

## Original research article

**Study of fetomaternal outcome in post-dated pregnancy: A retrospective observational study.****Dr. Sonali<sup>1</sup>, Dr. Amrita Rai<sup>2</sup>, Dr. Geeta Sinha<sup>3</sup>****<sup>1</sup>Senior Resident, Obstetrics and Gynaecology, Patna Medical College and Hospital, Patna, Bihar, India.****<sup>2</sup>Assistant professor, Obstetrics and Gynaecology, Patna Medical College and Hospital, Patna, Bihar, India.****<sup>3</sup>Professor, Obstetrics and Gynaecology, Patna Medical College and Hospital, Patna, Bihar, India.****Corresponding Author: Dr. Amrita Rai****Abstract**

**Aim:** To find out the incidence of post-dated pregnancies, associated maternal complications and perinatal morbidity and mortality.

**Material and Methods:** This was a retrospective observational study conducted in the Department of Gynaecology and Obstetrics in Patna medical college and Hospital, Patna, Bihar, India, for 10 months from February 2019 to October 2019. Total 240 patients in the antenatal ward and labour room were selected for the study and they were divided into two groups, Control group with Gestational age 37-40weeks and Study group with Gestational age >40weeks. The maternal outcome was noted in terms of need for cesarean section, postpartum haemorrhage and sepsis. Foetal outcome was noted in terms of intrapartum asphyxia, intrauterine foetal death, admission to neonatal intensive care unit etc.

**Results:** Maximum number of patients belonged to the age group of 25-30 years both in cases (54.17%) and control group (55.83%). The maximum number of patients in the study group (77.5%) belonged to the gestational age of 40-41 weeks while all the controls belonged to 37-40 weeks gestational age. 62.5% of the patients in study group were primigravida and in the control group 54.17% were primigravida. The percentage of LSCS was 27.5% which was higher than in the control group where it was 13.33%. Incidence of instrumental delivery was also higher in the study group as compared to control group (10.83% as compared to 3.33%). Among the indications for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor (11.17%) followed by cephalopelvic disproportion (5.83%). In the control group, most common indication was non progress of labour (5.83%) followed by acute foetal distress (3.33%) and non reactive CTG (3.33%). The maternal complications like PPH and sepsis as well as fetal complications all were higher in the study group as compared to the control group.

**Conclusion:** Considering this, policy of early intervention should be undertaken in post-dated pregnancy to avoid maternal and perinatal complications.

**Keywords:** Maternal complications, Post datism, Perinatal morbidity

**Introduction**

Postdated, post term, post maturity, and prolonged pregnancy is accepted terms by WHO and the International Federation of Gynecology and Obstetrics to describe pregnancy beyond dates (expected date of delivery). As per WHO, post term pregnancy (PTP) is defined as a pregnancy that persists beyond 294 days or 42 weeks of gestation.<sup>1</sup> The reported frequency of PTP is approximately 7%.<sup>2</sup> Prolongation of pregnancy complicates up to 10% of all

pregnancies and carries increased risk to mother and fetus.<sup>3</sup> Post term perinatal mortality is greater than that of term pregnancy in almost all studies reviewed.<sup>4</sup> The growth and survival of most post dated infants suggests that the placental function deteriorates with increasing length of gestation; thus the changes seen in fetuses affected with post maturity syndrome may not be explained by placental findings alone. Vorherr described critical reductions of fetal oxygen supply after 43rd week of gestation by cord blood oxygen content determinations.<sup>4</sup> The combination of continued fetal growth and arrested placental growth may lead to situation of decreasing placental nutrient reserve, compromised fetal circulation and eventually fetal distress. However, a recent electron microscopy study of placental changes in prolonged pregnancy suggests that the uteroplacental ischemia and not placental aging may be more important in genesis of post maturity syndrome.<sup>5</sup> Prolonged pregnancies are associated with an increased incidence of macrosomia. Macrosomia infants account for about 1% of term deliveries and 3-10% of post term deliveries.<sup>6</sup> Post maturity infants particularly with macrosomia are at increased risk of hypoglycemia. They also have increased chance of polycythemia.<sup>7</sup> The maternal risks of post-dated pregnancy are often underappreciated. These include an increase in labor dystocia (9-12% vs 2-7% at term), an increase in severe perineal injury (3rd and 4 th degree perineal lacerations) related to macrosomia (3.3% vs 2.6% at term) and operative vaginal delivery, and a doubling in the rate of cesarean delivery (14% vs 7% at term).<sup>8-11</sup> The latter is associated with higher risks of complications such as endometritis, hemorrhage, and thromboembolic disease.<sup>10,12</sup> As there is fetal and maternal risk associated with post dated pregnancy, need of induction is more with post-dated pregnancy. There is general consideration that perinatal mortality and morbidity controversy is centered on adequacy of different methods for detecting the fetus at risk, the time when testing should be done, the method of monitoring, optimum time for delivery and mode of delivery. The availability of biophysical profile and electronic fetal monitoring can affect the outcome of any given pregnancy. One recent systematic review showed that a policy of labor induction for women with post-dated pregnancy compared with expectant management is associated with fewer perinatal deaths and fewer Caesarean sections.<sup>13</sup> With this the aim of this study was to find out incidence of post-dated pregnancies, associated maternal complications and perinatal morbidity and mortality.

