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Original Research Article

A Clinicopathological Assessing Maternal Complications and Perinatal Mortality in Postdated Pregnancy

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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 Gynecology, AIIMS, New Delhi, India . 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.

Results: The majority of patients were 25-30. In both instances (50%) and controls (50%), most patients were 25-30 years old. The majority of patients (82%) were 40-41 weeks pregnant, whereas 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, 10% of deliveries were instrumental, compared to 5% in the control group. within the reasons for LSCS, the most prevalent indication within the study group was acute fetal distress which comprises meconium-stained fluid (10%) followed by cephalopelvic disproportion (9%). Non-progress of labor (4%) was the most prevalent control group indication, followed by acute fetal distress (01%) and non-reactive CTG (1%).

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

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

Introduction

Several retrospective and relatively small studies have concluded that prolongation of pregnancy beyond term is accompanied by a rise in perinatal morbidity and mortality. [1,2] Abnormalities such as congenital anomalies, oligohydramnios, meconium aspiration, fetal asphyxia, shoulder dystocia, and fetal dysmaturity are commonly observed in these pregnancies. [3,4] The presumed etiology for this rise in perinatal morbidity and mortality is “placental insufficiency.” Cunningham et al4 concluded that the post term 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, peri villous fibrin deposits, arterial thrombosis, and arterial endarteritis. [5,6]

Although the increased morbidity and mortality associated with post term pregnancy has long been appreciated, most authors have studied gestational age as the only contributing factor. [7-9] The influence of other factors such as maternal age, parity. maternal smoking history, fetal gender, or birth weight has not been adequately evaluated. Additionally, the accuracy of most these earlier studies is limited by the fact that they predate the widespread use of both ultrasonography (for accurate gestational dating) and intensive fetal testing (to establish fetal well-being). 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. [10]

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. [11] Post maturity infants particularly with macrosomia and post maturity are at increased risk of hypoglycemia. They also have increased chance of polycythemia. [12] The maternal risks of postdated 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 4th 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). [13-16]

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 Gynecology, AIIMS, New Delhi, India for one year . 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%)	34 (34%)
25-30	50 (50%)	52 (52%)
Above 30	20 (20%)	14 (14%)
Total	100	100
Mean ± SD	27.3 ± 3.46	28.4 ± 3.75
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	60 (60%)	80 (80%)
Instrumental delivery	10 (10%)	5 (5%)
LSCS	30 (30%)	15 (15%)
Total	100	100

Majority of the patients belonged to 25-30 years age group. Maximum number of patients belonged to the age group of 25-30 years both in cases (50%) and control group (50%). The maximum number of patients in the study group (82%) 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 and 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 (10% as compared to 5%).

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 (10%)	1 (1%)
Failed induction	5 (5%)	0
Non progress of labour	4 (4%)	4 (4%)
Non-reactive CTG	4 (4%)	1 (1%)
CPD	9 (9%)	0
Total	32	6

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 (9%). In the control group, most common indication was non progress of labor (4%) followed by acute fetal distress (01%) and non-reactive CTG (1%).

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

Maternal complication	Number of cases	Number of controls
LSCS	25 (25%)	15 (15%)
PPH	15 (15%)	5 (5%)
Sepsis	8 (8%)	2 (2%)
Total	48	22

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%)	80 (80%)
Fetal asphyxia (APGAR score<6/10)	15 (15%)	5 (5%)
Admission to NICU	16 (16%)	15 (15%)
IUD	4 (4%)	0
Total	100	100

15% of infants in the study group had asphyxia as compared to only 5% in the control group. 16% infants of the study group had to be admitted to the NICU as compared to 15% in the control group. 4% 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). [17] Prolongation of pregnancy complicates up to 10% of all pregnancies and carries increased risk to mother and fetus. [18,19] Post term perinatal mortality is greater than that of term pregnancy in almost all studies reviewed. [20] 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. [20] 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. [21]

Majority of the patients belonged to 25-30 years age group. Maximum number of patients belonged to the age group of 25-30 years both in cases (50%) and control group (50%). The maximum number of patients in the study group (82%) 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 and 55% were primigravida. Similar studies by Mahapatro [22] and Eden et al [23] 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[18] and Alexander et al's study. [24] 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 (10% as compared to 5%). In a similar study by Mahapatro18 the rate of LSCS was found to be 28.9% and that of instrumental delivery was 5.72%. In study by Singhal et al [25] the rate of LSCS was found to be 14.7% and that of instrumental delivery was 8.6%. Davinder et al [26] 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 (9%). In the control group, most common indication was non progress of labor (4%) followed by acute fetal distress (01%) and non-reactive CTG (1%). Bhriegu R et al [27] 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 [22], 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. 15% of infants in the study group had asphyxia as compared to only 5% in the control group. 16% infants of the study group had to be admitted to the NICU as compared to 15% in the control group. 4% 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. [28]

Conclusion

Obstetricians still face postdated pregnancies. Watchful expectation or induction for postdated labor are options. Our research found that postdated pregnancies increase LSCS and instrumental deliveries. Postdated pregnancies had increased fetal discomfort and meconium-stained fluid. Post-term pregnancies also have greater rates of postpartum hemorrhage, sepsis, NICU hospitalization, poor Apgar scores, fetal hypoxia, and intrauterine fatalities. To avoid the foregoing issues, postdated pregnancies should be inducted shortly after the predicted date.

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