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Original Research Article

A Retrospective Observational Clinicopathological Evaluation of Postdated Pregnancy

Shruti Verma[1], Nilam Bharti[2], Vijaya[3]

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

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

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

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Corresponding Author: Dr. Nilam Bharti
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Abstract

Aim: The aim of the present study was to find out the incidence of maternal complications, perinatal mortality and morbidity in postdated pregnancies.

Methods: This was a retrospective observational study conducted in the Department of Obstetrics and Gynaecology for 22 months. Total 200 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.

Results: Maximum number of patients belonged to the age group of 25-30 years both in cases (45%) and control group (52%). The maximum number of patients in the study group (80%) belonged to the gestational age of 40-41 weeks while all the controls belonged to 37-40 weeks gestational age. 65% of the patients in study group were primigravida and in the control group 55% were primigravida. The percentage of LSCS was 30% which was higher than in the control group where it was 15%. Incidence of instrumental delivery was also higher in the study group as compared to control group (13% as compared to 7%). Among the indications for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor followed by cephalopelvic disproportion. In the control group, most common indication was non progress of labour followed by acute foetal distress and non-reactive CTG. Maternal complications like LSCS, PPH and sepsis all were higher in the study group as compared to the control group. 17% of infants in the study group had asphyxia as compared to only 7% in the control group. 15% infants of the study group had to be admitted to the NICU as compared to 10% in the control group. 3% was the percentage of intrauterine deaths in the study group as compared to none in the control group.

Conclusion: Postdated pregnancy remains a clinical dilemma for an obstetrician. The choice is between watchful expectancy for labour to start or induction in postdated patients. According to our study, postdated pregnancies are related with higher rate of LSCS and instrumental deliveries.

Keywords: Maternal complications, Post datism, Perinatal morbidity, clinic-pathological

Introduction

Post-dated pregnancy is defined as one which has crossed expected date of delivery. Pregnancy more than 42 weeks or more than 294 days is called post term pregnancy. Fernandos Arias defined prolonged pregnancy as those pregnancies advancing beyond the expected date of delivery (EDD). [1] Prolongation of pregnancy complicates up to 10% of all pregnancies and carries increased risk to mother and fetus. [2,3] Post term perinatal mortality is greater than that of term pregnancy in almost all studies reviewed. [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]

Several retrospective and relatively small studies have concluded that prolongation of pregnancy beyond term is accompanied by a rise in perinatal morbidity and mortality. [8,9] Abnormalities such as congenital anomalies, oligohydramnios, meconium aspiration, fetal asphyxia, shoulder dystocia, and fetal dysmaturity are commonly observed in these pregnancies. [10,11] The presumed etiology for this rise in perinatal morbidity and mortality is "placental insufficiency." Cunningham et al [10] concluded that the postterm fetus may outgrow the ability of its placenta to supply nutrients and provide adequate gas exchange and is therefore at risk for adverse outcome resulting from either malnutrition or asphyxia. Indeed, studies of placental histologic features in these pregnancies revealed an increased incidence of placental infarcts, calcification, intervillous thrombosis, perivillous fibrin deposits, arterial thrombosis, and arterial endarteritis. [12,13]

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. [14] Post maturity infants particularly with macrosomia and post maturity are at increased risk of hypoglycemia. They also have increased chance of polycythemia. [15] The aim of the present study was to find out the incidence of maternal complications, perinatal mortality and morbidity in postdated pregnancies.

Materials and methods

This was a retrospective observational study conducted in the Department of Obstetrics and Gynaecology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India for 22 months. Total 200 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.

Inclusion Criteria

- Singleton pregnancy
- Cephalic presentation
- Absence of any other maternal complication

Exclusion Criteria

- Previous cesarean section
- Gestational hypertension
- Malpresentation
- Abruption
- Placenta previa

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: Demographic details and mode of delivery

Age (Years)	Number of Cases (%)	Number of Controls (%)
Below -25	30 (30%)	30 (30%)
25-30	45 (45%)	52 (52%)
Above 30	24 (25%)	18 (18%)
Total	100	100
Mean ± SD	27.3 ± 3.47	28.2 ± 3.77
Period of gestation		
37-40 weeks	0	100 (100%)
40-41 weeks	82 (82%)	0
41-42 weeks	18 (18%)	0
Total	100	100
Parity		
Primigravida	65 (65%)	55 (55%)
Multigravida	35 (35%)	45 (45%)
Total	100	100
Type of delivery		
NVD	57 (57%)	78 (78%)
Instrumental delivery	13 (13%)	7 (7%)
LSCS	30 (30%)	15 (15%)
Total	100	100

Maximum number of patients belonged to the age group of 25-30 years both in cases (45%) and control group (52%). The maximum number of patients in the study group (80%) belonged to the gestational age of 40-41 weeks while all the controls belonged to 37-40 weeks gestational age. 65% of the patients in study group were primigravida and in the control group 55% were primigravida. The percentage of LSCS was 30% which was higher than in the control group where it was 15%. Incidence of instrumental delivery was also higher in the study group as compared to control group (13% as compared to 7%).

