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A Study of Maternal and Fetal Outcome in Postdate Pregnancy

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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 50 patients with uncomplicated prolonged pregnancy fulfilling the inclusion and exclusion criteria and admitted in department of obstetrics and gynecology at a Civil Hospital, Ahmedabad. 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 50 patients, 32(64%) were in the age group of 20-30 years, majority of cases were between 40-41 weeks i.e.38(76) %, followed by between 41-42 weeks i.e.8(16 %) and only 4(8%) belonged to >42 weeks. In 24 (48%) patients mode of delivery was caesarean section, in whom most common indication being fetal distress in 33.33% followed by MSL in 29.16% and Failure to Progress 16.66%. Out of 50 patients, neonatal asphyxia, MAS, RDS were found in 3(32.46%), 6(70.12%) and 6(64.93%) respectively. Maternal morbidity like prolonged labor, PPH, fever, wound infection were 10(68.27%), 6(40.94%), 2(13.74%) and 1(7.14%) 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.

1. 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.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.

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. The most frequent cause of prolonged pregnancy is inaccurate dating. Many inaccuracies exist using this method in women who have irregular cycles, have been on recent hormonal birth control, or who have first trimester bleeding. In particular, women are more likely to be oligo-ovulatory than polyovulatory, so cycles longer than 28 days are not uncommonly seen. The risk factors are primiparity, maternal genetic factors, prior post-datism, obesity and male gender of the fetus. 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 fetal birth injurie, non-reassuring fetal heart rates. These perinatal risks increase with increase in the gestational age beyond 40 weeks.

The maternal risks include an increase in labor dystocia, an increase in severe perineal injury and cervical tear related to macrosomia and operative vaginal delivery and an increase in the rate of cesarean delivery and postpartum hemorrhage. In the present study, fetomaternal outcome was studied in pregnancy beyond 40 weeks in consideration of spontaneous and induced labor.

Management protocol for post term pregnancy is fetal surveillance for prolonged pregnancy, induction of labour, during intrapartum care proper monitoring of labour.

2. Material and Methods

This study was carried out in the Department of Obstetrics and Gynecology, B.J. Medical College, Ahmedabad, Gujarat from January 2017 to April 2017.

Source of the Patients:
A total of 50 patients beyond 40 weeks of gestation admitted in Obstetrics and Gynecology Department, Civil Hospital, Ahmedabad have been taken in the study group considering the inclusion and exclusion criteria.

Inclusion criteria are:
1) Antenatal cases beyond 40 weeks of gestation aged between 18yrs and 35 yrs.

2) Having regular menstrual cycles and known LMP or with first trimester scan.
3) Singleton pregnancy with vertex presentation.

Exclusion criteria are:
1) Congenital anomalies
2) Chronic hypertension, pre eclampsia and eclampsia
3) Pre-existing or gestational diabetes
4) Heart diseases
5) Antepartum haemorrhage.

The data are collected using a prepared proforma meeting the objectives of the study by means of personal interview with the patients after taking informed consent. The data are collected from the pregnant females between 18yrs and 35 yrs of age as per the inclusion and exclusion criteria. Total 50 patients were selected according to the clinical examination of the patient. After per abdominal examination and per vaginal examination i.e. assessment of bishop's score, every patient was studied under respective groups. Bishop score >=6 is regarded as a favourable cervix and score 0f <=5 regarded as unfavorable. All 50 patients were divided under two groups. Group-1 included 29 patients which was labeled as spontaneous group. Group II, in which 21 patients were included and labeled as induction group.
On admission following investigations were done:
- Obstetric ultrasound
- Electronic fetal monitoring by cardio-tocography
- Non stress test and Biophysical profile
- Doppler flow study

A patient was considered postdate, correlating her LMP (Naegele's rule), 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.

Bishop's Score

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
Position	Posterior	Midline	Anterior	-
Consistency	Firm	Medium	Soft	-

Group II included the patients who were not in labor and were for the induction after evaluation. For induction, cervical ripening agents like Dinoprostone gel or Misoprostol Tablets were used. Then the patients were observed for uterine contractions and strict fetal heart rate monitoring. After 6 hrs of dinoprostone gel instillation or 4 hrs of misoprostol tablet induction,per vaginal examination was done and repeated if needed with the same prerequisites. If cervix was favorable, 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 time of dinoprotone gel instillation or four times of misoprostol tablet induction, 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 50 patients were 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.

3. Results

In 24 (48%) patients mode of delivery was caesarean section, in whom most common indication being fetal distress in 33.33% followed by MSL in 29.16% and Failure to Progress 16.66%.

