PERINATAL AND MATERNAL OUTCOME IN POST-DATED PREGNANCY: A RETROSPECTIVE STUDY

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ABSTRACT

BACKGROUND

Post-dated pregnancy is defined as one which has crossed expected date of delivery. Incidence is up to 10% of all pregnancies and carries increased risk to mother and foetus. Prolonged pregnancy has always been regarded as a high-risk condition because perinatal morbidity and mortality is known to rise. The interest in postdatism has been recent and the management is controversial. We wanted to analyse the perinatal and maternal outcome of post-dated pregnancies.

METHODS

Data was collected retrospectively from hospital records of all patients delivering after 40 weeks of gestation in our hospital and was collected till the sample size of 100 was reached. Details including demographic profile, booking status, period of gestation in weeks, method of induction of labour (if done), mode of delivery, maternal and neonatal complications if any, were noted. Microsoft excel was used for data entry and data was analysed using SPSS 16. Chi square test was used as the test of significance. This is a retrospective observational study done in June 2018 and included 100 post-dated pregnancies from Jan 2016 to June 2018 in the Department of Obstetrics and Gynaecology in Indira Gandhi Institute of Medical Sciences, Patna.

RESULTS

The incidence of post-dated pregnancy was 9.22% at our centre. Majority of the patients (87%) were ≤30 years age. 71% patients were primigravida. Most of the patients (64%) were unbooked. As the gestational age increased from 40-41 weeks to 41 weeks 1 day and above, the percentage of patients undergoing LSCS increased. More number of patients had to be induced as the gestational age crossed 41 weeks. Rate of LSCS was higher in the group where induction of labour was done. Common indications being failure of induction, non-progress of labour and foetal distress. Complications included increased NICU admission rates, birth asphyxia, macrosomia, shoulder dystocia, increased LSCS rates, oligohydramnios, etc.

CONCLUSIONS

Postdated pregnancy is associated with both, maternal and foetal complications. Timing of induction has to be decided carefully, as early induction leads to failure and increased rates of LSCS, while late induction leads to increased foetal complications.

KEYWORDS

Postdated Pregnancy, Perinatal outcome, Maternal outcome.

HOW TO CITE THIS ARTICLE: Lata, Sinha A, Prasad D, et al. Perinatal and maternal outcome in post-dated pregnancy: a retrospective study. J. Evid. Based Med. Healthc. 2019; 6(21), 1548-1551. DOI: 10.18410/jebmh/2019/312

BACKGROUND

As per WHO, Post term pregnancy (PTP) is defined as a pregnancy that persists beyond 294 days or 42 weeks of gestation.[1] The reported frequency of PTP is approximately 7%.[2]

Financial or Other, Competing Interest: None.
Submission 10-05-2019, Peer Review 13-05-2019,
Acceptance 22-05-2019, Published 27-05-2019.
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DOI: 10.18410/jebmh/2019/312

Post-dated pregnancy is defined as one which has crossed expected date of delivery. Prolongation of pregnancy complicates up to 10% of all pregnancies and carries increased risk to mother and foetus.[3,4] 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.[5,6]

A series of changes occur in the amniotic fluid, placenta and foetus which are associated with prolonged gestation. It has been reported that in a pregnancy which has crossed the EDD, there is an increased risk of intrapartum foetal distress mostly due to oligohydramnios, meconium stained liquor, macrosomia, foetal post maturity syndrome and

Caesarean delivery.[7] Prolonged pregnancy has always been regarded as a high-risk condition because perinatal morbidity and mortality is known to rise.[8] The interest in postdatism (just beyond expected date of delivery) has been recent and the management is controversial, more so with the advent of sonography providing information about placental aging and amount of amniotic fluid.[7,9] The aim of the present retrospective study was to analyse the outcome of pregnancies which crossed the expected date of delivery.

METHODS

It was a retrospective observational study done in June 2018 and included 100 post-dated pregnancies from Jan 2016 to June 2018 in the Department of Obstetrics and Gynaecology in Indira Gandhi Institute of Medical Sciences, Patna.

Inclusion Criteria

- Antenatal cases beyond 40 weeks of gestation aged between 18 yrs. and 35 yrs.
- Delivering at our hospital.
- Patients with regular menstrual cycles and known LMP or with first trimester scan.

Exclusion Criteria

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

Data was collected retrospectively from hospital records of all patients meeting the inclusion criteria till the sample size of 100 was reached. Details including demographic profile, booking status, period of gestation in weeks, method of induction of labour (if done), mode of delivery, maternal and neonatal complications if any, were noted. Microsoft excel was used for data entry and data was analysed using SPSS 16. Chi square test was used as the test of significance. P value < 0.05 was significant.

