

## Preterm Labour Pain & Its Outcome in 50 pts attending at a Tertiary Care Hospital-ICMH

Mahe Jabeen\*<sup>1</sup>, Jebunnesa<sup>2</sup>, Mossammat Dilruba Akter<sup>3</sup>, Anjuman Ara<sup>4</sup>, Md. Shabab Azmaeen<sup>5</sup>

### Abstract

**Introduction:** Preterm labor is the leading cause of neonatal morbidity all over the world. Over the past two decades despite major preventive efforts, the incidence of preterm birth has remained constant at about 5-10% of live births. The etiology is often multifactorial and poorly understood. Currently preterm labour is one of the most challenging problems confronting the obstetricians and perinatologists. With this background the present study was done to find out perinatal outcome in women presenting with preterm labour. **Aims:** To study the fetal and maternal outcome in preterm labor cases. **Materials and Methods:** It was Prospective, single centered, observational study. A total of 50 women with preterm labor in the study period i.e. from June 2019 to May 2020 were included for the study sample. This study carried out at the department of Obstetrics and Gynecology, Institute of Child and Mother Health (ICMH), Matuail, Dhaka, Bangladesh. The data were collected personally through a structural questionnaire. **Results:** Out of 50 subjects, majority of mothers 32(64%) were in age group of 21-30 years followed by 12(24%) in age group of 20 years. Majority 26(52%) of study subjects were primigravida followed by 24(48%) multigravida. Majority 32(64%) of study subjects were in lower class followed by 15 (30%) cases in middle class, 3(6.0%) cases in affluent class. Maximum 31 (62%) cases were unbooked cases and rest 19 (38%) cases were booked. Out of 50 babies who were <2500 grams, maximum 29 (58.0%) were low birth weight followed by 11(22%) being VLBW babies. 5 cases were >2.5 kgs, which are not LBW babies according to WHO Classification of low birth weight. Majority 17 (47.2%) stayed for 1-10 days followed by 9 (25.0%) babies for 11-20 days. Also 7 (19.4%) babies stayed for 21-30 days. **Conclusion:** Preterm infants are at high risk of overall morbidity and mortality. Clinical suspicion, early detection and correction of risk factors, institutional delivery and good neonatal care back up facilities can improve the outcome of preterm labour and decrease the maternal complications as well.

**Keywords:** Feto maternal outcome, Preterm labour.

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### \*1. Corresponding Author:

#### Dr. Mahe Jabeen

Associate Professor  
Department of Obstetrics and Gynecology  
Institute of Child and Mother Health (ICMH)  
Matuail, Dhaka-1362, Bangladesh.  
Email: [rinku.jabeen@gmail.com](mailto:rinku.jabeen@gmail.com)  
Mobile no. +8801763726444

### 2. Dr. Jebunnesa

Assistant Professor  
Department of Lab Medicine  
Institute of Child and Mother Health (ICMH)  
Matuail, Dhaka-1362, Bangladesh.

### 3. Prof. Dr. Mossammat Dilruba akter

Director and Head  
Department of Obstetrics and Gynecology  
Institute of Child and Mother Health (ICMH)  
Matuail, Dhaka-1362, Bangladesh.

### 4. Prof. Anjuman Ara

Department of Obstetrics and Gynecology  
Institute of Child and Mother Health (ICMH)  
Matuail, Dhaka-1362, Bangladesh.

### 5. Md. Shabab Azmaeen

Medical Student , 4th year  
Holy Family Red Crescent Medical College and Hospital  
Dhaka, Bangladesh.

### Introduction:

Babies delivered alive before 37 weeks of pregnancy are complete are considered preterm births according to the WHO. It is the leading cause of death worldwide for children below 5 years of age. Many preterm babies survive in high-income countries but in low- and middle-income countries a lack of adequate newborn care puts the lives of many preterm babies at risk<sup>1</sup>. One of the symptoms that are characterized by premature activation of the final path way of parturition is referred to as preterm labor. There are two possible explanations for preterm labor: either a physiological process that has begun too early or a pathological process that has followed an aberrant stimulation. There may be more than one cause involved in the development of premature labor. The earlier a woman goes into labor, the higher the risk that an underlying pathological condition is involved<sup>2</sup>. Premature babies are at risk of many immediate and long-term complications. Immediate (short term) neonatal morbidity includes respiratory distress syndrome, hypothermia, hypoglycemia, jaundice, intraventricular hemorrhage,

