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Observational study of postdated pregnancy and its fetomaternal outcome

Aprajita Kumari[1], Abha Prasad[1], Anjana Sinha[2]
[1] P.M.C.H Patna, Bihar, India
[2] Assistant Professor, P.M.C.H Patna, Bihar, India

Abstract
Aims and Objective: Observational study of postdated pregnancy or pregnancy beyond expected date of delivery and its fetomaternal outcome.
Material and methods: This was a retrospective hospital based study conducted on 144 pregnant women as per inclusion and exclusion criteria from the period of November 2018 to October 2019 (Patna Medical College & hospital Patna, Bihar). A detailed history and clinical examination were recorded. Data pertaining to the onset of labour, mode of delivery, caesarean section due to fetal distress/ meconium stained liquor, Apgar score at 1minute and 5minute, NICU admission and perinatal death were analysed. The data obtained were entered in Microsoft excel and were analysed using appropriate statistical test (chi square test). P value of <0.05 was taken as significant.
Results: 63.9 percent Postdated pregnancy were found in 20-25 year of age group. It is most common in primigravida. 52.4 percent were unbooked cases. Out of 144 cases, 88 were delivered vaginally. Beyond 40 weeks rate of caesarean section were 53.06% and instrumental deliveries were 71.43 percent. Most common indication of caesarean section was fetal distress [32.65 percent], followed by meconium stained liquor [28.57%], then CPD [18.36 percent]. 95.8 percent of the patients had live outcome only 4.2 percent had IUD. Perinatal morbidities like NICU admission, MAS, birth asphyxia were seen in 31.25%. Maternal morbidities like wound infections, perineal tear and PPH were found in 18.75% of cases.
Conclusion: With regular antenatal check-up incidence of postdated pregnancy can be reduced. Postdated pregnancy is a high risk pregnancy. Early diagnosis and management with timed referral and induction of labour according to protocol should be done. Proper intrapartum care, by maintaining partograph and cardio-tochography needs to be done. Timed detection and management by caesarean section in fetal distress, failed induction and nonprogress of labour should be done.

Keywords: MAS-Meconium aspiration syndrome, NICU-Neonatal intensive care unit, IUD-intra uterine death, CPD-Cephalopelvic disproportion

Introduction

According to American college of obstetrics and gynaecology [2004] and WHO Postdated pregnancy is beyond 42 completed weeks or 294 days or 14 days more from first day of last menstrual period or expected date of delivery. It is associated with varied feto-maternal complications like non reassuring fetal heart rate pattern in cardiotochography, oligohydramnios due to placental insufficiency, fetal distress in labour, meconium stained liquor and meconium aspiration syndrome, macrosomia, shoulder dystocia, increased incidence of birth trauma due to big size baby and non moulding of fetal head due to hardening of skull. Maternal complications like CPD because of fetal macrosomia in average size pelvis, or contracted pelvis, shoulder dystocia causing maternal trauma, increased rate of C-section and maternal morbidity, labour dystocia at term, severe perinatal injury related to macrosomia, double rate of c-section associated with endometritis, postpartum haemorrhage, and thrombophleblebitis.

Because of various maternal as well as fetal complications different MCH centres adopt different strategies to avert those complicatios.

Incidence

Incidence of postdated pregnancy ranges from 4-19 percent. Incidence of intrauterine death and neonatal mortality at 42 weeks is twice than at 40 weeks and is fourfold at 43 weeks increasing to fivefold at 44 weeks. We can avoid fetomaternal complications by providing good antenatal care and doing induction of labour before post term.

Mechanism of onset of labour is not yet fully understood. Normal term parturition is preceded by structural changes in the cervix starting during early pregnancy. This process of cervical ripening includes softening and dilatation and effacement of cervix. There is evidence that the final ripening of cervix characterized by an inflammatory reaction which is disturbed in postdated pregnancy. Cervical ripening can be done in postdated pregnancy by prostaglandins. As per National, WHO, ACOG, RCOG, guidelines the policy of inducing labour at 41 weeks [288 days] in uncomplicated pregnancies is justified because in more than 41 weeks the incidence of MSL and evidence of uteroplacental insufficiency increases significantly and also reducing the rate of caesarean section.

Accurate dating of gestational age diagnosis of postdated pregnancy as well as recognition and management of risk factors may reduce the adverse fetomaternal outcome.

Recommendation

First trimester ultrasound should be offered ideally between 11-14 weeks to all women as it is a more accurate assessment of gestational age than last menstrual period.

If there is difference of greater than 5 days between gestational Age dated using the last menstrual period and first trimester ultrasound the estimated date of delivery should be adjusted as per the first trimester ultrasound.