### **Material and methods**

This was a retrospective observational study conducted in the department of gynaecology and obstetrics in Patna Medical College and Hospital, Patna, Bihar, India, for 10 months, after taking the approval of the protocol review committee and institutional ethics committee.

#### **Inclusion criteria**

- Singleton pregnancy
- Cephalic presentation
- Absence of any other maternal complication
- Period of gestation greater than 40 weeks

#### **Exclusion criteria**

1. Previous cesarean section
2. Gestational hypertension
3. Gestational diabetes
4. Malpresentation
5. Abruption
6. Placenta previa

### Methodology

Total 240 patients in the antenatal ward and labour room were selected for the study and they were divided into two groups, Control group with Gestational age 37-40weeks and Study group with Gestational age >40weeks

All the data regarding the age, parity gestational age, any maternal complications like oligohydromnios, intrauterine growth restriction etc was collected. The maternal outcome was noted in terms of need for cesarean section, postpartum haemorrhage and sepsis. Foetal outcome was noted in terms of intrapartam asphyxia, intrauterine foetal death, admission to neonatal intensive care unit etc.

### Results:

Table 1 shows that maximum number of patients belonged to the age group of 25-30 years both in cases (54.17%) and control group (55.83%).

**Table 1: Age wise distribution of cases and controls**

Age (Years)	Number of Cases (%)	Number of Controls (%)
Below -25	37(30.83%)	35(29.17%)
25-30	65(54.17%)	67(55.83%)
Above 30	18(15%)	18(15%)
Total	120	120
Mean $\pm$ SD	27.8 $\pm$ 3.56	26.8 $\pm$ 3.58

**Table 2: Distribution of cases and controls by gestational age**

Period of gestation	Number of Cases (%)	Number of Controls
37-40 weeks	0	120(100%)
40-41 weeks	93 (77.5%)	0
41-42 weeks	27 (22.5%)	0
Total	100	100

Table 2 shows that the maximum number of patients in the study group (77.5%) belonged to the gestational age of 40-41 weeks while all the controls belonged to 37-40 weeks gestational age.

**Table 3: Distribution of cases and controls according to parity**

Parity	Number of cases (%)	Number of controls (%)
Primigravida	75 (62.5%)	65 (54.17%)
Multigravida	45 (37.5%)	55 (45.83%)
Total	120	120

As shown in table 3, 62.5% of the patients in study group were primigravida and in the control group 54.17% were primigravida.

**Table 4: Distribution of cases and controls according to the type of delivery**

Type of delivery	Number of cases(%)	Number of controls(%)
NVD	74 (60.83%)	102(85%)
Instrumental delivery	13 (10.83%)	4 (3.33%)
LSCS	33 (27.5%)	16 (13.33%)
Total	120	120

Table 4 shows that in the study group the percentage of LSCS was 27.5% which was higher than in the control group where it was 13.33%. Incidence of instrumental delivery was also higher in the study group as compared to control group (10.83% as compared to 3.33%)

**Table 5: Distribution of cases and controls according to the indication of LSCS**

Indication of LSCS	Number of Cases (%)	Number of Controls (%)
Acute foetal distress/MSL	14(11.17%)	4(3.33%)
Failed induction	7(5.83%)	0
Non progress of labour	4(3.33%)	8(5.83%)
Non reactive CTG	4(3.33%)	4(3.33%)
CPD	4(3.33%)	0
Total	33	16

As shown in table 5, among the indications for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor (11.17%) followed by cephalopelvic disproportion (5.83%). In the control group, most common indication was non progress of labour (5.83%) followed by acute foetal distress (3.33%) and non reactive CTG(3.33%).

