



## OUTCOME OF POSTDATED PREGNANCY IN A TEACHING HOSPITAL OF KOLKATA, INDIA DURING COVID PANDEMIC

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### ABSTRACT

**Background:** The risks to the fetus increase after 41 weeks mainly due to increasing fetal weight, decline in placental function, oligohydramnios which increase chances of cord compression, and meconium aspiration. Perinatal mortality after 42 weeks is twice as compared to the perinatal mortality at 40 weeks and by 44 weeks the rate is increased up to threefold. In cases of prolonged pregnancy, fetus is more at risk of hypoxia during labor than a fetus at term.

**Methods:** This cross sectional observational study of fetomaternal outcome in post dated pregnancy (Women beyond 40 weeks of gestation) was carried out in the department Obstetrics and Gynaecology, Medical College and Hospital, Kolkata from October 2019 to September 2020, willing to participate and fulfilling the inclusion and exclusion criteria in the study period. Aim is to assess maternal and fetal outcome in postdated pregnancy.

**Results:** In present study among 311 post dated pregnancy women, 86.8% of patients were in the age group of  $\leq 30$  yrs. 50% of the patients had natural onset of labour. At the time of admission 25 (8%) patients were unbooked. Fetal distress was present in 93 (29.9%) of the patients. Normal vaginal delivery was done in 127 (40.84%) of the patients. LSCS was done in 117 (37.62%) of the patients. HIE was present in 47 (15.11%) babies and 3 (0.96%) of the babies were still born. **Conclusions:** Postdated pregnancy was associated with perinatal complications like fetal distress, meconium aspiration syndrome and fetal asphyxia etc. Management of postdated pregnancy is a challenge to obstetrician and a careful advice and monitoring can alleviate maternal anxiety and untoward complications.

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### INTRODUCTION

Postdate, postterm, postmaturity, 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, postterm 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> The prevalence varies depending on population characteristics and local management practices. The incidence of PTP varies depending on whether the calculation is based on the history and clinical examination alone, or whether early pregnancy ultrasound examination is used to estimate gestational age.<sup>3,4</sup> The assessment of the gestational age by early ultrasound examination has reduced the "incidence" of PTP by 50.0%.<sup>5</sup>

Postdated pregnancies may be due to multiple etiologies. Exact etiology is not known but some risk factors are associated with post term pregnancy like parity, maternal age, past history of post term pregnancy, genetics and obesity.<sup>6,7</sup> Management protocol for postterm pregnancy is fetal surveillance for

prolonged pregnancy, induction of labour, during intrapartum care proper monitoring of labour.<sup>8</sup>

Complications to both mother and fetus are seen in post dated pregnancies. It has been reported that in a pregnancy which has crossed the expected date of delivery; there is an increased risk of oligohydramnios, meconium stained amniotic fluid, macrosomia, fetal post maturity syndrome, and caesarean delivery, all of which jeopardize the baby as well as the mother. Prolonged pregnancy has always been regarded as a high-risk condition because perinatal morbidity and mortality is known to rise.<sup>9</sup> The aim of the present study was to analyse the incidence and outcome of pregnancies which crossed the expected date of delivery.

#### Aims and objectives

- To evaluate the incidence of postdated pregnancy
- To assess maternal and fetal outcome in postdated pregnancy.

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## METHOD AND MATERIALS

This was a cross sectional observational study carried out in the department of obstetrics and gynecology, Medical College and Hospital, Kolkata from October 2019 to September 2020 for a period of one year during covid 19 pandemic. Written informed consent was taken from the patient. A total 311 patients were included with non-random sampling method.

### Inclusion criteria

- Pregnant women more than 40 weeks of gestation (last three menstrual cycles regular, not used contraceptive pills for the past 3 months, not conceived during lactational amenorrhea)
- Singleton pregnancy
- Cephalic presentation
- The patients who have given written informed consent to participate in this study were included.

### Exclusion criteria

- Any associated complications such as previous lower segment cesarean section (LSCS), malpresentations, placenta previa, abruption, PIH, gestational diabetes, anaemia, and other medical complications
- Fetal anomalies.

