Section: Obstetrics and Gynaecology

Original Research Article

MODE OF DELIVERY AND FETO MATERNAL OUTCOME IN POSTDATED PREGNANCY

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ABSTRACT

Background: Post dated pregnancy, defined as pregnancy extending beyond 40 weeks of gestation, is associated with increased maternal and perinatal risks. This study aims to determine the delivery method and the foetal and mother outcome in postdated pregnancy.

Materials and Methods: The study was done in institute of obstetrics and Gynecology at GGH, Kadapa. The study duration was from February 2021 to October 2022 Sample size is 200. Women who were pregnant and above 40 weeks gestational age who were willing to participate and who meet the inclusion and exclusion criteria during the study period were included in this prospective study. Source of the Data: Labour room. Prior to the study's start, institutional ethical committee approval was obtained.

Results: Out of 200 antenatal women, 62% were with Bishop score <6 and 38% with Bishop score >6. 47.5% women spontaneously get in labour and remaining 52.5% were induced. Mode of delivery in 55% was vaginal, LSCS in 40% and 5% ended up in instrumental delivery. Most common maternal complication was PPH (5.5%). Birth asphyxia was the most common fetal complication observed beyond 42 weeks gestational age.

Conclusion: Post dated pregnancy is not currently associated with age or parity. This study provides more evidence that oligohydramnios and meconium stained liquor are related with post dated pregnancy. Poor bishop score is associated with lesser chance of vaginal delivery and majority have undergone LSCS. No consistent relation between sex of newborn and post dated pregnancy.

Keywords: Post dated pregnancy, foetal outcome, maternal complications, induction of labour, perinatal morbidity.

INTRODUCTION

A post dated pregnancy is one that has passed the anticipated due date. Post-term pregnancy refers to pregnancies lasting longer than 42 weeks or 294 days.[1] Pregnancies that continue past the anticipated due date were referred to by Fernandos Arias as prolonged pregnancies.[2] A pregnancy between 41 and 42 weeks is referred to as prolonged pregnancy, while those beyond 42 weeks is post term pregnancy. Some pregnancies may not actually be post dated. Instead, the calculation may reflect an error in gestational age estimation because of faulty menstrual date recall (or) delayed ovulation. ACOG considers first trimester sonography to be the most accurate method to establish or confirm gestational age. (ultrasound up to 13-6/7 weeks). About 4-15% of pregnancies result in being prolonged pregnancies which depend on the method used to calculate gestational age. Boyd and co workers found an incidence of post dated pregnancy of 7.5% when the diagnosis was based on menstrual history, 2.6% when diagnosis was based on early ultrasound examination and 1.1% when diagnosis based on history and ultrasound examination.[3] A term pregnancy is one whose gestational age is between three weeks before and two weeks after the anticipated due date. According to the WHO, a post-

term pregnancy is one that perishes after 294 days (or 42 weeks) of gestation.

Post-dated pregnancy has a number of etiological causes, with erroneous dating being the most frequent one.[4,5] Hereditary, demographic factors like sedentary lifestyle are at risk. Congenital foetal malformations like anencephaly and adrenal hypoplasia which disrupt foetal HPA axis cause post dated due to lower foetal CRH levels.

Objectives

To determine the delivery method and the foetal and mother outcome in post dated pregnancy.

MATERIALS AND METHODS

The study was done in department of obstetrics and Gynaecology at GGH, Kadapa. The study duration was from February 2021 to October 2022. Sample size was 200. Women who were pregnant and above 40 weeks gestational age who were willing to participate and who met the inclusion and exclusion criteria during the study period were included in this prospective study. Source of the Data: Labour room. Prior to the study's start, institutional ethical committee approval was obtained.

Inclusion Criteria

1. Women who gave consent for the study.
2. Women with accurate recall of LMP with at least 3 regular periods before conception and who have not taken any oral contraceptive pill at least 3 months prior to conception.
3. Single foetus in cephalic presentation.
4. Those women who met above mentioned criteria who got admitted in labour ward(booked elsewhere)were also included in the study.

Exclusion Criteria

1. Women who do not give consent for the study
2. Non cephalic presentation of foetus.
3. Congenital anomalies of foetus.
4. Pregnancies complicated by placenta previa and abruptio placenta.
5. RH negative complicating pregnancy.
6. Twin pregnancy.
7. Medical disorders complicating pregnancy like cardiac disease, renal disease, preeclampsia and gestational diabetes mellitus.
8. Previous caesarean delivery.

