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A PROSPECTIVE AND OBSERVATIONAL STUDY ON FETOMATERNAL OUTCOME IN POSTDATED PREGNANCY

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Abstract

Background: Postdated pregnancy is gestation longer than 40 weeks or 280 day. Prolonged pregnancy is defined as any pregnancy that last 294 days or more. Reported frequency of post term pregnancy range from 3 - 1 4 percent with an average of about 10 percent. Several studies have concluded that these pregnancies are accompanied by a rise in perinatal morbidity and mortality. The presumed etiology for this rise is placental insufficiency. Abnormalities such as congenital anomalies, oligohydramnios, meconium aspiration, fetal asphyxia, fetal dysmaturity, macrosomia and shoulder dystocia are commonly observed in these pregnancies

Materials and Methods: This study was conducted in the Department of Obstetrics and Gynecology, after approval from the Ethics Committee, from January 2019 to September2020 on 150 patients in the department of Obstetrics and Gynaecology, willing to participate and fulfilling the inclusion and excliusion criteria in the study period.

Results: Of the total 150 women, 122 (81.34%) were in 40 weeks group; 28 (18.66%) in 41 weeks group and 0 (0%) were in > 42 weeks group. Most women (89.3%) were between 20-35 years of age. Among 150 women, 40 (26.6%) went into spontaneous labor, 87(8.0%) were induced andn23 (15.34%) was taken for caesarian section. Misoprostol, Dinoprostone gel and oxytocin were the different modes of induction (Table 7). Misoprostol was used in the majority of inductions followed by Dinoprostone gel. The success rate between these two is almost similar (92.45% & 95.1%).Lscs rate was 15.33%.Most of the newborn had weight between 2.5-3.5kg in 68.25% of women in gestational age >40 weeks.

Conclusions: The present study, we conclude that postdated pregnancy can be considered as a high risk factor from the point of fetal outcome as there is more fetal morbidity.

Keywords: High risk pregnancies, maternal mortality, Outcomes, Perinatal mortality, postdated pregnancy.

Introduction

Postdated pregnancy is gestation longer than 40 weeks of 280day. Prolonged pregnancy is defined as any pregnancy that last 294 days or more.[1]

Terms:

1) Early term: 37 0/7 weeks through 38 6/7weeks
2) Full term: 39 0/7 weeks through 40 6/7weeks
3) Late term: 41 0/7 weeks through 41 6/7week
4) Post term: 42 0/7 weeks and beyond

Indian Perspective

It has been widely accepted that factors like race ethnicity affect the duration of pregnancy with Asian and African Americans having a shorter duration.[2]

A study of Indian women by Mathai M et al found that the median gestation at delivery following spontaneous labour was 39 weeks[3].

American College of Obstetricians and Gynecologists (1997):

Definition of prolonged pregnancy is 42 completed weeks (294 days) or more from the first day of the last menstrual period.

Post maturity:

This should be used to describe the infant with recognizable clinical features indicating a pathologically prolonged pregnancy.

Incidence:

Post term pregnancy varies greatly depending on the criteria used for diagnosis and reported frequencies range from 3 to 14 percent with an average of about 10 percent .What is wrong with being post dates?. Nothing in obstetrics creates more anxiety for the patient and her obstetrician than being "overdue". The obvious reason is that the perinatal morbidity and mortality of the post date pregnancy exceeds that of the term gestation.

Contributing factors:

Maternal factors:

Primiparity

Elderly multipara

Previous prolonged pregnancy.

Maternal weight gain at delivery.

Maternal socioeconomic status.

Sedentary lifestyle

Fetal factors:

Anencephaly (pituitary / adrenal insufficiency).

Placental sulphatase deficiency (a X- linked recessive disorder characterized by male fetuses / low estriols and prolonged pregnancy)

Aims**:** To assess the maternal and fetal outcome and complications in patients presenting with postdated pregnancy in labour room.

Objectives: Objective of the study is to find out the incidence of maternal complications, perinatal morbidity and Perinatal mortality in postdated pregnancies.

Material and Methods:

The study was conducted at the Sir T Hospital Bhavnagar, Antenatal Clinic, Labour ward and Post natal ward after approval from the Ethics committee, from July2019 to September 2020 after taking consent from the patient. Maternity services are provided in the maternity building that consists of seven wards. Four wards which serve as the antenatal and postnatal wards have a total capacity of 90 beds.

Inclusion criteria:

1) Those who crossed expected date of delivery with surety of LMP date or first trimester USG

2) Singleton pregnancy

3) Cephalic presentation in postdated pregnancy

Exclusion criteria:

1**)** Patients having medical disorder like Heart disease, Diabates Mellitus, Renal disease, liver disease, epilepsy) and obstetric complication like Multiple pregnancy, congenital anamoly, preeclampsia and eclampsia and cpd)

2) Cases of previous ceasarean section.

