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Fetomaternal Outcomes of Postdated Pregnancy: A Prospective Observational Study

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ABSTRACT

Background: With increasing gestational age, the risk to the mother and the foetus increases. Our research aims to examine maternal and foetal outcomes in pregnancies that go over the scheduled delivery date in order to establish safe induction times and the most suitable delivery method.

Method: This was a 6-month prospective observational study conducted in the Department of obstetrics and gynaecology, LD Hospital GMC Srinagar from July 2017 to December 2017. The patient provided written, fully informed consent. The non-random sampling strategy resulted in the inclusion of 100 patients in total.

Results: We observed that with an average gestational age of (40.8±2.76) weeks, majority of our patients (77.8%) had gestational age of 40-41 weeks. Majority of our patients (65.6%) had NVD mode of delivery. Meconium stain liquor with fetal distress was indication for cesarean section for 29% of patients, followed by failure of induction as the cesarean indication for 25.8% patients. Respiratory distress syndrome was evident in 8.9%, meconium aspiration syndrome was found in 6.7% patients, 3.3% and there were two neonatal deaths.

Conclusion: Fetal discomfort, meconium aspiration syndrome, and foetal hypoxia were all connected with postdated pregnancy among other perinatal issues. Postpartum haemorrhage (PPH), perineal tears, cervical tears, and shoulder dystocia were among the consequences of childbirth that were more likely to occur. Obstetricians find managing postdated pregnancies challenging, but with good advice and monitoring, they can reduce maternal anxiety and unfavourable outcomes.

Keywords: Last menstrual period, Maternal complication, Postdated, Pregnancy outcome

INTRODUCTION

Any pregnancy lasting 42 weeks or beyond is considered as post-term or postdated pregnancy. In the absence of obstetric intervention, 4% of all singleton pregnancies (with a range of 2% to 7%) and 10% of all singleton pregnancies (with a range of 3% to 14%) continue past 42 weeks of gestation. 833 For the diagnosis, an accurate pregnancy date is essential. The studies that confirm gestational age by routine sonography show the lowest rate of post-term pregnancy. 834 Although the majority of post-term pregnancies have an unknown aetiology, there are few instances where an explanation can be identified. The most frequent observable risk factors for pregnancy extension include primiparity and previous postterm pregnancies.[1-4]Genetic predisposition may also play a role, because in comparison to dizygotic twins, monozygotic twins have a higher concordance for postterm pregnancy. [5-7] Women who are themselves the result of a prolonged pregnancy have a 1.3-fold higher risk of having prolonged pregnancy, and recurrence for prolonged pregnancy is increased two- to threefold in women who previously delivered after 42 weeks.[6,7]

In postdated pregnancies, both the mother and the foetus experience complications. According to reports, there is a higher chance of oligohydramnios, meconium-stained amniotic fluid, macrosomia, foetal postmaturity syndrome, and caesarean delivery in pregnancies that have past the intended date of birth. All of these conditions put both the mother and the unborn child in danger. Due to the documented increase in perinatal morbidity and mortality, prolonged pregnancy has always been classified as a high-risk condition.[8] With increasing gestational age, the risk to the mother and the foetus increases. Our study seeks to examine the mother and foetal outcome in pregnancies that continue past the anticipated due date in order to establish safe induction times and the most suitable delivery method.

METHODS

This was a 6-month prospective observational study conducted in the Department of obstetrics and gynaecology, LD Hospital, GMC Srinagar from July 2017 to December 2017. The patient provided written, fully informed consent. The non-random sampling strategy resulted in the inclusion of 100 patients in total.

Inclusion criteria

Pregnant women over 40 weeks gestation (regular last three menstrual cycles, no birth control use in the previous three months, and no conception during lactational amenorrhea)
Women with singleton pregnancy
Women with cephalic presentation;
Pregnant women with willingness to participate in the study and providing the formal written consent

Exclusion criteria

Any related issues such previous lower segment caesarean sections (LSCS), abnormal presentations, placenta previa, abruption, PIH, gestational diabetes, anaemia, and other medical issues. Fetal anomalies

Patients who met the inclusion criteria were included in the study. Patient's socioeconomic status, booked or unbooked status, age, obstetric code, gestational age, menstruation history, and obstetric history were all thoroughly recorded. The patient underwent a general physical examination, a systemic examination, and an obstetric examination. A vaginal and speculum examination was performed. Complete blood counts, liver and kidney function tests, blood sugar levels, blood grouping, urine analysis, HIV, VDRL, HBsAg, and HCV testing were all performed. NST and USG Doppler were completed. The appropriate path for delivery was chosen. Some patients had labour induction while others were already in spontaneous labour. The indication of a caesarean section delivery was noted. Neonatal intensive care unit (NICU) admission, meconium aspiration syndrome, low Apgar score, and any perinatal fatality were noted. Perineal tear, postpartum haemorrhage, and other maternal problems were also noted.