necrotizing enterocolitis, broncho-pulmonary dysplasia, sepsis and patent ductus arteriosus. Long term morbidity includes cerebral palsy, mental retardation and retinopathy of prematurity. Residual mental and motor handicaps are the major deterrents to the optimal development of preterm infant<sup>2</sup>. A higher 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 evaluate the fetal and maternal outcome in preterm labor cases and that proper measure can be undertaken to decrease the preterm birth rate and neonatal morbidity and mortality associated with prematurity.

#### Materials and Methods:

It was prospective, single centered, observational study. A total of 50 women with preterm labor in the study period i.e. from September June 2019 to May 2020 were included in the study with the following criteria gestational age between 28 to 36 weeks, singleton pregnancy, with intact membrane. In preterm labor with regular uterine contractions at least 3 every 10 minutes, associated with cervical dilatation of at least 1cm but not more than 3cm and cervical effacement less than or equal to 50%, Maternal age >18 years, married mothers and Non medico-legal pregnancy. Patients with premature rupture of membranes, preeclampsia, malpresentations, fetal malformations, polyhydramnios, placenta previa and abruptio placentae, severe anemia, intrauterine fetal death, intrauterine growth restriction, Rh isoimmunization and uterine and cervical anomalies were all excluded from the study. The data was entered in Microsoft Excel sheet and SPSS version 26 was used for analysis, incidence and prevalence of fetomaternal outcome, demographic, clinical characteristics of pre-term labor were studied.

#### Results:

**Table-I: Baseline characteristics of the study patients (n=50):**

Variables	Frequency	Percentage (%)
Age group (years)		
≤20	12	24.0
21-30	32	64.0
31-40	6	12.0
Socioeconomic status		
Lower class	32	64.0
Middle class	15	30.0
Affluent class	3	6.0
Parity		
Primigravida	26	52.0
Multigravida	24	48.0
Type of case		
Booked	19	38.0
Unbooked	31	62.0

Table 1 shows the baseline characteristics of the study patients. Out of 50 subjects, majority of mothers 32 (64%) were in age group of 21-30 years followed by 12 (24%) in age group of <20

years. Mean age was 25.35±4.54 ranging from 18 to 38 years. Majority 26 (52%) of study subjects were primigravida followed by 24 (48%) having multigravida. Majority 32(64%) of study subjects were in lower class followed by 15 (30%) cases in middle class, 3 (6%) were in affluent class. Maximum 31(62%) cases were unbooked cases and rest 19 (38%) cases were booked.

**Table II: Distribution of babies of preterm cases according to WHO Classification of low birth weight (n=50):**

WHO classification of low birth weight (in grams)	Frequency	Percentage (%)
<1000 (ELBW)	5	10.0
1001-1500 (VLBW)	11	22.0
1501-<2500 (LBW)	29	58.0
>2500 (normal weight)	5	10.0
Total	50	100.0

\*ELBW: Extremely low birth weight; \*VLBW: Very low birth weight; \*LBW: low birth weight

Table II shows distribution of babies of preterm cases according to WHO classification of low birth weight. Out of 50 babies who were <2500 grams, maximum 29 (58.0%) were low birth weight followed by 11(22%) being VLBW babies. 5 cases were >2.5 kgs, which are not LBW babies according to WHO Classification of low birth weight.

**Table III: Distribution of pre-term cases according to postnatal complications.**

Postnatal complications	Frequency	Percentage (%)
Absent	17	34.0
Present	33	66.0
Lactation insufficiency	15	45.5
Puerperal sepsis	12	36.4
Birth canal trauma - cervix, vagina and perineum	6	18.2
Post-partum hemorrhage	5	15.2
Retained placenta	2	6.1
Episiotomy gape	4	12.1
Post-partum psychosis and depression	4	12.1

Table IV shows distribution of pre-term cases according to postnatal complications. Out of 50 cases, 33 cases had postnatal complications. Majority 15(45.5) mothers had lactation insufficiency followed by Puerperal sepsis in 12 mothers. Also, 6 mothers had birth canal trauma - cervix, vagina and perineum and 4 mothers had post-partum depression and psychosis. Many mothers had more than one complication. Most common complication being lactation insufficiency followed by puerperal sepsis with or without puerperal pyrexia.

