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Original Research Article

To Determine the Prevalence of Post-dated Pregnancies, as well as the Related Maternal Difficulties, Perinatal Morbidity, and Death. A Clinicopathological Study

Anupam Kumar Chaurasia[1], Lata Shukala Dwedi[2]

[1]Senior Resident, Department of Obstetrics and Gynecology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India

[2]Professor and HOD, Department of Obstetrics and Gynecology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India

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Corresponding author: Dr. Anupam Kumar Chaurasia
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Abstract

Aim: To find out incidence of post-dated pregnancies, associated maternal complications and perinatal morbidity and mortality.

Methods: This was a retrospective observational study conducted in the Department of Obstetrics and Gynecology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India from August 2019 to August 2020. Total 220 patients in the antenatal ward and labour room were selected for the study and they were divided into two groups, Control group with Gestational age 37-40 weeks and Study group with Gestational age >40 weeks. The maternal outcome was noted in terms of need for cesarean section, postpartum haemorrhage and sepsis. Foetal outcome was noted in terms of intrapartam asphyxia, intrauterine foetal death, admission to neonatal intensive care unit etc.

Results: Patients in the study group (72.73%) belonged to the gestational age of 40-41 weeks while all the controls belonged to 37-40 weeks gestational age. The percentage of LSCS was 28.18% which was higher than in the control group where it was 11.82%. Incidence of instrumental delivery was also higher in the study group as compared to control group (10.91% as compared to 3.64%). The indictions for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor (10.91%) followed by cephalopelvic disproportion (6.36%). The maternal complications like LSCS, PPH and sepsis all were higher in the study group as compared to the control group. Among the foetal outcomes, 13.64% of infants in the study group had asphyxia as compared to only 6.36% in the control group. 15.45% infants of the study group had to be admitted to the NICU as compared to 11.82% in the control group. 1.82% was the percentage of intrauterine deaths in the study group as compared to none in the control group.

Conclusion: Post-dated pregnancy is associated with both, maternal and foetal complications. Timing of induction has to be decided carefully, as early induction leads to failure and increased rates of LSCS, while late induction leads to increased foetal complications.

Keywords: Maternal complications, Post datism, Perinatal morbidity

Introduction

As per WHO, Post term pregnancy (PTP) is defined as a pregnancy that persists beyond 294 days or 42 weeks of gestation.[1] The reported frequency of PTP is approximately 7%.[2] Post-dated pregnancy is defined as one which has crossed expected date of delivery. Prolongation of pregnancy complicates up to 10% of all pregnancies and carries increased risk to mother and foetus.[3] The incidence of PTP varies depending on whether the calculation is based on the history and clinical examination alone, or whether early pregnancy ultrasound examination is used to estimate gestational age.[4]

The growth and survival of most post dated infants suggests that the placenta uncommonly deteriorates with increasing length of gestation; thus the changes seen in fetuses afflicted with post maturity syndrome may not be explained by placental findings alone. Vorherr described critical reductions of fetal oxygen supply after 43rd week of gestation by cord blood oxygen content determinations.[4] The combination of continued fetal growth and arrested placental growth may lead to situation of decreasing placental nutrient reserve, compromised fetal circulation and eventually fetal distress. However, a recent electron microscopy study of placental changes in prolonged pregnancy suggests that the uteroplacental ischemia and not placental aging may be more important in genesis of post maturity syndrome.[5] Prolonged pregnancies are associated with an increased incidence of macrosomia. Macrosomia infants account for about 1% of term deliveries and 3-10% of post term deliveries.[6] Post maturity infants particularly with macrosomia and post maturity are at increased risk of hypoglycemia. They also have increased chance of polycythemia.[7] The maternal risks of post-dated pregnancy are often underappreciated. These include an increase in labor dystocia (9-12% vs 2-7% at term), an increase in severe perineal injury (3rd and 4 th degree perineal lacerations) related to macrosomia (3.3% vs 2.6% at term) and operative vaginal delivery, and a doubling in the rate of cesarean delivery (14% vs 7% at term).[8-11] The latter is associated with higher risks of complications such as endometritis, hemorrhage, and thromboembolic disease.[10,12] As there is fetal and maternal risk associated with post dated pregnancy, need of induction is more with post-dated pregnancy. There is general consideration that perinatal mortality and morbidity controversy is centered on adequacy of detecting different methods for the fetus at risk, the time when testing should be done, the method of monitoring, optimum time for delivery and mode of delivery. The availability of biophysical profile and electronic fetal monitoring can affect the outcome of a given pregnancy. One recent systematic review showed that a policy of labor induction for women with post-dated pregnancy compared with expectant management is associated with fewer perinatal deaths and fewer Caesarean sections.[13] The aim of this study was to find out incidence of post-dated pregnancies, associated maternal complications and perinatal morbidity and mortality.