***Statistical Methods*:**

The recorded data was compiled and entered in a spreadsheet (Microsoft Excel) and then exported to data editor of SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA). Continuous variables were expressed as Mean±SD and categorical variables were summarized as frequencies and percentages. Graphically the data was presented by bar and pie diagrams.

RESULTS

In this section, the results of the study will be described:

Table 1: Demographic characteristics of study patients

Parameter		Number	Percentage
Age (Years)	20-24 Years	61	67.8
	25-29 Years	18	20.0
	30-34 Years	8	8.9
	≥ 35 Years	3	3.3
Parity	Primigravida	59	65.6
	Multigravida	31	34.4
Residence	Rural	62	68.9
	Urban	28	31.1

Mean±SD (Range)=24.3±4.32 (20-38 Years)

We observe that majority of our patients (67.8%) were belonging to the age group of 20-24 years and 65.6% were primigravida. Most of our patients (68.9%) were from rural background

Table 2: Gestational age (Weeks) of study patients		
Gestational age (Weeks)	**Number**	**Percentage**
40-41 Weeks	70	77.8
41-42 Weeks	14	15.6
≥ 42 Weeks	6	6.7
Total	90	100
Mean±SD=40.8±2.76		

We observed that with an average gestational age of (40.8±2.76) weeks, majority of our patients (77.8%) had gestational age of 40-41 weeks, followed by 15.6% with gestational age 41-42 weeks and 6.7% with gestational age ≥ 42 weeks.

Table 3: Mode of delivery among study patients		
Mode of delivery	**Number**	**Percentage**
NVD	59	65.6
LSCS	31	34.4
Total	90	100

Majority of our patients (65.6%) had NVD mode of delivery, followed by 34.4% who had LSCS

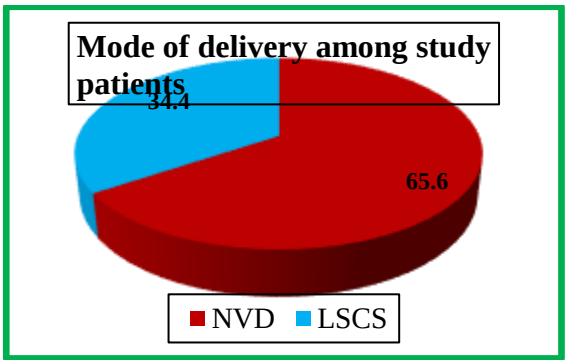


Table 4: Indications for caesarean section among study patients		
Indications for caesarean section	**Number**	**Percentage**
Cephalopelvic disproportion	4	12.9
Failure of induction	8	25.8
Meconium stain liquor with fetal distress	9	29.0
Severe Oligohydramnios	6	19.4
Non progress of labour	4	12.9
Total	31	100

We observe that meconium stain liquor with fetal distress was indication for cesarean section for 29% of patients, followed by failure of induction as the cesarean indication for 25.8% patients, 19.4% had severe oligohydramnios as indication for CS, 12.9% had non progress of labour as CS indication and 12.9% had cephalopelvic disproportion indication for CS.

Table 5: Maternal complications of study patients		
Maternal complications	**Number**	**Percentage**
Postpartum hemorrhage	7	7.8
Perineal tear	4	4.4
Cervical tear	3	3.3
Shoulder dystocia	1	1.1

Postpartum hemorrhage was evident in 7.8% patients, 4.4% had perineal tear, 3.3% had cervical tear, and shoulder dystocia was observed in 1.1% patients.

