	6	5.1
No	110	94.82
Rapture of Membrane		
Yes	38	32.75
No	78	67.24
Associated Medical Condition		
Chronic Hypertension	10	8.62
Pregnancy Induced Hypertension	22	18.96
Pre eclampsia	10	8.62
Diabetes Mellitus	16	13.79
Urinary Tract Infection	28	24.13
Anaemia	30	25.86

Table III : Outcome of Delivery of study population (n=116)

Different variables	Frequency	Percent
Mode of Delivery		
Vaginal	76	65.51
Caesarian Section	40	34.48
Outcome of Delivery		
Live Birth	106	91.38
Intrauterine demise	10	8.62

Table IV : Outcome of the neonates

Different variables	Frequency	Percent
Healthy	63	54.31
Neonatal Jaundice	30	25.86
Septicemia	6	5.17
Umbilical Sepsis	6	5.17
RDS	2	1.72
Convulsion	2	1.72
Neonatal Death	7	6.03

Discussion

Preterm birth complicate 10-15% of all pregnancies [2]. It is the number one cause of neonatal morbidity and mortality and causes 75% of neonatal death [2]. Preterm labor and delivery are not rare. Mc Pheeters et al state that incidence of first time hospitalization for preterm labor is 9% with only 38% delivering in their first episode [4].

According to annual vital statistics in USA percentage of infants delivering before 37 weeks is continuously rising from 11% in 1998 to 12.3% in 2003 [5]. Incidence of preterm labor is showing an increasing trend due to assisted reproduction leading to an increase in multiple birth, early and late procreation, and better obstetrical intervention. Amongst the developing countries. India has a very high incidence of preterm labor (23.3%) corroborating our 22.30% incidence. In UK the incidence is 10% Australia 14.1% [3,6,7]. Maternal age is identified as a risk factor for preterm labour. Dramatic changes in social role of women during the later decades of twentieth century [8]. In the present study, it has been observed that incidence of preterm labour is more in age group of 20-35 years rather than age group of <20 years. Tuck et al observed that the relative risk for delivery before 37 weeks in women over age 35 was increased fourfold as compared to women aged 20-25 [9]. Olausson et al found and increased risk of preterm delivery in teenagers that did not persist over the teenage period. Fedrick et al. [10,11] and Brkowitz have identified an inverse relationship between the age of the women and risk of spontaneous preterm delivery. In the present study, 3.41% preterm labour occurred between 28-29 weeks gestational age, 65.51% occurred in 30-34 weeks and 31.03% occurred in 35-37 weeks. In the Goldenberg et al. study, most preterm labour occurred in 28 weeks of gestational age [12]. In the present study, 68.96% preterm labour occurred in regular antenatal care, 29.31% in irregular antenatal care and 1.72% in without any antenatal care. Irma et al. found that Eighteen per cent of the preterm labour would probably be prevented if patients take antenatal care [13]. Incidence of multiple pregnancy, was 5.1%, rupture membrane was 32.75% and previous history of caesarian section was 27% in this study, Van der pool found that approximately 30% of preterm birth are associated with rupture membranes [14]. Past obstetric history may be one of the strongest predictors of recurrent preterm birth. Given a baseline risk of 10-12%, the risk of recurrent preterm birth after 1, 2 and 3 consecutive preterm births may be increased to approximately 15%, 30% and 45% respectively [15].

In this study 65.51% cases were delivered normally & caesarean section done in 34.48% cases. There was 8.62% cases with intrauterine demise and 91.38% live birth. According to Gonclaves et al intrauterine infections are a major cause of preterm labor, with or without intact membranes and accounts for approximately 25% of cases. Lamont, concludes that infection is responsible in 40% of cases and earlier the abnormal genital tract colonization is detected the greater is the risk of adverse outcome [16,17]. Wright et al identified urinary tract infection (UTI) as a significant risk factor, contributing to 7% of preterm birth [18]. In our study, genitourinary infection contribute 24.13% and anaemia contribute 25.86%, pregnancy induced hypertension 18.96% diabetes mellitus 13.79%. According to the Sehgal et al neonatal hyperbilirubinemia 78% and RDS 65% were the most common causes of morbidity in extremely low birth weight babies [19]. Sing et al reported that there was 21% overall mortality amongst preterm babies delivered at hospital [20]. In our study. 25.86% was neonatal jaundice, septicemia 5.17% and 54.31% babies were without any complication RDS and neonatal convulsion occur in 1.72% cases each. Neonatal death was in 6.03% cases, which indicate comparatively better neonatal care.

Conclusion

The incidence of preterm labour and preterm birth are increasing day by day. Preterm labor and preterm births require early and prolonged hospitalization posing great financial and psychological burden on family. Most etiological factors are modifiable, and preconception counseling should emphasize family planning good nutrition, safe sex, good hygiene, treatment of sexually transmitted diseases, and avoidance of tobacco, and harmful work conditions. All efforts should be made to prolong the pregnancy beyond 34 weeks for better neonatal outcome. Tocolytics help by giving time for steroid coverage so that morbidity due to RDS can be decreased. As prevention is naturally best way to combat preterm delivery, it is important to know which women or group of women are at risk for preterm labour.

Disclosure

All the authors declared no competing interest.

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