Material and methods

This was a retrospective observational study conducted in the Department of Obstetrics and Gynecology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India from August 2019 to August 2020, after taking the approval of the protocol review committee and institutional ethics committee.

Methodology

Total 220 patients in the antenatal ward and labour room were selected for the study and they were divided into two groups, Control group with Gestational age 37-40 weeks and Study group with Gestational age >40 weeks.

All the patients with Singleton pregnancy, Cephalic presentation and Absence of any other maternal complication were included in this study. Patients with Previous cesarean section, Gestational hypertension, Gestational diabetes, Malpresentation, Abruption and Placenta previa were excluded from this study.

All the data regarding the age, parity gestational age, any maternal complications like oligohydromnios, intrauterine growth restriction etc was collected. The maternal outcome was noted in terms of need for cesarean section, postpartum haemorrhage and sepsis. Foetal outcome was noted in terms of intrapartam asphyxia, intrauterine foetal death, admission to neonatal intensive care unit etc.

Results:

Table 1 shows that maximum number of patients belonged to the age group of 25-30 years both in cases (57.27%) and control group (50.91%).

Table 1: Age wise distribution of cases and controls

Age (Years)	Number of Cases (%)	Number of Controls (%)
Below -25	29(26.36%)	34(30.91%)
25-30	63(57.27%)	56(50.91%)
Above 30	18(16.36%)	20(18.18%)
Total	110	110
Mean ± SD	25.9 ± 5.21	26.7 ± 5.11

Table 2: Distribution of cases and controls by gestational age

Period of gestation	Number of Cases (%)	Number of Controls
37-40 weeks	0	110(100%)
40-41 weeks	80 (72.73%)	0
41-42 weeks	30 (27.27%)	0
Total	110	110

Table 2 shows that the maximum number of patients in the study group (72.73%) belonged to the gestational age of 40-41 weeks while all the controls belonged to 37-40 weeks gestational age.

Table 3: Distribution of cases and controls according to parity

Parity	Number of cases (%)	Number of controls (%)
Primigravida	69 (62.73%)	62 (56.36%)
Multigravida	41 (37.27%)	48 (43.64%)
Total	110	110

As shown in table 3, 62.73% of the patients in study group were primigravida and in the control group 56.36% were primigravida.

Table 4: Distribution of cases and controls according to the type of delivery

Type of delivery	Number of cases (%)	Number of controls (%)
NVD	67(60.91%)	93(84.54%)
Instrumental delivery	12 (10.91%)	4(3.64%)
LSCS	31 (28.18%)	13 (11.82%)
Total	110	110

Table 4 shows that in the study group the percentage of LSCS was 28.18% which was higher than in the control group where it was 11.82%. Incidence of instrumental delivery was also higher in the study group as compared to control group (10.91% as compared to 3.64%)

Table 5: Distribution of cases and controls according to the indication of LSCS

Indication of LSCS	Number of Cases (%)	Number of Controls (%)
Acute foetal distress/MSL	12(10.91%)	4(3.64%)
Failed induction	4(3.64%)	0
Non progress of labour	4(3.64%)	5(4.55%)
Non reactive CTG	4(3.64%)	4(3.64%)
CPD	7(6.36%)	0
Total	31	13

As shown in table 5, among the indictions for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor (10.91%) followed by cephalopelvic disproportion (6.36%). In the control group, most common indication was non progress of labour (4.55%) followed by acute foetal distress (3.64%) and non reactive CTG (3.64%).