**Table 6: Distribution of cases and controls according to maternal complications**

Maternal complication	Number of cases	Number of controls
PPH	20 (16.67%)	7 (5.83%)
Sepsis	11 (9.17%)	5 (4.17%)
Total	31	12

Table 6 shows the maternal complications like PPH and sepsis all were higher in the study group as compared to the control group.

**Table 7: Distribution of cases and controls according to the foetal outcome**

Foetal outcome	Number of Cases (%)	Number of Controls (%)
No asphyxia	86 (71.67%)	100 (83.33%)
Fetal asphyxia(APGAR score<6/10)	15 (12.5%)	8(6.67%)
Admission to NICU	17(14.67%)	12 (10%)
IUD	2 (1.67%)	0
Total	120	120

Among the foetal outcomes, as is depicted in table 7, 12.5% of infants in the study group had asphyxia as compared to only 6.67% in the control group. 14.67% infants of the study group had to be admitted to the NICU as compared to 10% in the control group. 1.67% was the percentage of intrauterine deaths in the study group as compared to none in the control group.

## Discussion

The present study was conducted to find out the incidence of maternal and perinatal complications in post-dated pregnancies. Total cases were 240 which were enrolled based on inclusion and exclusion criteria. Incidence of post dated pregnancies was more in age group 25 to 30 yrs followed by below 25 years in study group. Majority of post-dated pregnancy were seen in age group of 25 to 30 yrs in this study. Beischer in his study found that majority of post-dated patients belonged to the age group of 25-30 years, while Bancroft et al found that majority of patients belonged to 21-30 years.<sup>14,15</sup> Reddy UM et al found in their study that women who are of advance maternal age are at higher risk of still birth throughout gestation, the peak risk period is 37 to 41 weeks.<sup>16</sup>

In the study, the mean age being  $27.8 \pm 3.56$  years in the study group. Similar studies by Mahapatro<sup>18</sup> and Edenetal<sup>17</sup> have shown the mean age to be  $24.19 \pm 3.30$  and  $25.8$  years respectively. 62.5% of the patients in study group were primigravida which is similar to Mahapatro<sup>18</sup> and Alexander et al's<sup>19</sup> study.

Among the mode of delivery, in the study group the percentage of LSCS was 27.5% which was higher than in the control group where it was 13.33%. Incidence of instrumental delivery was also higher in the study group as compared to control group (10.83% as compared to 3.33%). In a similar study by Mahapatro<sup>18</sup> the rate of LSCS was found to be 28.9% and that of instrumental delivery was 5.72%. In study by Singhal et al.<sup>20</sup> the rate of LSCS was found to be 14.7% and that of instrumental delivery was 8.6%. Davinder et al.<sup>21</sup> s study showed the rate of instrumental delivery as 10.35%.

In this study among the indications for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor (11.17%) followed by cephalopelvic disproportion (5.83%). In the control group, most common indication was non progress of labour (5.83%) followed by acute foetal distress (3.33%) and non reactive CTG(3.33%). Bhriegu R et al<sup>22</sup> in their study also found that Meconium stained liquor with fetal distress was the most common indication for LSCS (23.5%) and in Mahapatro's<sup>18</sup> study, again fetal distress was found to be the most common indication for LSCS(65.5%). In our study, the maternal complications like PPH and sepsis both were higher in the study group as compared to the control group. Among the foetal outcomes, 12.5% of infants in the study group had asphyxia as compared to only 6.67% in the control group. 14.67% infants of the study group had to be admitted to the NICU as compared to 10% in the control group. 1.67% was the percentage of intrauterine deaths in the study group as compared to none in the control group. Bhriegu R et al <sup>22</sup> in their study, also found increased incidence of obstetric complications such as perineal tear, atonic postpartum haemorrhage, and perinatal complications such as fetal distress and meconium aspiration syndrome. Similar studies by Singhal et al.<sup>20</sup> and Alexander et al<sup>19</sup> also revealed increased incidence of maternal and perinatal complications like low Apgar scores and admission into NICU.

### Conclusion

Considering this, policy of early intervention should be undertaken in post-dated pregnancy to avoid maternal and perinatal complications.

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