Original Research Article

Feto-maternal outcome in pregnancy beyond 40 weeks

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ABSTRACT

Background: Fetal, Neonatal and Maternal complications associated with pregnancy beyond 40 weeks have always been underestimated. However emerging evidence demonstrates that the incidence of complications increases after 40 weeks of gestation. The present study conducted to find out the fetomaternal outcome of such prolonged pregnancy.
Methods: A prospective cross sectional study of 84 patients with uncomplicated prolonged pregnancy fulfilling the inclusion and exclusion criteria and admitted in department of obstetrics and gynecology at a tertiary care hospital. The aim of the study was to know fetomaternal outcome in pregnancy beyond 40 weeks in consideration of spontaneous and induced labour.
Results: Out of 84 patients, 58 (69.05%) were in the age group of 20-30 years, 44 (52.38%) were between 41-42 weeks of gestation according to their LMP and 38(45.24%) were between 40-41 weeks of gestation. In 27 (32.14%) patients mode of delivery was caesarean section, in whom most common indication being fetal distress in 48.15% followed by failure to progress in 22.22%. In present study perinatal morbidity like IUFD, neonatal asphyxia, MAS, RDS were 4.76%, 9.52%, 7.14% and 3.57% respectively. Maternal morbidity like prolonged labor, PPH, fever, wound infection were 10.71%, 5.95%, 3.57% and 3.57% respectively.
Conclusions: With Regular antenatal check-up, incidence of postdate pregnancy can be decreased and it is important because of definite risk to fetus as pregnancy continuing beyond 40 weeks of gestation is associated with increased perinatal morbidity and mortality especially those who do not come for regular antenatal check-up. Confirmation of diagnosis of exact term of pregnancy is very important as many patients don't have regular menstrual history and LMP. Diagnosis can be confirmed by first trimester ultrasound which is most important non-invasive method and readily available.

Keywords: Induction of labour, Prolonged pregnancy, Perinatal morbidity, Ultrasound

INTRODUCTION

Term pregnancy was defined as a pregnancy with gestational age from 3 weeks before till 2 weeks after the estimated date of delivery and post-term pregnancy as a pregnancy with a gestational age of 42 completed weeks or more.[1]

In late 2012, a work group including representatives from the American college of obstetricians and gynecologists (ACOG), the society for maternal-fetal medicine (SMFM) and other professional societies recommended that the label "term" be replaced by early term, full term, late term and post-term to more accurately describe deliveries occuring at or beyond 37 weeks of gestation.[2]

- Early term: 37 0/7 weeks through 38 6/7 weeks
- Full term: 39 0/7 weeks through 40 6/7 weeks
- Late term: 41 0/7 weeks through 41 6/7 weeks
- Post-term: 42 0/7 weeks and beyond

The frequency of adverse neonatal outcome is lowest among uncomplicated pregnancies delivered between 39 and 40 weeks of gestation.[3,4]

The most frequent cause of prolonged pregnancy is inaccurate dating.[5,6] The risk factors are primiparity, maternal genetic factors, prior postdatism, obesity and male gender of the fetus.[7,8] Criteria for diagnosing postdates are correlation of menstrual history, clinical findings and USG. Ultrasonographic dating in early pregnancy can improve reliability of EDD.

In postdate pregnancy there are chances of fetal hypoxia, asphyxia, intracranial damage, meconium aspiration syndrome, macrosomia, atelectasis, hypoglycemia and stillbirths. These perinatal risks increases with increase in the gestational age beyond 40 weeks.[9,10]

The maternal risks include an increase in labor dystocia, an increase in severe perineal injury related to macrosomia and operative vaginal delivery and an increase in the rate of cesarean delivery and postpartum hemorrhage.[11,12]

In the present study, fetomaternal outcome was studied in pregnancy beyond 40 weeks in consideration of spontaneous and induced labor.

METHODS

This is a prospective cross sectional study done in Tertiary Care hospital in Obstetric and Gynecology Department.

Source of the patient: Patients attended ANC OPD and patients admitted in labor wards were included with consideration of inclusion and exclusion criteria.