Table 6: Distribution of cases and controls according to maternal complications

Maternal complication	Number of cases	Number of controls
LSCS	31 (28.18%)	13 (11.82%)
PPH	17 (15.45%)	5 (4.55%)
Sepsis	15 (13.64%)	4 (3.64%)
Total	63	22

Table 6 shows the maternal complications like LSCS, PPH and sepsis all were higher in the study group as compared to the control group.

Table 7: Distribution of cases and controls according to the foetal outcome

Foetal outcome	Number of Cases (%)	Number of Controls (%)
No asphyxia	76 (69.10%)	90 (81.82%)
Fetal asphyxia(APGAR score<6/10)	15(13.64%)	7(6.36%)
Admission to NICU	17 (15.45%)	13 (11.82%)
IUD	2 (1.82%)	0
Total	110	110

Among the foetal outcomes, as is depicted in table 7, 13.64% of infants in the study group had asphyxia as compared to only 6.36% in the control group. 15.45% infants of the study group had to be admitted to the NICU as compared to 11.82% in the control group. 1.82% was the percentage of intrauterine deaths in the study group as compared to none in the control group.

Discussion

The present study was conducted to find out the incidence of maternal complications, perinatal mortality and morbidity in post-dated pregnancies. Total cases were 220 which were enrolled based on inclusion and exclusion criteria. In this study the maximum number of patients belonged to the age group of 25-30 years both in cases (57.27%) and control group (50.91%). Beischer in his study found that majority of

post-dated patients belonged to the age group of 25-30 years, while Bancroft et al found that majority of patients belonged to 21-30 years.[14,15] Reddy UM et al found in their study that women who are of advance maternal age are at higher risk of still birth throughout gestation, the peak risk period is 37 to 41 weeks.[16]

In the study, the mean age being 25.9±5.21 years in the study group. Similar studies by Mahapatro[18] and Eden et al[17] have shown the mean age to be 24.19 ± 3.30 and 25.8 years respectively. 63.75% of the patients in study group were primigravida which is similar to Mahapatro[18] and Alexander et al's[19] study.

Among the mode of delivery, in the study group the percentage of LSCS was 28.18% which was higher than in the control group where it was 11.82%. Incidence of instrumental delivery was also higher in the study group as compared to control group (10.91% as compared to 3.64%). In a similar study by Mahapatro[18] the rate of LSCS was found to be 28.9% and that of instrumental delivery was 5.72%. In study by Singhal et al.[20] the rate of LSCS was found to be 14.7% and that of instrumental delivery was 8.6%. Davinder et al.[21] study showed the rate of instrumental delivery as 10.35%. In this study among the indications for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor (10.91%) followed by cephalopelvic disproportion (6.36%). In the control group, most common indication was non progress of labour (4.55%) followed by acute foetal distress (3.64%) and non reactive CTG (3.64%). Bhriegu R et al[22] in their study also found that Meconium stained liquor with fetal distress was the most common indication for LSCS (23.5%) and in Mahapatro's[18] study, again fetal distress was found to be the most common indication for LSCS (65.5%). In our study, the maternal complications like LSCS, PPH and sepsis all were higher in the study group as compared to the control group. Among the foetal outcomes, 13.64% of infants in the study group had asphyxia as compared to only 6.36% in the control group. 15.45% infants of the study group had to be admitted to the NICU as compared to 11.82% in the control group. 1.82% was the percentage of intrauterine deaths in the study group as compared to none in the control group. Bhriegu R et al [22] in their study, also found increased incidence of obstetric complications such as rate of LSCS, perineal tear, atonic postpartum haemorrhage, and perinatal complications such as fetal distress and meconium aspiration syndrome. Similar studies by Singhal et al.[20] and Alexander et al[19] also revealed increased incidence of maternal and perinatal complications like increased LSCS rate, low Apgar scores and admission into NICU.

Conclusion

Post-dated pregnancy is associated with both, maternal and foetal complications. Timing of induction has to be decided carefully, as early induction leads to failure and increased rates of LSCS, while late induction leads to increased foetal complications.

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