If there is a difference of greater than 10 days between gestational age dated using the last menstrual period and second trimester ultrasound. The estimated date of delivery should be adjusted as per the second trimester ultrasound.

When there has been both a first and second trimester ultrasound, gestational age taken by earliest ultrasound.

Women should be offered the options of membrane sweeping at 38-41 weeks and induction at 41-42 weeks following a discussion of risks and benefits.

Fetal surveillance at 41-42 weeks by NST and MANNING.

Majority of the post term pregnancy have no known cause. Primigravida and prior post term pregnancy are most common identifiable risk factors. After one post-term pregnancy, there is 2-3 fold increased risk in subsequent pregnancy.

AIMS and Objectives

To study the observational analysis of prolonged pregnancy and pregnancy beyond expected date of delivery admitted under OBGY department.

1. To study the fetal morbidity and mortality
2. To study the maternal outcome in post term pregnancy.

Material and Methods

Present study was observational study carried out in the department of obstetrics and gynaecology, Patna medical college, Patna during the period of June 2015 to June 2017.

Inclusion criteria

Antenatal cases beyond 40 weeks of gestation with regular menstrual cycle or with known LMP or with review from antenatal paper. EDD established from two or more ultrasound examination 3-4 weeks apart between 12-28 weeks. EDD corresponds to 36 weeks since patient had positive urine pregnancy test.

Exclusion criteria

Congenital anomalies [Anencephaly], renal agenesis, pregnancy induced hypertension, and chronic hypertension, pre-existing or Gestational diabetes mellitus, previous caesarean section, heart disease, APH, PROM, Rh-isoimmunised pregnancy, irregular menstrual cycle and unknown LMP, Multiple gestation, maternal jaundice, maternal systemic disease.

After thorough general, physical as well as systemic examination, Bishop's score was done in every patient. After admitting the patient fetal heart rate record was kept half hourly in the first stage and every 15 minutes in second stage of labour. After ARM the colour of liquor was noted. It can be clear, meconium stained or thick meconium. If the liquor was thick meconium stained and spontaneous delivery was not possible then descision of LSCS was taken. If the liquor was meconium tinged or stained then descision of LSCS or assisted vaginal or instrumental delivery depending upon fetal heart rate pattern and progress of labour.

Results

Data are collected from the pregnant females as per inclusion and exclusion criterias. Total 144 patients were selected. According to the mode of delivery, maternal and perinatal outcome was studied. The data were analysed using Excel and SPSS software. Total 9273 deliveries were done.556 were postdated. Among them 144 cases were included in this study according to inclusion criteria.

Table 1: Distribution of cases according to the indication of lower segment caesarean section-

Indications	No of cases
Fetal distress	16
MSL	14
CPD	09
CPD+MSL	04
NPOL	02
NPOL+ AFI<7	01
NPOL+MSL	01
AFI<5	01
Cervical Dystocia+MSL	01

MSL: meconium stained liquor; CPD: Cephalopelvic disproportion; NPOL: Non progress of labour; AFI: Amniotic fluid index;

Table 2: Comparision of mode of delivery with gestational age VD: vaginal delivery: ID: instrumental delivery

		Mode of Delivery					
		VD	**Percentage**	**LSCS**	**Percentage**	**ID**	**Percentage**
GA [Weeks]	>40	53	60.22	26	53.06	5	71.43
	>41	19	21.59	14	28.57	1	14.29
	>42	16	18.18	9	18.37	1	14.29
TOTAL	88	100		49	100	7	100

Table 3: Correlation of gestational age with maternal complication

	Maternal Complication						Total
	Wound Infection	**PT**	**PPH**	**PL**	**Fever**	**CX Tear**	
GA [Weeks]							
>40	0	2	3	2	0	1	8
>41	3	0	0	2	2	1	8
>42	4	3	2	0	2	0	11
Total	7	5	5	4	4	2	27

P Value= 0.02

PT-perineal tear; PPH: Post-Partum haemorrhage; PL: prolonged labour; CX-cervical

Table 4: Distribution of cases according to fetal outcome

	Frequency	**percent**	**valid percent**	**Cumulative percent**
Alive	138	95.8	95.8	95.8
IUD	6	4.2	4.2	100
Total	144	100	100	