Methodology:

Cases are to be selected randomly

A structured proforma to collect information regarding age, basic check up like height, weight, BMI, vitals, routine ANC work up was done. In this study, determination of gestational age is to be done by LMP, 1 st trimester USG report, and by clinical assessment. Patient who completed 40 weeks of gestational age and who are sure of LMP along with first trimester USG are included in this study group. Complete clinical assessment of postdated patient including per abdomen examination, per vaginal examination with pelvic assessment and associated maternal condition and complication was done. If >40 weeks and if feasible Usg was done to determine liquor amount and IUGR. BISHOP scoring was done to assess the status of cervix. Details regarding type of onset of labour(spontaneous/induction) and mode of delivery were noted Any intrapartum and third stage complication occurring in the mother was noted Patient in whom labour started spontaneous or induction was done but ultimately LSCS was required for any indication were classified under LSCS while calculating mode of delivery. Baby details including birthweight APGAR score were noted and babies in neonatal ward were followed upto 7 days.

Result:

In table 1 Out of the 150 women 81.34**%** was found to be in 81.34% in 40w-40w6day and 18.66% was in 41week - 41week6day and 0 were in >42group.89.33% of women was found to be in 21-35 years of age.81.34%of women was found be of geatational age 40week-40week6day.54.6%of women were found to be primigravida where 45.44 were multigravida.85.33%of women were booked cases

Table 1:

Demographic data		Number of participants	Percent (%)
Age group (years)	<20years	14	9.33
	20-35years	134	89.33
	>35years	02	1.34
Gestational age	40w-40w6d	122	81.34
	41w-41w6d	28	18.66
	>42w	00	00
Gravidity	Primi	82	54.6
	Multi	68	45.44
Antenatal care in present institute	Booked	128	85.3

Table 2**:** Out of the 150 women 26.66%has delivered vaginally, 58% of women were induced successfully and 15.34% has undergone LSCS.Out of the 87 women56.3% of women were induced by misoprostol 43.7%was induced with cerviprime .In our instituite oxytocin was not used for induction.Our instituite LSCS RATE WAS 15.33%. MSL and Obstructed labour were the leading cause of lscs. 78% of women had Bishop score of>6.

Table 2:

Clinical parameters		Number of participants	Percent (%)
Mode of delivery	Spontaneous vaginal	40	26.66
	Successful induction	87	58.00
	Lscs	23	15.34
Type of induction	Misoprostol	53	56.3
	Dinoprostone	41	43.7
	Oxytocin	00	00
LSCS indication	Msl	07	4.66
	Fetal distress	03	2
	Failed induction	01	0.66
	Severe oligo	03	2
	Obstructed labor	05	3.33
	Npol	04	2.66
LSCS rate			15.33
Bishop score	<4	16	10.6
	5-6	17	11.33
	>6	117	78
Instrumental delivery	Vacuum	08	5.3%
	Forceps	00	00

Out of 150 women, 66.66% of women had birth weight of 2.5kg to 3.5kg.Out of 150 women, 1.33% of women had

postpartum haemorrhage and cervical tear, 2.66% of women had prolonged labour 0.66% women had paraurethral tear 94% of women had none of the complication.92.67% of women had APGAR score of>7.In my study neonatal mortality rate was found to be 1.33% and Intrauterine fetal death was found to be 3.33%.

Table 3:

Clinical parameters		Number of participants	Percent (%)
Birth weight	<2.5kg	32	22.68
	2.5-3.5kg	100	66.66
	>3.5kg	16	10.66
Maternal complication			
	PPH	02	1.33
	Complete perineal tear	00	00
	Cervical tear	02	1.33
	Wound infection	00	00
	Prolonged labour	04	2.66
	Paraurethral tear	01	0.66
	None	141	94
Apgar score			
	<4	02	1.33
	4-7	09	6.00
	>7	139	92.67
Perinatal mortality	Neonatal mortality	02	1.33
	IUFD	05	3.33

Discussion:

How long should a pregnancy last? Should pregnancy be allowed to run a natural course (or) is intervention necessary? ACOG concludes that "Induction of labor between 410/7 and 42 0/7 weeks can be considered" and "Induction of labor between 420/7 and 42 6/7 weeks is recommended given evidence of an increase in perinatal morbidity and mortality[4] According to Good Clinical Practise recommendations **FOGSI-ICOG 2018** Induction of labor for a low risk pregnancy is recommended to be carried out only after 39weeks.At 39 weeks in low risk nulliparous women , induction of labor results in lower frequency of cesarean delivery without a statistically significant change in the frequency of a composite of adverse perinatal outcomes[5]

- The Objective of the study was to find out the

1. Incidence of maternal complications
2. Perinatal morbidity and

Perinatal mortality in postdated pregnancies

According to gestational age of the patient, In Table-1, the study population is distributed according to gestational age. Of the total 150 women, 122 (81.34%) were in 40 weeks group; 28 (18.66%) in 41 weeks group and 0 0%) were in > 42 weeks group.