Table 2: Distribution of cases and controls according to the indication of LSCS

Indication of LSCS	Number of Cases	Number of Controls
Acute foetal distress/MSL	10	2
Failed induction	7	0
Non progress of labour	5	10
Non-reactive CTG	4	3
CPD	4	0
Total	30	15

Among the indications for LSCS, the most common indication among the study group was acute foetal distress which includes meconium-stained liquor followed by cephalopelvic disproportion. In the control group, most common indication was non progress of labour followed by acute foetal distress and non-reactive CTG.

Table 3: Distribution of cases and controls according to maternal complications

Maternal complication	Number of cases	Number of controls
LSCS	25	15
PPH	15	3
Sepsis	10	2
Total	50	20

Maternal complications like LSCS, PPH and sepsis all were higher in the study group as compared to the control group.

Table 4: Distribution of cases and controls according to the foetal outcome

Foetal outcome	Number of Cases (%)	Number of Controls (%)
No asphyxia	65 (65%)	83 (83%)
Fetal asphyxia (APGAR score<6/10)	17 (17%)	7 (7%)
Admission to NICU	15 (15%)	10 (10%)
IUD	3 (3%)	0
Total	100	100

17% of infants in the study group had asphyxia as compared to only 7% in the control group. 15% infants of the study group had to be admitted to the NICU as compared to 10% in the control group. 3% was the percentage of intrauterine deaths in the study group as compared to none in the control group.

Discussion

Fernandos Arias defined prolonged pregnancy as those pregnancies advancing beyond the expected date of delivery (EDD).[16] Prolongation of pregnancy complicates up to 10% of all pregnancies and carries increased risk to mother and fetus. [17,18] Post term perinatal mortality is greater than that of term pregnancy in almost all studies reviewed. [19] 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. [19] 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. [20]

Maximum number of patients belonged to the age group of 25-30 years both in cases (45%) and control group (52%). The maximum number of patients in the study group (80%) belonged to the gestational age of 40-41 weeks while all the controls belonged to 37-40 weeks gestational age. 65% of the patients in study group were primigravida and in the control group 55% were primigravida. Similar studies by Mahapatro [21] and Eden et al [22] have shown the mean age to be 24.19 ± 3.30 and 25.8 years respectively. 62% of the patients in study group were primigravida which is similar to Mahapatro [21] and Alexander et al's study. [23] The percentage of LSCS was 30% which was higher than in the control group where it was 15%. Incidence of instrumental delivery was also higher in the study group as compared to control group (13% as compared to 7%). In a similar study by Mahapatro [21] the rate of LSCS was found to be 28.9% and that of instrumental delivery was 5.72%. In study by Singhal et al [24] the rate of LSCS was found to be 14.7% and that of instrumental delivery was 8.6%. Davinder et al [25] study showed the rate of instrumental delivery as 10.35%.

Among the indications for LSCS, the most common indication among the study group was acute foetal distress which includes meconium stained liquor (10%) followed by cephalopelvic disproportion (8%). In the control group, most common indication was non progress of labour (2%) followed by acute foetal distress (0.5%) and non-reactive CTG (1%). Bhriegu R et al [26] 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 study [21], again fetal distress was found to be the most common indication for LSCS (65.5%).

Maternal complications like LSCS, PPH and sepsis all were higher in the study group as compared to the control group. 17% of infants in the study group had asphyxia as compared to only 7% in the control group. 15% infants of the study group had to be admitted to the NICU as compared to 10% in the control group. 3% was the percentage of intrauterine deaths in the study group as compared to none in the control group. According to study done by Aaron, estimated rates of maternal complications increase beyond 40 weeks of gestation. Beyond that the rates of operative vaginal delivery, 3rd or 4th degree perineal laceration and chorioamnionitis all increases. ($p<0.001$), and rates of postpartum hemorrhage, endometritis and primary caesarean delivery increased at 41 weeks of gestation. [27]

Conclusion

Postdated pregnancy remains a clinical dilemma for an obstetrician. The choice is between watchful expectancy for labour to start or induction in postdated patients. According to our study, postdated pregnancies are related with higher rate of LSCS and instrumental deliveries. Foetal distress and meconium stained liquor are significantly higher in postdated pregnancies. Similarly, maternal and perinatal complications like postpartum haemorrhage, sepsis, admission to NICU, low Apgar scores, foetal asphyxia and intrauterine deaths are also higher in post-term pregnancies. Therefore it is recommended to not prolong the postdated pregnancies and their induction must be soon after the expected date is crossed to prevent the above mentioned complications.

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