Patient selection

By random selection fulfilling following criteria

- Those who crossed expected date of delivery
- Vertex presentation
- Surity of dates
- Singleton pregnancy
- One first trimester USG
- First visit in first or second trimester

Total 84 patients were selected according to the clinical examination of the patient. After per abdominal examination and per vaginal examination[13] i.e. assessment of bishop's score[14], every patient was studied under respective groups.

Bishop score >6 is regarded as a favourable cervix and ≤5 are regarded as unfavourable. All 84 patients were divided under Group I, in which 42 patients were included and labeled as spontaneous group.

Group II, in which 42 patients were included and labeled as induction group.

On admission following investigations were done:

- Obstetric ultrasound
- Electronic fetal monitoring by cardiotocography and Non stress test and Biophysical profile
- Doppler flow study

To all patients history of good perception of fetal movements was asked and correlated with the history and well being of the fetus. A patient was considered postdate, corelating her LMP (Naegele's rule[15]), clinical examination and obstetric ultrasound findings.

In spontaneous group fetal heart rate record was kept half hourly in the first stage and every 15 minutes in the second stage of labor. After ARM the color of liquor was noted, can be clear, meconium tinged, meconium stained, or thick meconium. If the liquor was thick meconium and spontaneous delivery was not possible, then the decision of LSCS was taken. If the liquor was meconium stained or meconium tinged then the decision of LSCS was taken according to the fetal heart rate after thorough monitoring. Winkel et al empirically set the limits of normal fetal heart rates of 120-160 b/min.[16] Fetal distress was defined as an abnormality of fetal heart rate necessitating that the obstetrician terminate labor by assisted vaginal delivery or caesarean section. Accordingly the mode of delivery, maternal and perinatal outcome was studied.

Table 1: Bishop score classification.

Score	0	1	2	3
Cervical dilatation	0	1-2	3-4	5+
Cervical length	3	2	1	<1
Station	−3	−2	−1,0	+1
Consistency	Firm	Moderate	Soft	
Position	Post.	Mid.	Anterior	

Group II included the patients who were not in labor and were for the induction after evaluation. For induction, cervical ripening agent Dinoprostone gel[17] was used. Then the patients were observed for uterine contractions and strict fetal heart rate monitoring. After 6 hrs of dinoprostone gel instillation per vaginal examination was done and repeated if needed with the same prerequisites. Again after 6 hrs per vaginal examination was done and if cervix was favourable, oxytocin augmentation was done after assessing the uterine contractions.

In both groups augmentation was done with amniotomy with good cervical dilatation and oxytocin drip started as per need. If per vaginal findings were same after second (repeat instillation), it was labelled as failure of induction,

and decision of caesarean section was taken. The color of liquor was seen after amniotomy, if it was meconium tinged, stained or thick meconium, then the decision was taken same as discussed in group I and the maternal and fetal outcome was studied. The data gathered of all 84 patients analyzed. The primary aim is to know neonatal outcome in the form of neonatal morbidity and mortality. Also maternal morbidity and mortality were studied.

Other measures studied were mode of delivery and need for caesarean section. Patients were followed up to 7 days after delivery; maternal and fetal morbidity or mortality was recorded.

RESULTS

In 27 (32.14%) patients mode of delivery was caesarean section, in whom most common indication being fetal distress in 48.15% followed by failure to progress in 22.22%.

Table 1: Distribution of cases according to the age of patients.

Age in years	Number of patients	Percentage
<20	20	23.81
20-30	58	69.05
>30	06	7.14
Total	84	100

Table 2: Distribution of cases according to gestational age by dates and USG.

Gestational age in weeks	Gestational age by dates	Gestational Age by USG
	No. (%)	No. (%)
40 –41	38 (45.24)	35 (41.67)
41-42	44 (52.38)	48 (57.14)
> 42	02 (2.38)	01 (1.19)
Total	84 (100)	84 (100)

Table 3: Distribution of cases according to DFMC.

DFMC	No.	%
Normal	72	85.72
Decreased	08	9.52
Lost	04	4.76
Total	84	100

Table 4: Distribution of cases according to the fetal heart rate (FHR) pattern.

