

ORIGINAL ARTICLE

Determine the Outcome of Newborn in Post-Term Pregnancy

AESHA SADAF RIZWAN¹, AROOJ FATIMA², MOMY GUL³, SHAZIA ANWAR⁴, AALIA JADAAN⁵, NAZIA MUSHTAQ⁶

¹Assistant Professor of Obstetrics and Gynaecology, Shahida Islam Medical College, Lodhran

²FCPS Gynae & Obs, Senior Registrar Amna Inayat Medical College, Lahore

³Assistant Professor Obstetrics & Gynaecology, Gynae Unit-II Bolan Medical College, Quetta

⁴Assistant Professor Obstetrics & Gynaecology Aziz Fatimah Medical & Dental College, Faisalabad

⁵Associate Professor Obstetrics & Gynaecology Aziz Fatimah Medical & Dental College, Faisalabad

⁶Consultant Gynaecologist PNS Shifa Hospital/ Assistant Professor Behria Medical and Dental College, Karachi

Correspondence to: Dr. Arooj Fatima, Email: amnafiza22@gmail.com, Cell No: 03234682639

ABSTRACT

Objective: The objective of this study was to assess the outcome of newborn among pregnant females who deliver after prolonged pregnancy.

Study Design: Descriptive study

Place and Duration: Obstetrics & Gynaecology department of Shahida Islam Teaching Hospital, Lodhran for duration of six months from September 2020 to February 2021.

Materials and Methods: 100 patients with pregnancy of >40 weeks were included in study. The patients were not included in this study with medical disorders, intrauterine demise or pregnancy complications. Identification of parameters regarding poor neonatal outcome was done. Variable e.g. gestational age, parity, fetal movement, age, mode of delivery, ultrasound, admission cardiotocogram (CTG) and past prolonged pregnancy were studied.

Results: Most of the patients i.e. 39 (39%) were between twenty to twenty five years of age. In this study group multigravida were found in 60 (60%). Emergency caesarean section 65 (65%). Most of babies 64% were admitted to neonatal intensive care unit (ICU). Meconium aspiration syndrome was most general among complications which were found in 67 (67%). No fetal mortality was observed.

Conclusion: Pregnancy should be managed before 42 weeks of gestation and should not allow to go post-term due to high rate of neonatal mortality and morbidity.

Key words: Neonate, Post-term Pregnancy, Gestational Age, Meconium Aspiration, NICU, Mortality

INTRODUCTION

Pregnancy that has exceeds 42-weeks of gestation (294-days) and above from last menstrual period (LMP) is defined as prolonged / post-term pregnancy.¹ There is approximately 3% to 12% reported frequency of post-term pregnancy.² However, the real incidence is probably less since most frequent reasons of prolonged pregnancy diagnosis is incorrect dating.³ Risk factors includes genetic factors, male gender of fetus, prior post-term and primiparity for actual post term pregnancy.⁴ In the first two trimesters, obesity and consumption of fish is most recently describe factor.⁵ To calculate the EDD (Estimated Due Date) traditionally the LMP (Last Menstrual Period) has been used, but due to use of this method, incorrectness exist in females who have irregular cycle, have first trimester bleeding or who have no recent hormone birth control methods.⁶ Therefore, when estimate gestational age regularity and length of cycle should be taken into account other than last menstrual period date. In early pregnancy, ultrasonographic dating can improve estimated due date (EDD) reliability.⁷ However, it is essential to understand error margin reported at several times in each trimester. Prolonged / Post term pregnancy is related with increased incidence of prolonged labour and vacuum assisted birth or forceps (operative delivery). Due to a large size baby, patients are at risk of vaginal birth trauma.⁸ In a post-term pregnancy cesarean delivery is likely twice due to the size of baby. Wound complications and infections and postpartum hemorrhage are also increased the risk factors for patients.⁹ In a post term pregnancy there are also risk for newborn and fetus. Fetus may stop gaining weight, volume of amniotic fluid decreases and the function of placenta decreases towards the end of pregnancy. If the

baby is large than birth injury may also occur. There is also risk of meconium aspiration for those babies who born after 42-weeks.¹⁰ Prolonged pregnancy management in absence of other complications is contentious. Females should be offered induction after forty one weeks as recommended by guidelines of Royal College of Obstetricians and Gynecologists.¹¹ From 42-weeks increased antenatal monitoring should be offered to those females who decline induction, containing twice cardiotocography and single deepest amniotic pool estimation through ultrasound. Less than 8cm pool depth indicated increase risk of intrapartum to fetus.¹² If use expectant management, labour should induce at beginning of 43rd week as recommended by some sources.¹³ However, no difference between induced at 289 days & delivery mode and common outcome in recent randomized trial.¹⁴