RESULTS

The current study was a prospective observational study of 200 post dated pregnancies in the department of Obstetrics and Gynaecology at Government Medical College, Kadapa, about their mode of delivery and feto maternal outcome.

Table 1: Distribution of study participants according to age group

Age group in years	Frequency	Percentage
18 – 20	37	18.5
21-25	108	54.0
26-30	41	20.5
31-38	14	20.5
Total	200	100

Majority of the study participants (54%) were in the age category 21- 25years followed by 26- 30 years (20.5%), then 18.5% in 18-20years and at last 7% in 31- 38 years.

Table 2:Distribution of study participants according to Gestational age

Gestational age	Frequency	Percentage
40-40+6	163	81.5
41-41+6	32	16.0
42-42+6	5	2.5
Total	200	100.0

Among the study subjects, the majority of deliveries occurred between 40 and 40+6 weeks of gestation, accounting for 163 cases (81.5%). A smaller proportion of 32 mothers (16%) delivered between 41 and 41+6 weeks, while only 5 cases (2.5%) extended to 42–42+6 weeks. This indicates that most pregnancies reached term and were delivered within the expected gestational period, with only a small percentage extending beyond 41 weeks

Table 3: Distribution of study participants according to Mode of delivery

Mode of delivery	Frequency	Percent
Instrumental	10	5
LSCS	80	40
Vaginal delivery	110	55
Total	200	100

Among the 200 study participants, the majority were vaginal deliveries, accounting for 110 cases (55%). Lower Segment Caesarean Section (LSCS) was performed in 80 mothers (40%), while instrumental

deliveries, such as forceps or vacuum-assisted births, were the least common, reported in 10 cases (5%). This distribution highlights that more than half of the women delivered vaginally, whereas a substantial proportion required LSCS, reflecting current obstetric practices and case complexities.

Table 4:Distribution of study participants according to Maternal Complications

Maternal Complications	Frequency	Percent
Cervical tear	2	1
Perineal tear	4	2
PPH	11	5.5
Nil	183	91.5
Total	200	100

Among the women in the study, the vast majority (183; 91.5%) did not experience any complications during delivery. Among those who developed complications, postpartum haemorrhage (PPH) was the most common, occurring in 11 cases (5.5%). Perineal tears were observed in 4 mothers (2%), while cervical tears were noted in 2 mothers (1%). Overall, maternal complications were relatively infrequent, with PPH constituting the major contributor among the recorded adverse events.

Table 5: Distribution of neonates according to APGAR score at 5 Minutes

APGAR score at 5 Minutes	Frequency	Percent
0 to 3	2	1
4 to 7	3	1.5
8 – 10	195	97.5
Total	200	100

Among the 200 neonates assessed, the majority (195; 97.5%) had an APGAR score between 8 and 10 at 5 minutes, indicating good neonatal adaptation at birth. A small proportion of neonates had moderate depression, with 3 (1.5%) scoring between 4 and 7, while only 2 neonates (1%) had a severely depressed APGAR score of 0 to 3. These findings reflect that most newborns achieved favourable outcomes, with only a minimal percentage requiring immediate resuscitative or specialized care.

Table 6: Distribution of study participants according to Fetal complication

Foetal complication	Percent
Nil	85.5
TTN	1
Still birth	0.5
Shoulder dystocia	0.5
Respiratory distress	6.5
HIE	2.5
Asphyxia with CHD	0.5
Birth asphyxia	3
Total	**100**

In this study, the majority of neonates (85.5%) were born without any complications. Transient tachypnea of the newborn (TTN) was observed in 1% of cases. Adverse outcomes included stillbirth (0.5%) and shoulder dystocia (0.5%). Respiratory distress was reported in 6.5% of neonates, while hypoxic ischemic encephalopathy (HIE) occurred in 2.5%. Birth asphyxia was documented in 3% of cases, and asphyxia associated with congenital heart disease (CHD) was noted in 0.5%. Overall, complications accounted for 14.5% of births, while the remaining 85.5% had no foetal complications.

Table 7: Distribution of study participants according to NICU admission

NICU admission	Frequency	Percent
Yes	32	16
No	168	84
Total	**200**	**100**

In this study, 32 (16%) required admission to the Neonatal Intensive Care Unit (NICU), while the majority, 168 (84%), did not require NICU care. This indicates that most neonates had an uncomplicated postnatal course, with only a small proportion necessitating specialized intensive care.

