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Original Research Article

A Hospital Based Feto-Maternal Assessment in Postdated Pregnancies: A Retrospective Study

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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: The study was conducted from the Department of Obstetrics and Gynecology at Patna Medical College and Hospital, Patna, Bihar, India from October 2017 to July 2018. Two groups of 200 women from the maternity ward and birth room were chosen for the study: the Control group had a gestational age between 37 and 40 weeks, and the Study group had a gestational age of 40 weeks or more.

Results: In both instances (45%) and controls (52%), the majority of patients were 25-30 years old. Most research patients (80%) were 40-41 weeks gestational, while all controls were 37-40 weeks. 65% of study participants and 55% of control women were primigravida. The LSCS rate was 30%, greater than 15% in the control group. In the study group, 13% of deliveries were instrumental, compared to 7% in the control group. The research group's most prevalent LSCS indication was acute fetal distress with meconium-stained fluid, followed by cephalopelvic disproportion. The control group most often had non-progressing labor, severe fetal distress, and non-reactive CTG. Study group mothers had more LSCS, PPH, and sepsis than control group mothers. This research found 17% of newborns with asphyxia, compared to 7% in the control group. 15% of study babies were admitted to the NICU, compared to 10% of controls. The study group had 3% intrauterine fatalities compared to none in the control group.

Conclusion: Obstetricians still face postdated pregnancies. Watchful expectation or induction for postdated labour are options. Our study found that postdated pregnancies increase LSCS and instrumental deliveries.

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

Introduction

When the due date has passed, the pregnancy is considered post-dated. Post term pregnancy is defined as a pregnancy lasting longer than 42 weeks, or 294 days. Pregnancies that continue past the estimated delivery date (EDD) were characterized by Fernandos Arias as extended pregnancies. [1] Up to 10% of pregnancies are complicated by pregnancy prolongation, which increases the danger to both the mother and the foetus. [2,3] Almost all studies that looked at perinatal mortality found that it was higher after the baby was born than throughout the pregnancy itself. [4]

A condition of diminishing placental nutritional reserve, poor fetal circulation, and ultimately fetal distress may result from a combination of continuous fetal development and stopped placental growth. Recent research using electron microscopy to examine placental alterations during extended pregnancies has cast doubt on the role of placental ageing in the development of post maturity syndrome and instead points to uteroplacental ischemia. [5] Macrosomia is more common in pregnancies that last longer than average. Only around one percent of babies born at full gestation and three to ten percent of babies born after full term are macrosomia. [6] Hypoglycemia is more likely to occur in babies that are postmature, especially those who have macrosomia. Polycythemia is also more likely to occur in this population. [7] There is an increase in perinatal morbidity and death when pregnancies are prolonged past term, according to a number of retrospective and small studies. [8,9] Pregnancies characterized by these abnormalities often include congenital defects, oligohydramnios, meconium aspiration, fetal hypoxia, shoulder dystocia, and foetal dysmaturity. [10,11] "Placental insufficiency" is the likely cause of the increase in

prenatal morbidity and death. Post term fetuses are at increased risk of malnutrition or hypoxia because their placentas may no longer be able to give enough nutrients and gas exchange, according to Cunningham et al. 10. Placental infarcts, calcification, arterial thrombosis, peri villous fibrin deposits, intervillous thrombosis, and arterial endarteritis were all more common in these pregnancies, according to examinations of placental histologic characteristics. [12,13]

Macrosomia is more common in pregnancies that last longer than average. Only around one percent of babies born at full gestation and three to ten percent of babies born after full term are macrosomia. [14] Hypoglycemia is more likely to occur in postmature newborns, especially those who have macrosomia. Polycythemia is also more likely to occur in this population.15 Maternal problems, perinatal mortality, and morbidity rates in pregnancies that occurred after a certain date were the focus of this research.

Materials and Methods

This was a retrospective observational study conducted in the Department of Obstetrics and Gynecology, Patna Medical College and Hospital, Patna Bihar, India a from October 2017 to July 2018.

Total 200 patients in the antenatal ward and labor 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 oligohydramnios, intrauterine growth restriction etc was collected. The maternal outcome was noted in terms of need for cesarean section, postpartum hemorrhage and sepsis. Fetal outcome was noted in terms of intrapartum asphyxia, intrauterine fetal 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 fetal 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 fetal distress which includes meconium stained liquor (10%) followed by cephalopelvic disproportion (8%). In the control group, most common indication was non progress of labor (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, 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

Obstetricians continue to face the clinical challenge of postdated pregnancies. In patients whose due dates have passed, the option to induce labor or to wait for labor to naturally progress is available. Our research shows that the rates of LSCS and instrumental deliveries are greater in pregnancies that occur after the due date. Postdated pregnancies are associated with an increased risk of fetal discomfort and meconium tainted fluid. Also, more common in pregnancies that go beyond the expected time are issues affecting the mother and the baby, such as postpartum hemorrhage, sepsis, poor Apgar scores, foetal hypoxia, and intrauterine fatalities. In order to avoid the aforementioned problems, it is advised that postdated pregnancies not be prolonged and that their induction be performed promptly after the projected date has passed.

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