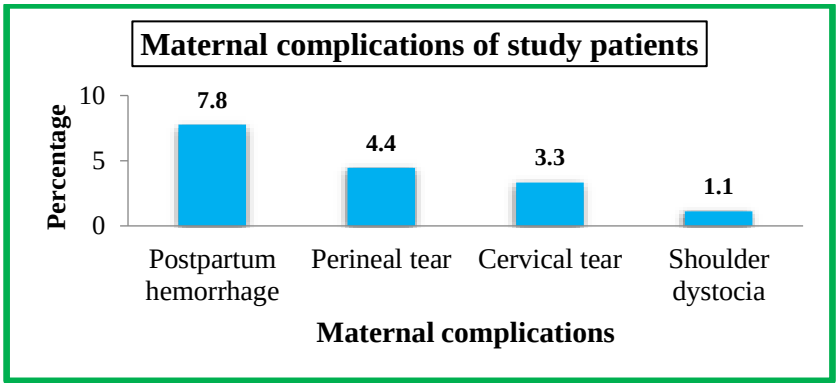
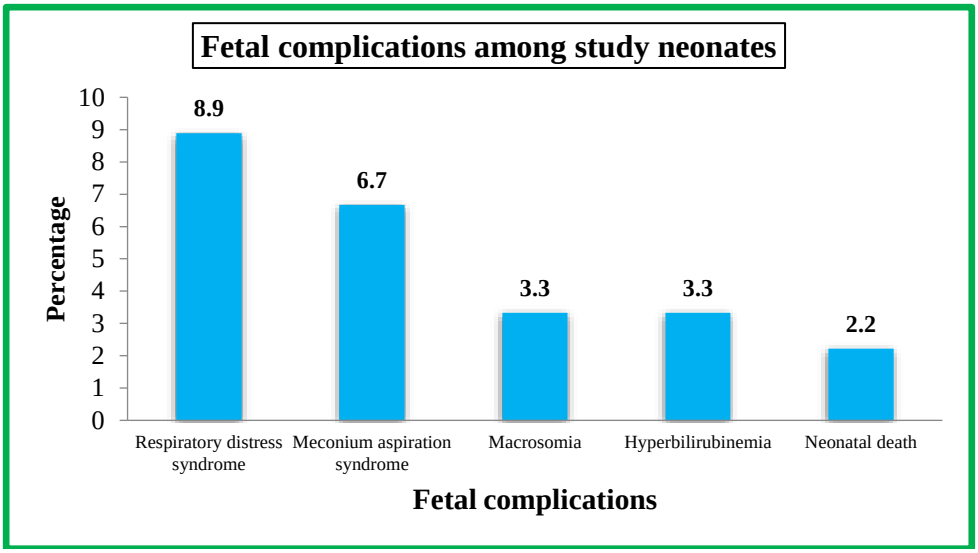


Table 6: Fetal complications among study neonates		
Fetal complications	**Number**	**Percentage**
Respiratory distress syndrome	8	8.9
Meconium aspiration syndrome	6	6.7
Macrosomia	3	3.3
Hyperbilirubinemia	3	3.3
Neonatal death	2	2.2

When the fetal complications were assessed, we found that respiratory distress syndrome was evident in 8.9%, meconium aspiration syndrome was found in 6.7% patients, 3.3% had macrosomia fetal complication, hyperbilirubinemia was found in 3.3% patients, and neonatal death resulted in 2.2%



DISCUSSION

In the present study on the feto-maternal complications among patients with postdated pregnancy, a total of 90 patients who strictly met inclusion criteria were included study. We observed that majority of our patients (67.8%) were belonging to the age group of 20-24 years, followed by 20% patients aging 25-29 years. This is comparable with multitude of studies who have reported that majority of postdated pregnancies belong to the age group of 20-30 years.[9-12] For instance; Singh et al, reported that 72% of their patients were belonging to the age group of 20-25 years, and 18% were belonging to the age group of 26-30 years.[11] The majority of patients (89.47%) in a study by Chhetri et al, were belonging to the age group of 20-35 years, which is compatible with our study.[12] Majority of our patients (65.6%) were primigravida as opposed to multigravida (34.4%). As observed in the present study, primiparity remains one of the predisposing factors for prolonged pregnancies, which has also been reported by Singh et al., Mahaptro et al.[11,13] In their study, Singh et al reported that that majority of women (68%) were primigravida, and according to Mahapatro et al., the majority (72%) of patients were also primigravida.[12,13] Primiparity was strongly related with postterm pregnancy, according to research by Alfirevic, Walkinshaw, Morgreaset, et al.[14,15] Majority of our patients (68.9%) were from rural background, which is in consonance with the study of Singh et al, who reported that (57%) were belonged to rural area.[11] We observed that with an average gestational age of (40.8±2.76) weeks, majority of our patients (77.8%) had gestational age of 40-41 weeks, followed by 15.6% with gestational age 41-42 weeks and 6.7% with gestational age ≥ 42 weeks. This is comparable with numerous studies; Chhetri et al in their study reported that maximum proportion of their patients (56.58 %) had gestational age of 40-41 weeks, followed by 36.84% with gestational age of 41-42 weeks, and 6.58 % with gestational age > 42 weeks.[12] Kandalgaonka et al and Gupta et al, also reported that majority of their patients had gestational age of 40-41 weeks, which is in agreement with our study.[16,17] In the present study, we observed that majority of our patients (65.6%) had NVD mode of delivery, followed by 34.4% who had LSCS. Highest rate of NVD mode of delivery among postdated pregnancies has also been reported by Singh et al, and Shinge N et al.[11,18] In their study, Singh et al found that (66%) delivered normally, caesarean section was performed in 32% while in 2% had instrumental delivery,