Table 8: Distribution of study participants according to AFI GROUP and Gestational age

			Gestational age			Total
			40-40+6	41-41+6	42-42+6	
AFI GROUP	2 TO 5	Count	22	7	2	31
		%	13.5%	21.9%	40.0%	15.5%
	6 TO 8	Count	92	17	2	111
		%	56.4%	53.1%	40.0%	55.5%
	9 TO 20	Count	49	8	1	58
		%	30.1%	25.0%	20.0%	29.0%
Total		Count	163	32	5	200
		%	100.0%	100.0%	100.0%	100.0%

Chi square = 3.852, P value = 0.426 (NS)

This study shows that as gestational age advances, number of pregnancies with oligohydramnios increases. This is proven by the fact that 13.5% women in gestational age 40-40+6 weeks were with AFI 2 to 5 and 40% women with 42-42+6 weeks gestational age has AFI of range 2 to 5.

Table 9: Distribution of study participants according to Mode of delivery and Bishop Score

			Bishop Score		Total
			<6	>6	
Mode	Instrumental	Count	6	4	10
		%	4.8%	5.3%	5.0%
	LSCS	Count	67	13	80
		%	54.0%	17.1%	40.0%
	Vaginal Delivery	Count	51	59	110
		%	41.1%	77.6%	55.0%
Total		Count	124	76	200
		%	100.0%	100.0%	100.0%

Chi square = 27.496, P value = 0.001 (S)

In the following study, most of the women with Bishop score >6 delivered vaginally. Overall, majority of women in the study came into the category of <6 Bishop score in the assessment.

Table 10: Correlation Between Onset of Labor and Mode of Delivery

			Mode			Total
			Instrumental	LSCS	Vaginal Delivery	
Labour	Induced	Count	6	34	55	95
		%	6.3%	35.8%	57.9%	100.0%
	Spontaneous	Count	4	46	55	105
		%	3.8%	43.8%	52.4%	100.0%
Total		Count	10	80	110	200
		%	5.0%	40.0%	55.0%	100.0%

Chi square = 1.704, P value = 0.427 (NS)

Out of 200 antenatal women in the study, 95 were induced and 105 were spontaneously set in labour. Comparatively a higher number of women were delivered vaginally both in spontaneous (57.9%) and induced (52.4%).

Table 11: Correlation Between Gestational age and birth Weight

			Gestational age			Total
			40-40+6	41-41+6	42-42+6	
Birth weight GROUP	1.5-2.4	Count	12	4	0	16
		%	7.4%	12.5%	0.0%	8.0%
	2.5-3.0	Count	93	17	3	113
		%	57.1%	53.1%	60.0%	56.5%
	3.1-3.5	Count	49	8	1	58
		%	30.1%	25.0%	20.0%	29.0%
	3.6-4.2	Count	9	3	1	13
		%	5.5%	9.4%	20.0%	6.5%
Total		Count	163	32	5	200
		%	100.0%	100.0%	100.0%	100.0%

Chi square = 3.806, P value = 0.703 (NS)

In the study, beyond the 42 weeks gestational age, 20% babies with birth weight >3.6kg, 20% babies with birth weight 3.1-3.5 kg,60% with 2.5 -3.0kg, and no one is in the range of 1.5-2.4kg.

DISCUSSION

In the present study, most participants,108 (54%) belong to 21-25 years age group and the mean age of study participants is 24.1 years. The least patients, 14(7%) belongs to age group 31-38 years whereas 37(18.5%) members belong to age group 17-20 years and 41(20.5%) belong to age group 26-30 years. It seems that there is no correlation with maternal age and post dated pregnancy. Mahapatro et al,[6]observed that pregnancy beyond 41 weeks of gestation that 55% cases were in the age group of 21 to 25 years. Akhtar et al,[7] observed that pregnancy beyond 41 weeks of gestation that 82% of cases were in the age group of 18 to 29 years.