IUD: Intrauterine death

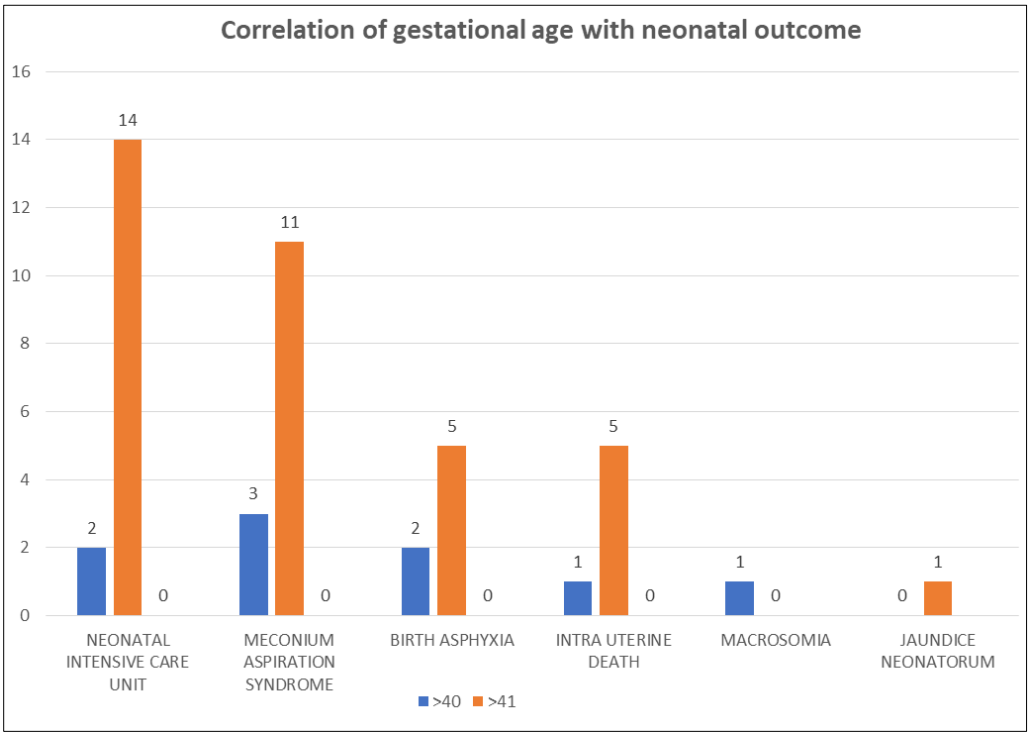

Fig 1

Discussion

Incidence of postdated pregnancy was 6% in this study. This is 8.3 % by injemarsson *et al* and 7.6 %t by Ahanya *et al*, and Zeitlin *et al* found 0.4 to7.1 %. Majority of postdated pregnancy were seen in the age group of 20-30 years. Beischer in his study found that majority of postdated patients belonged to the age group of 25-30 years. Most of the postdated patients were unbooked out of which 76.9 % patients of gestational age more than 42 weeks. 51.4% postdated patients were primigravida, which is similar to mahapatro's and Alexander *et al*'s study. 61.1 % had full term vaginal delivery whereas 34% cases underwent LSCS and 4.95 % cases had instrumental delivery. By Vandana *et al* 53.8% had vaginal delivery, 42.3% had LSCS and 3.8% operative vaginal delivery. Rate of surgical intervention is increased in postdated pregnancy because of meconium stained liquor, non-progress of labour, intrapartum fetal hypoxia and oligohydramnios. Fetal distress is the most common indication [32.6%] for caesarean section. In Mahapatro's study, LSCS for fetal distress was in [65.5%]. Rate of LSCS and vaginal delivery were 53.1% vs 47% and 60.22% vs 40% in 40 week and 41week group respectively. Overall rate of vaginal delivery decreases very much with increasing gestational age. There was 21% rate of induction. For induction cervical ripening agent dinoprostone gel were frequently used in live term pregnancy as non-reassuring fetal heart rate is more associated with misoprostol. Maternal morbidity was found in 18.75% of cases in the form of PPH, wound infection and perineal tear. PPH were found in 3.5% of maternal complications which is similar to comparative study done by Dr. Vijay Kumar *et al*, where rate of PPH was 3.5%.Live birth were found in 95.8% of cases and majority of babies were having apgar score > 7. Singal p *et al*, James Alexander *et al* and Heimstad R *et al* found similar result. Perinatal morbidities like NICU admission, MAS, Asphyxia or low Apgar score were found in 31.25% of cases. Perinatal complication increases with increasing gestational age. So more vigilant and careful fetal monitoring is required in 41 weeks group in comparison to 40 weeker pregnancies. Maternal morbity like PPH, perinatal tear, wound infection and fever were more common in 41 weeker group. These findings corroborate with paliulite *et al* and JT Bishop *et al*.

Conflict of Interest

The authors have no conflict of interest.

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