FSH pattern	Group 1	Group 2
	No. (%)	No. (%)
40-41	38 (45.24)	35 (41.67)
41-42	44 (52.38)	48 (57.14)
> 42	02 (2.38)	01 (1.19)

In present study perinatal morbidity like IUFD, neonatal asphyxia, MAS, RDS were 4.76%, 9.52%, 7.14% and 3.57% respectively. Maternal morbidity like prolonged labor, PPH, fever, wound infection were 10.71%, 5.95%, 3.57% and 3.57% respectively.

Table 5: Distribution of cases according to the mode of delivery.

Mode of delivery	Group 1	Group 2
	No. (%)	No. (%)
Normal vaginal	28 (66.67)	27 (64.28)
Instrumental	01 (2.38)	01 (2.38)
LSCS	13 (30.95)	14 (33.34)
Total	42 (n1) (100)	42 (n2) (100)

Table 6: Distribution of cases according to the indication of LSCS.

Indication of LSCS	Group 1	Group 2
	No. (%)	No. (%)
Fetal distress	6 (46.16)	5 (35.70)
Failure to progress	3 (23.08)	3 (21.44)
Failure of induction	-	3 (21.44)
Failure to descent	1 (7.69)	1 (7.14)
Severe oligo	1 (7.69)	-
MSL	2 (15.38)	2 (14.28)
Total	13 (100)	14 (100)

Table 7: Distribution of cases according to the Apgar score at 5 minutes.

Apgar score at 5 minutes	Group 1	Group 2
	No. (%)	No. (%)
< 7	05 (12.20)	04 (10.25)
>7	36 (87.80)	35 (89.75)
Total	41 (n1) (100)	39 (n2) (100)

DISCUSSION

Majority of the patients belong to age group 20-30 years (69.05%) followed by <20 years (23.81%). According to gestational age by dates, majority of cases were between 41-42 weeks accounting 52.38%. Only 2.38% were more than 42 weeks. When gestational age was calculated by first ultrasound, majority of cases were between 41–42 weeks and only 1.19 % was >42 weeks. Out of 84 patient 04 (4.76%) were diagnosed IUFD with loss of fetal movements. Majority of patients (85.72%) were having normal DFMC.

Majority of patients were having similar FHR pattern in both groups.

Table 8: Distribution of cases according to the neonatal outcome.

Neonatal morbidity	Group 1 No. (%)	Group 2 No. (%)
Neonatal asphyxia	5(41.67)	3(37.5)
MAS	4(33.33)	2(25.0)
RDS	2(16.67)	1(12.5)
Others	1(8.33)	2(25.0)
Total	12(100)	08(100)

Table 9: Distribution of cases according to maternal morbidity.

Maternal morbidity	Group 1 No. (%)	Group 2 No. (%)
Prolonged labor	4(33.33)	5(38.46)
PPH	5(41.67)	4(30.76)
Fever	2(16.67)	2(15.38)
Wound infection	1(8.33)	2(15.38)
Total	12(100)	13(100)

In Group I, 30.95% were needed LSCS, while in Group II 33.34% were needed LSCS. The most common indication for LSCS in both Group was fetal distress and 2nd failure to progress. Runa Heimstad et al.[25], and Morris et al. (2003) studied similar results. James Alexander et al.[21], studied fetal distress as the most common indication for LSCS in Group I while both fetal distress and failure to progress in Group II.

Majority of babies (88.75%) were having Apgar score >7. Singal P et al.[18], James Alexander et al.[19] and Heimstad R et al.[20] found similar results as present study. Out of 84 patients, 4 (4.76%) were diagnosed IUFD, 8 (9.52%), 6 (7.14%) and 3 (3.57%) neonates having asphyxia, MAS and RDS respectively. In present study maternal morbidity such as prolonged labour, PPH, fever and wound infection were 9 (10.71%), 5 (5.95%), 3 (3.57%) and 3 (3.57%) respectively.

CONCLUSION

With Regular antenatal check-up, incidence of postdate pregnancy can be decreased and it is important because of definite risk to fetus as pregnancy continuing beyond 40 wks of gestation is associated wih increased perinatal morbidity & mortality especially those who do not come for regular antenatal check-up. Confirmation of diagnosis of exact term of pregnancy is very important as many patients don't have regular menstrual history and LMP. Diagnosis is confirmed by first trimester ultrasound which is most important non-invasive method and readily available. When there has been both a first and second trimester ultrasound, gestational age should be determined by earliest ultrasound.

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