Table 1: Distribution of Cases according to the age of Patients

Age in Years	No. of Patients	Percentage
<20 Years	8	16%
20-30 Years	32	64%
>30 Years	10	20%
Total	50	100%

Table 2: Distribution of Cases according to Gestational Age of Patients

Gestational Age	No. of Patients	Percentage
40-41 weeks	38	76%
41-42 weeks	8	16%
>42 weeks	4	8%
Total	50	100%

Table3: Distribution of the patient according to types of induction

Type of Induction	No.	Percentage
Dinaprostone Gel	9	42.85%
Misoprostol Tablet	12	57.14%
Total	21	100%

Table 4: Distribution of Cases according to Mode of Delivery

Mode of Delivery	Group-1 No(%)	Group-2 No(%)
Normal Delivery	14(48.27%)	9(42.85%)
Instrumental Delivery	1(3.44%)	2(9.52%)
LSCS	14(48.27%)	10(47.61%)
Total	29(100%)	21(100%)

Table 5: Distribution of Cases according to the Indication of LSCS

Indication of LSCS	Group-1 No.(%)	Group-2 No.(%)
Fetal Distress	4(28.57%)	4(40%)
Failure to Progress	3(21.42%)	1(10%)
Failure of Induction	0(0%)	3(30%)
Meconium Stained Liquor	5(35.71%)	2(20%)
Severe Oligohydramnios	2(14.28%)	0(0%)
Total	14(100%)	10(100%)

In present study perinatal morbidities like neonatal asphyxia, MAS, RDS were 32.46%, 70.12% and 64.93%respectively. Maternal morbidity like prolonged labor, PPH, fever, wound infection were 68.27%, 40.94%, 13.74% and 7.14% respectively.

Table 6: Distribution of Cases according to APGAR Score at 5 minutes

APGAR SCORE at 5 Minutes	Group-1 No.(%)	Group-2 No. (%)
<7	6(20.68%)	9(42.85%)
>7	23(79.31%)	12(57.14%)
Total	29(100%)	21(100%)

Table 7: Distribution of Cases According to Neonatal Outcome

Neonatal Outcome	Group-1 No.(%)	Group-2 No.(%)
MAS	3(42.85%)	3(27.27%)
RDS	2(28.57%)	4(36.36%)
Birth Asphyxia	1(14.28%)	2(18.18%)
Jaundice	1(14.28%)	1(9.09%)
Mortality	0(0%)	1(9.09%)
Total	7(100%)	11(100%)

Table 8: Distribution of Cases according to Maternal Complications

Maternal Complications	Group-1 No.(%)	Group-2 No.(%)
Prolong Labor	4(28.27%)	6(40%)
PPH	2(14.28%)	4(26.66%)
Perineal Tear	5(35.71%)	3(20%)
Cervical Tear	1(7.14%)	1(6.66%)
Fever	1(7.14%)	0(0%)
Wound Infection	1(7.14%)	1(6.66%)
Total	14(100%)	15(100%)

4. Discussion

Majority of the patients belong to age group 20-30 years 32(64%) followed by > 30 years age i.e.10(20%).According to gestational age by Dates, majority of cases were between 40-41 weeks i.e.38(76) %, followed by between 41-42 weeks i.e.8(16 %) and only 4(8%) belonged to >42 weeks.

In Group I, 48.27% were needed LSCS, while in Group II 47.61% were needed LSCS. The most common indication for LSCS in both Group was fetal distress and 2nd MSL followed by 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 50 (70%) 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 50 patients, neonatal asphyxia, MAS, RDS were found in 3(32.46%), 6(70.12%) and 6(64.93%) respectively. Maternal morbidity like prolonged labor, PPH, fever, wound infection were 10(68.27%), 6(40.94%), 2(13.74%) and 1(7.14%) respectively.

In the present study, induction of labour was done in 42% of post-term pregnancy. A comparative study done by C.J.M Sneijers et al. shows 88.7% rate of induction in postterm pregnancy. Present study shows that percentage for type of induction for Cerviprime Gel and Misoprostol (25µg) Tablet was, 42.85% and 57.14% respectively. A comparative study done by Ss Ramesh et al. shows 74.4% and 9.21% for Cerviprime and misoprostol (25µg) respectively.

5. 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.

We conclude Post term pregnancies require early detection, effective and proper planning management. The mere fact that the pregnancy is post term does not necessitate a hasty line of management towards operative delivery. Provided there are no indications for caesarean, post term pregnancy per se is not an indication for the same.

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