which is consistent with our study.[11] Women with straightforward pregnancies should be given the option of induction of labour, whereas women with any complicating issues should be given consideration for LSCS. According to Shinge N et al., 53.7% of their patients had spontaneous vaginal deliveries, 9.5% needed instrumental deliveries, and 37% needed caesarean sections, which is consistent with our data.[18] When the indication for CS section was assessed, we observed that meconium stain liquor with fetal distress was indication for cesarean section for 29% of patients, followed by failure of induction as the cesarean indication for 25.8% patients, 19.4% had severe oligohydramnios as indication for CS, 12.9% had non progress of labour as CS indication and 12.9% had cephalopelvic disproportion indication for CS. In their study, Chhetri et al, reported that the most frequent reasons for a caesarean sections were found to be foetal distress with meconium-stained liquid (36.06%), oligohydramnios (29.22%), and unsuccessful induction (21.31%), which is consistent with our study.[12] Our results are also in line Dobariya et al, who found that the LSCS rate was 32.14 percent and that foetal distress was the most common sign of CS (48.15 percent).[19] The other multiple studies have also reported similar indications for cesarean.[13,18,20] When the maternal complications among studied subjects were assessed, we found that postpartum hemorrhage was evident in 7.8% patients, 4.4% had perineal tear, 3.3% had cervical tear, and shoulder dystocia was observed in 1.1% patients. The maternal problems listed by Singh et al, included partum haemorrhage (PPH) (6%), perineal tear (5%), cervical tear (2%), and shoulder dystocia (1%), which is remarkably comparable to our observation.[11] In a research by Patel N. et al., the most severe morbidity was caused by perineal tears/cervical tears in (34.44%) patients, protracted labor/shoulder dystocia in (34.44%) patients, and postpartum hemorrhage in (20.47%) patients.[21] In their study, Chhetri et al reported that PPH (1.97%), cervical tear (1.97%) and wound infection post-delivery (2.63%) were the commonest maternal complications observed in their patients, which is consistent with our study.[11] No maternal mortality was noted in the present study. When the fetal complications were assessed, we found that respiratory distress syndrome was evident in 8.9%, meconium aspiration syndrome was found in 6.7% patients, 3.3% had macrosomia fetal complication, hyperbilirubinemia was found in 3.3% patients, and neonatal death resulted in 2.2%. According to Singh et al, meconium aspiration syndrome was the most frequent foetal complication, occurring in 8% of cases.[11] Other common foetal complications in their study included respiratory distress syndrome (7% of cases), macrosomia (4% of cases), hyperbilirubinemia (2% of cases), and neonatal death (2% of cases), which is in line with our study.[11] In newborn children exposed to meconium in utero, the term "meconium aspiration syndrome" refers to respiratory compromise with tachypnea, cyanosis, and impaired pulmonary compliance. It is more prevalent in postterm neonates (Kabbur et al).[22]Likewise to our study, the most frequent foetal problems in a study by Chhetri et al. were meconium aspiration syndrome (8.55%); however, unlike to our study they also reported birth asphyxia (12.50%).[11] According to Kistka et al., meconium aspiration syndrome was the primary cause of NICU admission and perinatal death, accounting for an even larger proportion of NICU admissions (40%) overall.[23]

CONCLUSION

Postdated pregnancies are linked to morbidity and perinatal mortality in the mother, as well as foetal, neonatal, and maternal problems. The overall rate of postdated pregnancy has decreased as a result of the frequent use of ultrasonography for dating in the first trimester. To lower maternal and newborn morbidity, postdated pregnancies need to be identified early and managed with excellent planning. It is not

necessary to take a fast course of action toward an operation to deliver the baby only because the pregnancy is postdated. To accurately date, diagnose, and manage the condition in a way that would limit its incidence, peripheral health workers must receive more training.

Declaration by Authors
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