According to mode of delivery: Caughey et al,[8] observed that maximum patients (68%) underwent spontaneous vaginal delivery, 17% of the patients required instrumental delivery and 14% patient required primary caesarean section. Shinge N et al,[9]studied that maximum patients (53.7%) underwent spontaneous vaginal delivery, 9.5% patients required instrumental delivery and 37% patients required caesarean section as mode of delivery. Kandalgaonkar et al,[10] study found maximum patients (78.12%) underwent vaginal delivery,16.7% women underwent LSCS and 5 women undergone instrumental delivery. The incidence of caesarean section reported by various authors range between 26% to 45% like Schneide (36%),[11] Vaidya (28%),[12] Thakur (42.3%).[13] In present study, 105 (52.4%) women spontaneously set in labour, while 95 (47.5%) were induced. Out of 95% women spontaneously set in labour, 52.4% delivered via vaginal delivery, 46% via LSCS and 5% through instrumental. All instrumental delivery patients delivered via outlet forceps and no one assisted by vaccum.

According to maternal morbidity and mortality: In present study, most common complication noted is PPH (5.5%), Perineal tear (2%), cervical tear (1%) and no maternal mortality noted in this study. In Kandalgaonkar et al,[10] 5.2% women had PPH ,2.08% patients had paraurethral tear,1.04% had episiotomy gaping. Caughey,[8] found that risk of complications like 3rd and 4th degree perineal lacerations, chorioamnionitis, PPH and prolonged labour were all increased among women with gestational age beyond 40 weeks.

In current study, 30 babies (4.5%) admitted in NICU after delivery whereas 170 neonates (85.5%) did not get admitted. Most common foetal complication noted is Respiratory distress(6.5%) followed by birth asphyxia (3%) followed by hypoxic ischaemic encephalopathy in 2.5% and also Transient Tachypnea of newborn (1%), birth asphyxia with congenital heart disease (0.5%), stillbirth (0.5%) and shoulder dystocia (0.5%). A study done by Kandalgaonkar et al,[10]reported that 12.5% of the newborns were admitted to the NICU following delivery. The main cause was respiratory distress syndrome, which affected 4 infants (33.33%); respiratory distress with meconium-stained liquor, which affected 4 infants (33.33%); low birth weight, which affected 2 infants (2.08%); and hyperbilirubinemia, which affected 2 infants (2.08%). According to numerous research, post-dated pregnancies had a higher rate of NICU admission. The most typical reason for NICU admission is asphyxia neonatorum. More number of new born required NICU admission among post dated pregnancy according to Chaudhari et al,[14] study and Transient tachypnoea of new born was common reason requiring NICU admission.

CONCLUSION

According to many studies, foetal jeopardy increased from 40 weeks itself. The diagnosis of post dated pregnancy is still debatable. As the incidence of post dated pregnancy can be decreased by correlating with early scans. The over estimation or under estimation of the gestational age can be solved by increasing the regularity of first trimester scanning practice in our population. Post-dated

pregnancy is not currently associated with age or parity since various studies have not consistently found associations between these two characteristics. 54% belong to age group 20-25 years. 81.5% belong to gestational age of 40-41+6 weeks. 50.5% women were multigravida. With regular antenatal check-up, incidence of post dated pregnancy can be decreased. It can be concluded from the booking status of this study showing 73% un booked cases and 27% booked cases. This study provides more evidence that oligohydramnios and meconium stained liquor were related with post-dated pregnancy. As gestational age advances, the chance of severe oligohydramnios and chance of meconium stained liquor improved significantly in this study. 55.5% women has AFI between 6 to 8.24. 5% pregnancies are with meconium stained liquor. 62% of the women with post dated pregnancy has bishops score <6. Poor Bishop score is

associated with lesser chance of vaginal delivery and majority have undergone

LSCS. In induced group, majority has undergoneLSCSdueto failedinduction and in spontaneous group, most common indication of LSCS is oligohydramnios and foetal distress. According to the studies that have been done so far, there is no correlation between post-dated pregnancy and birth weight. In this study male new born are comparatively more than female neonates but there is no consistent relation seen between sex of the new born and post dated pregnancy in the studies observed.

Most of the studies including the current study has noted that most of the babies are with APGAR score at 1 minute >7 is 87% which has improved to 97.5% at 5 minutes. Most common maternal complication noted in the study is postpartum haemorrhage followed by perineal tear and cervical tear. Maximum number of babies admitted in NICU due to respiratory distress followed by birth asphyxia. Luckily there is no neonatal or maternal death in the study.

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Ethical clearance: The study was taken up after the approval ofthe Ethical committee of the medical college, IEC No.ACAD/E3B/2020-21, dt 12.02.2021

Conflict of Interest: Nil

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