**Table V: Distribution of babies of pre-term cases according to complications**

Fetal complications	Frequency	Percentage (%)
Newborn jaundice	33	66.0
Immune system problems	16	32.0
Inborn metabolic error and Hypoglycemia	10	20.0
Birth asphyxia and Respiratory distress	9	18.0
Anemia/Thrombocytopenia	8	16.0
Hypothermia	8	16.0
Necrotizing enterocolitis	7	14.0
Hypoxic ischemic encephalopathy		
Meningitis	7	14.0
Seizure disorders		
PDA/ASD/VSD	6	12.0
Broncho-pulmonary dysplasia	2	4.0

Table V shows distribution of babies of pre-term cases according to complications. Out of 50 babies, newborn jaundice was seen in 33 babies followed by Immune system problems in 16 babies. Metabolism acidosis, inborn metabolic error and hypoglycemia was seen in 10 babies. Many babies had multiple complications. Birth asphyxia and respiratory distress was seen in 9 babies.

**Table VI: Distribution of babies of pre term cases according to duration of NICU stay (n=36).**

Duration of stay (in days)	Frequency	Percentage (%)
01-10	17	47.2
11-20	9	25.0
21-30	7	19.4
>30	3	8.3
Total	36	100.0

Table VI shows distribution of babies of pre-term cases according to duration of NICU stay. Out of 36 babies who stayed in NICU, 17(47.2%) were immediately shifted after birth due to low birth weight and remaining 9(25%) were shifted from mother mostly due to jaundice. Majority 17 (47.2%) stayed for 1-10 days followed by 9 (25.0%) babies for 11-20 days. Also 7 (19.4%) babies stayed for 21-30 days. Only 3 (8.3%) babies stayed for >30 days in NICU.

**Table VII: Distribution of neonates of pre term cases according to cause of death (n=18).**

Cause of death	Frequency	Percentage (%)
Sepsis	5	27.8
Birth asphyxia	4	22.2
Respiratory distress	4	22.2
Metabolic disorders	2	11.1
Neonatal jaundice	3	16.7
Total	18	100.0

Table VII shows distribution of babies of pre-term cases according to cause of death. Out of 18 total neonatal deaths, maximum 5 (27.8%) babies died due to sepsis followed by 4(22.2%) due to birth asphyxia.

**Table VIII: Distribution of babies of pre-term cases according to duration in which neonatal deaths occurred (n=18).**

Duration of NND within (in days)	Frequency	Percentage (%)
≤2	5	27.8
3-8	7	38.9
9-14	6	33.3
Total	18	100.0

Table VIII shows distribution of babies of pre-term cases according to duration in which neonatal deaths occurred. Out of 18 deaths that occurred, majority i.e. 7 (38.9%) occurred within 3-8 days followed by 6 (33.3%) deaths within 9-14 days.