RESULTS

The total no. of deliveries over the period of 30 months were 1084, out of which 100 patients were beyond 40 weeks of gestation so the incidence of post-dated pregnancy was 9.22% at our centre.

Parameter		Total Number (100)	%
Age Group	≤30	87	87
	>30	13	13
Parity	Primigravida	71	71
	Multigravida	29	29
Booking status	Booked	64	64
	Unbooked	36	36

Table 1. Demographic Profile

Majority of patients (87%) were ≤30 years age, only 13% patients were in age group >30 yrs. 71% patients were primigravida. Most of the patients (64%) were unbooked. (Table 1)

Weeks of Gestation	Number of Cases	%
40 wks. 1 day to 41 wks.	68	68
41 wks. 1 day to 42 wks.	29	29
>42 wks.	3	3

Table 2. Distribution of Cases According to Period of Gestation

68% of patients delivered between 40 weeks 1 day of gestation and 41 weeks of gestation. 29% patients delivered between 41 weeks 1 day of gestation and 42 weeks. While only 3% went beyond 42 weeks for delivery. For the ease of calculations, the last two groups have been taken together as > 41 weeks of gestation (table 2).

Period of Gestation	Normal Delivery	LSCS	Instrumental Delivery
40 wks. 1 day to 41 wks.	46 (67.64)	18 (26.47)	4 (5.85)
≥41 wks. 1 day	17 (53.12)	14 (43.75)	1 (3.12)
Total	63	32	5
Chi square	2.7134: p value 0.0995		

Table 3. Comparison of Mode of Delivery with Gestational Age

A total number of FTNDs were 63, out of which 46 cases were of gestational age 40 weeks 1 day to 41 weeks and 17 cases were of gestational age **≥**41 weeks. A total number of Caesarean sections were 32, out of which 18 cases were of gestational age 40 weeks 1 day to 41 weeks and 14 cases were of gestational age **≥**41 weeks. A total number of instrumental deliveries were only 5, out which 4 were of gestational age 40 weeks 1 day to 41 weeks and 1 was ≥41 weeks. (table 3) The difference was however not significant statistically.

Gestational Age	Total Number of Deliveries	Induced Labour	Spontaneous Labour
40 wks. 1 day to 41 wks.	46	17	29
41 wks. 1 day to 42 wks.	17	11	6
Total	**63**	**28**	**35**
Chi square 3.8710: p value 0.0491			

Table 4. Correlation of Gestational Age with Type of Delivery

By using Chi-square test statistically significant difference was found between gestational age and type of delivery (table 4).

Method of Induction	Number of Patients (100)	Vaginal Delivery (%)	LSCS (%)	Instrumental Delivery (%)
Spontaneous Onset	45	34 (75.5)	11 (24.44)	1 (2.22)
Misoprostol	38	21 (55.26)	14 (36.84)	3 (7.89)
Dinoprostone Gel	15	8 (53.33)	6 (40)	1 (6.66)
Foleys Catheter	2	1 (50)	1 (50)	0
Table 5. Method of Induction of Labour				

45% of patients had spontaneous onset of labour, in others misoprostol, dinoprostone, or Foley's catheter was used for induction of labour. Rate of LSCS was higher in the group where induction of labour was done. (Table 5)

Indications	Total Number of Patients (32)	%
CPD	2	6.25
Failure of Induction	12	37.5
Foetal Distress	8	25
Non-Progress of Labour	7	21.87
Previous LSCS	3	9.37
Table 6. Indications for Lower Segment Caesarean Section		

A total number of Caesarean sections were 32. Maximum number of cases, i.e., 37.5% indications were failure of induction, in 25% cases indications were foetal distress, in 21.87% indications were nonprogress of labour, in 9.37% indication was previous LSCS, in 6.25% it was done for CPD. (table 6)

Weeks of Gestation	Total Number (100)	Baby Well (%)	NICU Admissions (%)
40 wks. 1 day to 41 wks.	68	53(77.94)	15(22.05)
≥ 41 wks.	32	22(68.75)	10(31.25)
Chi square 0.980 p value 0.3221			
Table 7. Distribution of Patients According to Foetal Outcome			

There were 15(22.05%) NICU admissions in patients having 41 wks. 1 day to 41 wks. gestation and 31.25% NICU admissions in ≥ 41 wks. of gestation. The difference was not however statistically significant. (Table 7)

Perinatal Outcome	Number of Babies (100)
APGAR <6	21
Macrosomia	11
Jaundice	8
Meconium Aspiration Syndrome	14
NICU Admissions	25
Stillborn	0
Table 8. Perinatal Outcome	

Birth asphyxia with APGAR <6 was found in 21% cases, meconium aspiration syndrome in 14%, macrosomia in 11%, neonatal jaundice in 8%, with a total of 25% NICU admissions. There were no stillborn (Table 8).