Table 4: Comparison according to gestational age

Gestational age	Present study n=150(%)	Madhuri Gupta 2020 N=150(%)	Kandagoankar 2019 n=96(%)
40w-40w6d	81.34	54.7	69.8
41w-41w6d	18.6	27.1	27.1
>42w	0	3.1	3.1

Study by Madhuri gupta(2020) et al[6] suggested that 54.7%were in 40weeks group, 27.1%were found to be in 41weeks group and 3.1%in 42weeks group while study by Kandagoankar VP(2019) et al[7] suggested that 69.8%were in 40weeks group, 27.1%were found to be in 41weeks group and 3.1%in 42weeks group.

As in our institute we follow the policy of induction of labour as soon as patient crosses EDD, more cases are seen in the gestational age group of 40week -40week6days and no patients was found in >42weeks.

According to parity of the patient

Tables 1 show distribution of the subjects according toparity and age respectively. Most women (89.3%) were between 20-35 years of age. Most of the authors agree that pregnancy beyond 40 weeks is found mainly in primigravidae." In our study 54.6% patients were primigravida while in Kandalgoankar study[7] 63.5% patients were found to be primigravida.

Table 5: Comparison according to gravidity

Gravida	Present study N=150	Kandagoankar VP(2019) N=96
Primigravida	54.46	63.5
Multigravida	45.44	36.5

Table 6: Comparison regarding age of the patients:

Age in years	Present study N=150	Madhuri gupta 2020 N=150(%)	Kandagoankar VP(2019) N=96
<20years	9	9.3	11.5
21-35years	89.33	85.3	80.2
>35years	1.34	5.3	8.3

- In the present study 89.3% women were in the age of 21-35years.
- Kandagoankar VPet al[7] in his study found that 80.2% of women were in the age of 21-35years
- Madhuri gupta et al[6] suggested that 85.3% of women were in the age of 21-35years

According to mode of delivery

In our study among 150 women, 40 (26.6%) went into spontaneous labor, 87(8.0%) were induced andn23(15.34%) was taken for caesarian section while in another study conducted by Madhuri Gupta et al[6] suggested that 44.4%went into spontaneous labour ,34% of women needed induction and 16.7% women was taken for LSCS of the total 96 postdated patients and study conducted by Kandalgoankar VP et al[7] suggested that 46.9%went into spontaneous labour ,36.5% of women

needed induction and 16.7% women was taken for LSCS of the total 96 postdated patients.

Table 7: Comparison according to mode of delivery:

Gestational age	Present study N=150(%)	Madhuri gupta 2020 N=150(%)	Kandagoankar VP (2019) N=96(%)
Spontaneous vaginal delivery	26.66	44.4	46.9
Successful induction	58.00	34	36.5
Lscs	15.34	33	16.7

In our study spontaneous delivery rate was found to be 26.6% and successful induction was 58% and Lscs rate is 15.34% while in Madhuri Gupta study suggested that 44.4%of women had spontaneous vaginal delivery 34% of women had successful induction and 33%had LSCS rate and Kandalgoakar suggested study suggested that 46.9%of women had spontaneous vaginal delivery 36.5% of women had successful induction and 16.7%had LSCS rate.

According to type of induction and vaginal delivery rate

Misoprostol, Dinoprostone gel and oxytocin were the different modes of induction (Table 7). Misoprostol was used in the majority of inductions followed by Dinoprostone gel. The success rate between these two is were almost similar (92.45% & 95.1%). In our institute oxytocin drip is not generally preferred for induction. Madhuri Gupta et al[6] in her study proposed that 14.5% of women were induced with misoprostol,64.5% were induced with dinoprostone and 21.1% was induced with oxytocin infusion. Kandagoankar VP et al[7] in his study proposed that 8.89% of women were induced with misoprostol,57.78% were induced with dinoprostone and 33.3% was induced with oxytocin infusion.