METHODS

This descriptive case series study was conducted at Obstetrics & Gynaecology department of Shahida Islam Teaching Hospital, Lodhran for duration of six months from September 2020 to February 2021.. With error margin of 7% the sample size was calculated, confidence interval 95%. 100 un-booked patients with above 40-weeks duration of pregnancy were included in this study, who were sure about the date of last menstrual period or had 1st trimester ultrasound report and with regular menstrual series. The patients with medical disorders, intrauterine demise or pregnancy complications were not were excluded from the study. After obtaining informed consent data was collected and variables e.g. gestational age, fetal movement, past prolonged pregnancy, age, parity, CTG admissions & ultrasound findings were studied. Factors

were specifically noted who affecting poor perinatal outcome like birth weight, meconium aspiration, neonatal sepsis, respiratory distress syndrome, asphyxia, birth trauma, APGAR score, jaundice, admission and stay duration in neonatal intensive care unit.

The collected data was analyzed through SPSS 20.0. The quantitative variables were presented by mean \pm SD like age and percentage presented the parity. Qualitative variables were presented as percentage and calculating frequency distribution like parity. Like birth asphyxia categorical variables were calculated as percentage and as frequency.

RESULTS

Most of the patients 39 (39%) were 20 years to 25 years old. 30 (30%) patients between the age group of 26 years to 30 years, 18 (18%) were in 31-35 years of age group and 13 (13%) were above the age of 35 years. The numbers of primigravida 40 (40%) patients and multigravida patients were 60 (60%). Patient's gestational age shown in Table-I.

Table-I: Cases distribution by gestational age (N=120)

Gestational Age	=N	%age
42-Weeks	90	75%
43-Weeks	30	25%
>43-Weeks	0	0
Total	120	100%

All patients have longitudinal lie as confirmed by the ultrasonographic findings and transverse lie not presented by any patient. 3-3.5 kg estimated fetus weight in the majority 79 (79%) while only 21 (21%) have 3.6 kg to 4 kg weight. In 90 (90%) cephalic presentation was observed and breech presentation was found in only 10 (10%). 110-150 per minute fetal heart rate was found in 82 (82%) while less than 110 per minute fetal heart rate was found in 18 (18%).

The delivered babies, males babies were 65 (65%) and females 35 (35%). In 5 (5%) develop birth trauma due to instrumental delivery. The babies who shifted to neonatal intensive care unit (NICU) were 64 (64%). Within three days most of the babies 51 (51%) were discharged and between 4 to 5 days 37 (37%) babies were discharged and 12 (12%) were discharged between 6 to 7 days. Table II

According to the patients biophysical score, 10 (10%) had 6/10 score, 50 (50%) had 8/10 and 40 (40%) patients had 10/10 score. Table III.

Table II. Neonatal characteristics/admission to NICU and Hospital Stay

Neonatal Profile	=N	Percentage
Male	65	65%
Female	35	35%
Birth Trauma		
Yes	5	5%
No	95	95%
NICU Admission		
Yes	64	64%
No	36	36%
Hospital Stay		
<3days	51	51%
4-5 days	37	37%
6-7 days	12	12%

Table-III: Patients Biophysical Profile (N=100)

Biophysical Profile Score	=N	Percentage
6/10	10	10%
8/10	50	50%
10/10	40	40%
Total	120	100%

According to the delivery mode, most of the patients 65% had emergency C-section followed by spontaneous, instrumental and elective C-Section 20%, 12% and 3% respectively. Table IV

Table-IV: Delivery Mode (N=100)

Mode	=N	%age
Vaginal Instrumental	12	12%
Vaginal Spontaneous	20	20%
C-Section Elective	3	3%
C-Section Emergency	65	65%

Meconium aspiration syndrome was most common among complications which were found in 67 (67%). Asphyxia found in 55% neonates, 49 (49%) neonates had respiratory distress syndrome, jaundice neonatorum found in 8 (8%) and sepsis found in 7% neonates.