Postdated pregnant patients fulfilling my inclusion and exclusion criteria were included in the study. Detailed history was obtained from the patient about the socioeconomic status, booked/unbooked, the patient's age, obstetric code, gestational age, menstrual history, obstetric history. General physical examination, systemic examination and obstetric examination was carried out. Per speculum and per vaginal examination was done. Blood investigations - complete blood counts, liver function tests, kidney function tests, blood sugar, blood grouping, urine analysis, HIV, VDRL, HBsAg, HCV were done. USG Doppler and NST were done. Decision of delivery route was done as required. Some patients were already in spontaneous labour, some were subjected to induction of labour. If delivery was by caesarean section, the indication was recorded. Perinatal morbidity by low Apgar score meconium aspiration syndrome, neonatal intensive care unit (NICU) admission and mortality if any was recorded. Maternal complications such as postpartum haemorrhage, perineal tear, etc were also recorded

**Statistical analysis:** The data was compiled and codified in Micro Soft Excel spread sheet. Analysis was done by calculating different parameter e.g. mean, median, standard deviation (SD) for continuous variable and proportion, interquartile range for categorical variable. Data display was done by the help of tables and charts. Relationship between independent and dependent variables was done by using various inferential statistical tests For the purpose of analysis software packages like SPSS was utilized.

**Ethical clearance:** The study will be conducted only after obtaining written approval from the Institutional Ethics Committee. Written informed consent will be taken from every study patient or their logical representative

## RESULTS

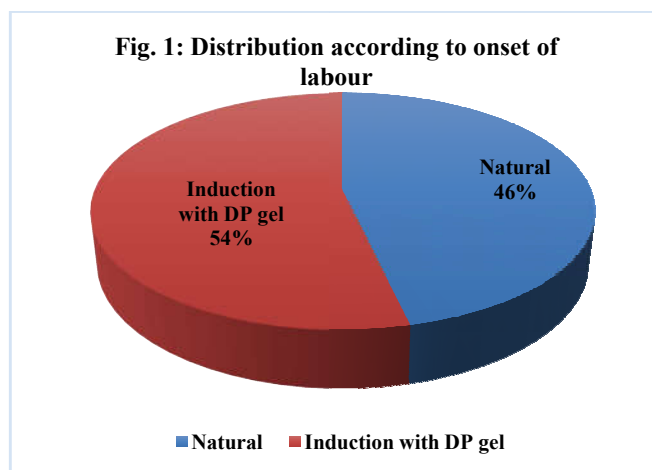
This cross sectional observational study of feto-maternal outcome in postdated pregnancy (Women beyond 40 weeks of gestation) was carried out in the Department of Obstetrics and

Gynaecology, Medical College and Hospital, Kolkata from October 2019 to September 2020, willing to participate and fulfilling the inclusion and exclusion criteria in the study period. Approval of the Institutional Ethics Committee was taken prior to commencement of the study.

**Table 1** Demographic distribution

Age(years)	No.ofcases(N)	Percentage
≤ 30yrs	270	86.8
>30 yrs	41	13.2
<b>Total</b>	<b>311</b>	<b>100</b>
<b>Parity</b>		
Primigravida	147	47.27
Multigravida	164	52.73
<b>Total</b>	<b>311</b>	<b>100.00</b>
<b>Gestational Age (weeks)</b>		
40-week 1 day-41 weeks	209	67.2
41-week 1 day-42 weeks	65	20.9
> 42 W	37	11.9
<b>Total</b>	<b>311</b>	<b>100.0</b>

Majority of patients with history of post E.D.D pregnancy were in the age group of ≤ 30yrs, of 86.8%. Majority 147 (47.27%) of the study participants were belonging to primigravida group and 164 patients (52.73%) were multigravida. Majority 209 (67.2%) of the study participants were included in the group of gestational age of 40 week 1 day to 41 weeks. 65 (20.9%) patients had gestational age from 41 week 1 day to 42 weeks, 37 patients (11.9%) were more than 42 weeks. (Table-1)



**Figure 1** shows that 46% of the patients had natural onset of labour, 54% had induction with DP gel.

**Table 2** Booking Status

Type of cases	No.ofpatient	%
Booked	286	92.0
Unbooked	25	8.0
<b>Total</b>	<b>311</b>	<b>100.0</b>

Table 2 shows that 286 (92%) of the patients at the time of admission were booked and 25 (8%) were unbooked. (Table 2).