Table 8:

Gestational age	Present study N=150(%)	Madhuri Gupta 2020 N=150(%)	Kandagoankar VP (2019 n=96(%)
Misoprostol	56.3	14.5	8.89
Dinoprostone	43.7	64.5	57.78
Oxytocin	0	21.1	33.3

Table 9: Caesarian section rate and indications

Indication (no of women)	Present study N=150	Madhuri Gupta 2020 N=150	Kandagoankar VP (2019 n=96
Fetal distress	03	3	6
Failed induction	01	25	5
CPD		4	4
DTA	05	1	1
MSL	07		
Severe oligo	03		
NPOL	05		
Total	23(15.33%)	33(22%)	16(16.66%)

In our study leading cause of LSCS was MSL ,NPOL AND DTA whereas failed induction was the leading cause of LSCS in Madhuri gupta study[6] and failed induction and fetal distress was the leading cause in Kandalgoankar study[7]. In our study postdated patients with CPD were excluded.The rate of LSCS of our study was quite comparable with Kandalgoankar study[6].

Instrumental delivery

In table 11, 5 patients (4.09%) has undergone vacuum delivery in 40w-40w6days, 3 patients (10.71%) has undergone vacuum delivery and 0 in more than 42weeks.There was no forceps delivery.

Table 9:

Instrumental delivery	Present study N=150	Kandagoankar VP (2019 n=96
Vacuum	08	01
Forceps	00	04

Kandagoankar VP et al[7] in his study proposed that 4 women has undergone forceps delivery and 1 women has undergone vacuum delivery.

According to birth weight

When we compare the baby weight in our study only 10% babies were >3.5kg while it was 21.3% in Madhuri gupta[6] s study as CPD was the exclusion criteria of this study.

Table 10:

Weight (no of women)	Present study N=150(%)	Madhuri Gupta 2020 N=150(%)	Kandagoankar VP (2019 n=96(%)
<2.5KG	32(21.33%)	04(2.68%)	18(18.75%)
2.5-3.5KG	102((68%)	114(76%)	77(80.20%)
>3.5KG	16(10.66%)	32(21.3%)	06(6.25%)
Total	150	150	96

According to maternal morbidity

Postpartum haemorrhage is the commonest maternal complication in postdate pregnancy accounting to 1.33% in our study and 5.20% in Kandalgoankar study[7].While the incidence of perineal trauma is comparable in both the studies.

Table 11:

Maternal complications (no of women)	Present study N=150	Kandagoankar VP (2019 n=96
PPH	2(1.33%)	5(5.20%)
Paraurethral tear	1(0.66)	2(2.08%)
Shoulder dystocia	0	1(1.04%
Episiotomy gap	0	1(1.04%
Wound gap	0	1(1.04%
Cervical tear	2(1.33%)	

According to NICU admission of the babies

In the present study, 11 of the neonates were admitted to NICU after delivery. The reason was jaundice in 2 babies and asphyxia in 4 babies followed by meconium aspiration in 4babies and hypoglycemia in 1 baby. NICU admission rate is high as compared to general population. (12.5%) As per various studies, NICU admission rate is increased in

postdated pregnancies. Most common indication being of NICU admission being meconium aspiration. Out of the 11 NICU admissions,one of the neonates with asphyxia died and one of the neonates due to meconium aspiration expired after NICU admission.

Table 12:

	Present study N=150(%)	Madhuri gupta 2020 N=150(%)	Kandagoankar VP (2019 n=96(%)
NICU ADMISSION	11(7.33%)	40(26.66%)	12(12.5%)
Neonatal mortality	02(1.33%)	05(3.33%)	01(1.04%)
IUFD	05(3.33%)	-	02(2.08%)
Perinatal mortality	07(4.66%)	-	03(3.1%)

Madhuri Gupta et al[6] in her study proposed that 40 neonates(26.7%) was admitted to the NICU out of which neonatal mortality was found to be 3.3%. Kandagoankar VP et al[7] in his study proposed that 12(2.5%) neonates needed NICU admission out of which neonatal mortality was 1.04% and still birth was 2.08% NICU admission rate in our institute is low as many neonates are observed in NICU for 4-6 hours but only 11 required admission when compare with Madhuri Gupta s study[6]. Neonatal and Perinatal mortality of our study is comparable with Kandalgoankar s study[7]

Conclusion:

From the present study, we conclude that, the post dated pregnancy can be considered as a high risk factor from the point of view of fetal outcome as there is more fetal morbidity. Induction of labor can be safely practised at 40 weeks of gestation. Meconium stained liquor and Obstructed labour is the most common indication of caesarean section in both, spontaneous as well as induced labour in post dated pregnancy. Considering the above mentioned reasons of maternal and perinatal outcome, most of the patients will be benefited from more aggressive induction of labour at 40 weeks. Though the correct choice of management remains controversial, according to the present study, it seems reasonable to induce labour at 40 weeks of gestation as maternal and perinatal morbidity is significantly more in > 41 weeks of gestation.

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