Table-V: Neonatal Complications

Complication	=N	%age	Total
Sepsis Neonatorum	7	7%	120
Jaundice neonatorum	8	8%	
Respiratory Distress Syndrome	49	49%	
Asphyxia	55	55%	
Meconium Aspiration Syndrome	67	67%	

DISCUSSION

More than two decades, pregnancy that has exceeds 42-weeks of gestation or 294-days has been defined as prolonged / post-term pregnancy.¹ Inaccurate pregnancy dating is the most common reason to diagnose it. To assess the gestational age in pregnancy last menstrual period with menstrual series is best physiological landmark. However, there are only few females which are sure about their dates and frequently cause anxiety when they came with postdate.² The cause of prolonged pregnancy is unknown. Mostly in obese, nulliparous the post-term pregnancy happens as well as in that females who had post-term pregnancy previously.⁴⁻¹⁴ There is high risk of perinatal mortality & morbidity involved in post-term pregnancies which also includes oligohydramnios, sepsis neonatorum, jaundice neonatorum, meconium aspiration syndrome, fetal distress, fetal birth injury, macrosomia and increase rate of C-section.¹⁵ Determination of fetal outcome among prolonged pregnancies is the view of this conducted study. In this study, mostly patients (90%) fall under the 20-years to 30-years of age group, which is similar to another study conducted by Oakland.¹⁶ In the study conducted by Oakland showed that 8.60% patients were below the age of thirty four years. According to these findings, in age group of 20-years to 25-years prolonged pregnancy is a common incidence. Although, nulliparous patients are more common for prolonged pregnancies, mostly patients (60%) in our study were multigravida which is similar to the study by Cucco et al.¹⁷ In multigravida patients one of the main recognize factor of prolonged pregnancy is past history of this type of event. Patients who had past history of

prolonged pregnancy are at risk of post-term pregnancy in later pregnancy.¹⁸ In our study, 40% patients had previous history of post-term pregnancy. In accordance with these findings, special care given by the obstetricians to avoid from later post-term pregnancy and patients may also take special care for prevention from post-term pregnancy.

Although abnormal fetal heart rate reported by many studies, 18% of our patients had deceleration. Prolonged pregnancy is not allied with breech presentation¹⁹ and breech presentation itself allied with increase rate of C-section. In post-term pregnancy caesarean section rate varies quite high as reported incidence varies from 15% to 80%.²⁰ Nearly 1/3rd patients of our study were delivered vaginally, consequently preventing the operation risk. There was caesarean delivery in 68% patients in our study. This high rate is due to that patients were un-booked and directly presented to labour room therefore had no follow-up. Unfavorable cervical findings mostly in our patients at the time of presentation which also contribute to high caesarean section rate in our patients.

Prolonged pregnancy is the main reason to increase the fetal morbidity. Due to reduced liquor volume and poor placental reserves, asphyxia and fetal distress is more common.²¹ Physiological passage of meconium which occur due to parasympathetic system maturation by forty two weeks of gestation increases the incidence of meconium aspiration.²² Neonatal complications incidence was quite high in our study e.g. asphyxia, respiratory distress syndrome, meconium aspiration syndrome, sepsis neonatorum and jaundice which are similar incidence of these complications reported internationally.⁷⁻⁸

In the absence of other complications, prolonged pregnancy management is controversial. Among obstetricians, there is debate on expectant management of post-term patients versus elective induction of labour.^{20,23} Stripping or sweeping the membranes and unprotected coitus may prevent from prolonged pregnancy.²⁴ To avoid from fetal morbidity close monitoring is required in any case. Careful counseling concerning the risk & benefits of each component of care should require individual patient management.

CONCLUSION

Prolonged pregnancy lies high rate of fetal mortality and morbidity with severe complications for mothers. It is concluded from this study that pregnancies should not be allowed going post-term as they are associated with higher neonatal mortality and morbidity. Before 42-weeks of gestation induction of labour should be offered to females to prevent from adverse neonatal consequences.

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