Complications	Number of Patients	%
No Complications	69	69
Oligohydramnios	18	18
Atonic PPH	6	6
Cervical Tear	2	2
Perineal Tear	5	5
Shoulder Dystocia	4	4
Table 9. Maternal Complications		

Oligohydramnios found in 18% cases, cervical tear in 2%, perineal tear in 5% cases, atonic PPH in 36% cases, and shoulder dystocia in 4% cases (table 9).

DISCUSSION

In present study, most of the patients were in age group <30 yrs. (87%) which was similar to the study conducted by Eik-Nes SH in which 80.6% patients were in age group <34 yrs. This may be because mostly reproduction occur in this age group in our country.

In our study, majority cases were primigravida (62%) which is similar to Mahapatro.[10]

In our study, out of 100 cases, 63 cases had vaginal delivery, whereas 32 cases were of LSCS and 5 cases were of instrumental delivery. It was observed that out of 63 vaginal delivery 46 patients delivered between 40.1 weeks and 41 weeks of gestational age, out of 46 cases 29 (63.04%) progressed and delivered spontaneously, and 17 cases (36.95%) delivered after induction of labour. Similar results were seen in a study done by Bhreigu et al in Wardha, Maharashtra with (61.4%) spontaneous deliveries and (38.6%) after induction of labour during the same period of gestation.[11]

Out of 64 vaginal deliveries 17 cases were beyond 41 weeks, out of which 6 cases (35.29%) progressed and delivered spontaneously and 11 (64.70%) cases were delivered after induction of labour, P value was significant <0.0491. similar findings were observed by Ritika et al with 28% spontaneous and 72% induced deliveries respectively.[11]

In our study, overall Caesarean rate was 34% as in study done by Singhal et al. Rate of LSCS was 16.7% and in the study by Mahapatro.[10] It was found to be 28.9% out of 34 pregnancies the rate of LSCS beyond 41 weeks was found to be 5 (14.7%) which was (21.1%) by Kaplan et al. study.[12] The rate of instrumental delivery in our study was 2%, whereas in Mahapatros[10] study, it was found to be 5.72%.

In Singhal et al.[13] study and Davinder et al. study, the rate of instrumental delivery was 8.6% and 10.35%, respectively.

Rate of LSCS was higher where induction of labour was done as compared to spontaneous onset. As the pregnancy goes beyond expected date of delivery, the rate of LSCS, oligohydramnios, and perinatal morbidity increases progressively. Similar findings were observed by Bhreigu et al.[12]

The timely onset of labour and birth is an important determinant of perinatal outcome. Most pregnancies undergoing post-term induction are not post-term when assessed by ultrasound dates. Regardless of whether prolonged pregnancy is considered to be a risk factor requiring intervention, the proportion of pregnancies considered "post-term" can be reduced considerably by a dating policy which takes into account both LMP and USG dates.

Management of post-dated pregnancy is a challenge to obstetrician and a careful advice and monitoring can alleviate maternal anxiety and untoward complications. Pregnancy beyond 40 weeks needs frequent amniotic fluid index monitoring as in our study we found more cases of oligohydramnios. In our study, we observed pregnancy beyond 41 weeks increases rate of Caesarean section and NICU admission. In our study, we concluded that prolonged pregnancy was associated with significant risk of perinatal complications such as foetal distress, meconium aspiration syndrome, and birth asphyxia. There was significantly increased the risk of obstetric complications such as oligohydramnios, perineal tear, atonic PPH, and shoulder dystocia.

CONCLUSIONS

Post-dated pregnancy is associated with serious maternal and foetal complications. Confirmation of dates is an integral part of management. Management of post-dated pregnancy requires timing of induction to be decided wisely as early induction leads to failure and increased rates of LSCS, while late induction leads to increased foetal complications. Pregnancy could be continued till 41 completed weeks with careful foetal monitoring and AFI measurement. Induction could be planned thereafter. Pregnancy should not be allowed to extend beyond 42 weeks due to high risk of foetal complications.

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