**Table 3** Distribution according to fetal distress

Fetal distress	No.ofcases	%
Yes	93	29.9
No	218	70.1
<b>Total</b>	<b>311</b>	<b>100.0</b>

Fetal distress was present in 93 (29.9%) of the patients. Rest were for non progress of labour. (Table 3)

**Table 4** Distribution according to Delivery outcome

Delivery outcome	No.ofcases	%
Normal Vaginal delivery	127	40.84
Forceps	47	15.11
Ventouse	20	6.43
LSCS	117	37.62
<b>Total</b>	<b>311</b>	<b>100.0</b>

Normal vaginal delivery was done in 127 (40.84%) of the patients. Forceps deliver was done in 47 (15.11%) of cases and ventouse delivery was done in 20 (6.43%) of the cases. LSCS was done in 117 (37.62%) of the patients. Among induction of labour by prostaglandin gel in 250 (80.38%) of cases (Table 4)

**Table 5** Distribution according to perinatal outcome

Perinatal outcome	No.ofcases	%
Nil	209	67.20
HIE	47	15.11
Apgar<6	10	3.22
Macrosomia	6	1.93
Meconium Aspiration Syndrome (MAS)	30	9.65
Stillborn	3	0.96
HIE+MAS+Apgar<6	6	1.93
<b>Total</b>	<b>311</b>	<b>100</b>

Table 5 shows that HIE was present in 47 (15.11%), Meconium Aspiration Syndrome in 30 (9.65%), Apgar <6 in 10 (3.22%) of the babies. 3 (0.96%) of the babies were still born. Macrosomia and HIE+MAS+Apgar<6 were present in 6 (1.93%) each.

**Table 6** Distribution according to complications

Complications	No.ofcases	%
Nil	184	59.2
Oligo	63	20.3
Atonic PPH	14	4.5
Cervical Tear	22	7.1
Perineal Tear	18	5.8
Shoulder Dystocia	2	0.6
Shoulder Dystocia with Atonic PPH	2	0.6
Cervical and Perineal Tear	2	0.6
Perineal Tear with Atonic PPH	2	0.6
Atonic PPH+Oligo	2	0.6
<b>Total</b>	<b>311</b>	<b>100.0</b>

Oligo was present in 63 (20.3%) of the patients. Atonic PPH was present in 14 (4.5%), Cervical tear in 22 (7.1%) of the patients. Shoulder Dystocia, Shoulder Dystocia with Atonic PPH, Cervical and Perineal Tear, Perineal Tear with Atonic PPH and Atonic PPH+Oligo was present in 2 (0.6%) each. (Table 6)

**Table 7** Distribution according to CTG (Continuous cardiocography) finding

CTG Pattern	No.ofpatient	%
Normal – 127	Labour Natural- 127	52.05
Non-reassuring – 93	Caesarean section-93	38.11
Abnormal – 24	Caesarean section-24	9.84

Out of 127 normal CTG patients labour natural was 127 (52.05%) Among 93 non reasoning CTG patients caesarean section was 93 (38.11%). In 24 abnormal CTG patients caesarean section was 24 (9.84%). (Table 7)

**Table 8** Induction of labor and mode of delivery

Method of Induction	Number pf patients		Vaginal Delivery		LSCS		Instrumental Delivery	
	No	%	No	%	No	%	No	%
Spontaneous onset of labour	143	46	80	55.94	41	28.67	22	15.38
With Dinoprostone Gel	168	54	67	39.88	76	45.24	25	14.88

143(46%) of patients had spontaneous onset of labour, out of them 80 (55.94%) was normal delivery, 41 (28.67%) was LSCS and 22 (15.38%) was instrumental delivery. 168 (54%) of patients had induction with Dinoprostone Gel, out of them 67 (39.88%) was normal delivery, 76 (45.24%) was LSCS and 25 (14.88%) was instrumental delivery. (Table-8)

## DISCUSSION

This study was conducted in Department of Obstetrics and Gynaecology, Medical College and Hospital, Kolkata from October 2019 to September 2020 after applying inclusion and exclusion criteria and after that data was collected.

The data was entered in an excel sheet and the results were written in a tabulated form and then the results of this study was compared with the previous studies results and statistical analysis was done which has found to be significant.