**Discussion:**

In present study, majority of cases 32(64%) were in age group of 21-30 years followed by 12 (24%) in age group of 20 years. Mean age was 25.35±4.54 ranging from 18 to 38 years. In similar study by Dingens et al.<sup>3</sup> from USA, majority (29%) of mothers from preterm group were in age group of 20 -25 years. Lakshmi et al.<sup>4</sup> observed majority of the women in both groups of preterm and term labor were between 20-29 years which is similar to present study. Philip et al.<sup>5</sup> in their study on neonatal outcome of preterm births found no significant association of the maternal age to the neonatal outcome in preterm births in present study which is similar to present study. Following table shows mean age in different studies<sup>3-5</sup>. In present study, majority 32(64%) of study subjects were primigravida followed by 15 (30%) having multigravida. Derakhshi et al.<sup>6</sup> observed double or multiples pregnancies most common in their study, Palomer et al.<sup>7</sup> in their study observed 19.2% of preterm newborns related to the multiple pregnancies, Mohsenzadeh et al.<sup>8</sup> in their study observed 19.7% of premature newborns were due to multiple pregnancies which is not consistent with our study<sup>15-16</sup>. In present study, majority 31(62%) of mothers belonged to lower class followed by 16 (32%) cases in middle class. A study by Ali et al.<sup>9</sup> observed that socioeconomic status was found be lower in preterm cases. Another study by Jain et al.<sup>10</sup> found that preterm labor was more common lower socioeconomic class (58%) which is higher than present study. Lata et al.<sup>11</sup> found more mothers in lower class with BV positive as compared to other socioeconomic classes and this is similar to present study. In present study, majority 29 (58%) babies were having weight <2500 grams followed by 11 (22%) babies having weight between 1001-15000 grams. This is higher as compared to other similar studies as present study had most of deliveries between 32-35 weeks of gestation. Akhter et al.<sup>2</sup> in their study on perinatal outcome in preterm labor found 42% of low birth babies in preterm group which is lower than present study. Laxmi et

al.<sup>4</sup> found that LBW was present in 33.3% of the women in the study group (preterm mothers) and 3.33% in the control group (term mothers). This finding is lower than present study<sup>4</sup>. Seth et al.<sup>12</sup> observed that 20% babies were LBW in preterm group of women which is lower than present study. Henderson et al.<sup>13</sup> discussed that almost 57% of babies were LBW in mothers with gestational period of <37 weeks which is similar finding as present study but the percentage is lower than present study findings. Out of 50 cases, 33 (66%) cases had postnatal complications and 34% had no complications. Majority 15/33(45.5%) mothers had lactation insufficiency followed by Puerperal sepsis in 12/33 (36.4%) mothers. 6/33(18.2%) mothers had birth canal trauma cervix, vagina and perineum and 5/33(15.2%) mothers had post-partum depression and psychosis. Jiang et al.<sup>14</sup> observed that cases with scarred uterus, women who had cesarean section once or more or other previous uterine surgery, occurred in both control and preterm pregnancies, but were significantly increased in the latter which is consistent with present study. Women with placenta previa or abnormal S/D ratio were more likely to have preterm delivery. In present study, out of 50 babies, 36(72%) babies who stayed in NICU, majority 9(25.0%) stayed for 11-20 days followed by 7 (19.4%) babies for 21-30 days. Henderson et al.<sup>13</sup> in their study observed that women with gestational age of 32-36 weeks had 62.4% of babies admitted in NICU which is lower than present study. Laxmi et al.<sup>4</sup> in their comparative study on preterm and term labor found 43.33% babies from preterm group with NICU admission which is lower than present study. NICU stay more than 2 days was seen in 43.33% babies in preterm group which is higher than present study findings of 28.12%. In present study, out of 18(36%) total neonatal deaths. Maximum 10 (27.78%) babies died due to sepsis followed by 08 (22.2%) due to birth asphyxia. Respiratory distress was cause of death in seen in 07 (19.4%) neonates. Out of 18 total neonatal deaths, majority 5(27.8%) had neonates who died due to sepsis. Akhter et al.<sup>2</sup> found 35% neonatal deaths in preterm labor group which similar to present study findings. Respiratory distress was most common cause of NICU admission and mortality which is similar to present study whereas Laxmi et al.<sup>4</sup> discussed 20% neonatal deaths in their study which is lower than present study. Bangal et al.<sup>15</sup> found that 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%. Sepsis, respiratory distress and birth asphyxia was most common cause of NICU admission and mortality which is similar to present study. Singh et al.<sup>16</sup> found that septicemia and hypoxic ischemic encephalopathy were the two most common causes of neonatal morbidity and mortality after RDS, accounting for 16.8% and 9.2% respectively in less than 34 weeks gestational age group. Hyperbilirubinemia developed in approximately 50% of preterm babies

irrespective of gestational age which is higher than present study.

#### 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 encircage in proven cases of cervical incompetence, use of injectable progesterone in idiopathic threatened preterm labour can reduce the incidence of preterm labour. Deliveries in the institution having facilities for neonatal care will improve the perinatal outcome in preterm labour.

**Conflict of Interest:** None.

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