Majority of patients with history of post E.D.D pregnancy were in the age group of ≤ 30yrs, of 86.8%. Majority 147 (47.27%) of the study participants were belonging to primigravida group and 164 patients (52.73%) were multigravida. Majority 209 (67.2%) of the study participants were included in the group of gestational age of 40 week 1 day to 41 weeks. 65 (20.9%) patients had gestational age from 41 week 1 day to 42 weeks, 37 patients (11.9%) were more than 42 weeks (Table 1). Akhtar P *et al*, observed in their study on pregnancy beyond 41 weeks of gestation that 82% of cases were in the age group of 18 to 29 years.<sup>10,11</sup> In study by Dobariya PV *et al*, there were 58 (69.05%) patients in age group 20 to 30 years, and in study by Patel N *et al*, there were 32 (64%) cases in age group 20 to 30 years.<sup>12,13,14,15</sup> Mahapatroetal, found maximum (72%) of Patients were primigravida.<sup>16,17</sup> Alfirevic and Walkinshaw, Morgreaset *et al*, found in their study that primiparity was significantly associated with post term pregnancy.<sup>17,11</sup>

In the present study that 46% of the patients had natural onset of labour, 54% had induction with DP gel. Nikita Patel *et al*, showed maximum induction by Tab Misoprostol 25 mcg in 12 patients (57.14%) followed by Dinoprostone PGE2 gel in 9 patients (42.85%).<sup>18</sup>

In the present study 286 (92%) of the patients at the time of admission were booked and 25 (8%) were unbooked. Fetal distress was present in 93 (29.9%) of the patients. Mahapatro's study, in which fetal distress was found to be the most common indication for LSCS (65.5%).<sup>16</sup> In the study by Akhtar P *et al*, caesarean section was done in view of fetal distress in 32% cases, non-progress of labour in 25.3% cases and failure of induction in 24%cases.<sup>10</sup>

In the present study normal vaginal delivery was done in 127 (40.84%) of the patients. LSCS was done in 117 (37.62%) of the patients. Shinge N *et al*, studied that maximum patients (53.7%) under wentspontaneousvaginal delivery, 9.5% patients required instrumental delivery and 37% patients required caesarean section as mode of delivery.<sup>14,19</sup>

In the present study HIE was present in 47 (15.11%), Meconium Aspiration Syndrome in 30 (9.65%), Apgar <6 in 10 (3.22%) of the babies. 3 (0.96%) of the babies were still born. Macrosomia and HIE+MAS+Apgar<6 were present in 6 (1.93%) each. Oligo was present in 63 (20.3%) of the patients. Atonic PPH was present in 14 (4.5%), Cervical tear in 22 (7.1%) of the patients. Shoulder Dystocia, Shoulder Dystocia with Atonic PPH, Cervical and Perineal Tear, Perineal Tear

with Atonic PPH and Atonic PPH+Oligo was present in 2 (0.6%) each. In study conducted by Patel N *et al*, maximum morbidity was because of perineal tears/cervical tears in 10 patients (34.44%) and prolonged labour/shoulder dystocia in 10 patients (34.44%) followed by postpartum haemorrhage in 6 patients (20.47%).<sup>13</sup>

In the present study out of 127 normal CTG patients labour natural was 127 (52.05%) Among 93 non-reasoning CTG patients caesarean section was 93 (38.11%). In 24 abnormal CTG patients caesarean section was 24 (9.84%).

In the present study 143(46%) of patients had spontaneous onset of labour, out of them 80 (55.94%) was normal delivery, 41 (28.67%) was LSCS and 22 (15.38%) was instrumental delivery. 168 (54%) of patients had induction with Dinoprostone Gel, out of them 67 (39.88%) was normal delivery, 76 (45.24%) was LSCS and 25 (14.88%) was instrumental delivery. In study conducted by Nikita Patel *et al*, showed induction by Dinoprostone gel in 9 patients (42.85%).<sup>13</sup>

## CONCLUSION AND RECOMMENDATIONS

Postdated pregnancy is associated with fetal, neonatal and maternal complications including morbidity and perinatal mortality. The use of routine ultrasound for dating in the first trimester has decreased the overall rate of postdated pregnancy. Postdated pregnancies require early detection, effective and proper planning management to reduce maternal and neonatal morbidity. The mere fact that the pregnancy is postdated does not necessitate a hasty line of management towards operative delivery. More trainings of peripheral health workers is required for calculation of accurate dating, making diagnosis and proper management to reduce its incidence.

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**Conflict of interest:** None declared

**Ethical approval:** The study was approved by the institutional ethics committee

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