

## Outcome of Newborn in Prolonged / Post-term Pregnancy

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### ABSTRACT

**Aim:** To assess the outcome of newborn among pregnant females who deliver after prolonged pregnancy.

**Methods:** This descriptive case series study was conducted at Gynecology Department Shahida Islam Teaching, Hospital, Lodhran from 16.03.2017 to 19.12.2017. 120 patients with pregnancy of 42 weeks or above 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., 44(36.67%) were between twenty to twenty five years of age. In this study group multigravida were found in 70(58.33%) and primigravida found in 50(41.67). More than 42 weeks gestation age for patients in 90(75%) was included in this study. In 60 (50%) patients decreased fetal movements were recorded. Delivery mode was spontaneous vaginal 22(18.33%), instrumental 14(11.67%), emergency caesarean section 80(66.67%) and elective C-Section 4(3.33%). In born babies, males were 80(66.67%) and female were 40 (33.33%). Most of babies 63.33% were admitted to neonatal intensive care unit (ICU). Seven days for one baby maximum stay in intensive care unit. Birth trauma was found in six babies. Meconium aspiration syndrome was most general among complications which was found in 82(68.33%), followed by sepsis neonatorum in 8(6.67%), Jaundice neonatorum in 10(8.33%), respiratory distress syndrome in 58 (48.33%) and asphyxia neonatorum in 66(55%). 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, 42 weeks gestation, Gestational Age.

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### 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<sup>1</sup>. There is approximately 3% to 12% reported frequency of post-term pregnancy<sup>2</sup>. However, the real incidence is probably less since most frequent reasons of prolonged pregnancy diagnosis is incorrect dating<sup>3</sup>. Risk factors include genetic factors, male gender of fetus, prior postterm and primiparity for actual post-term pregnancy<sup>4</sup>. In the first two trimesters, obesity and consumption of fish is most recently describe factor<sup>5</sup>. 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<sup>6</sup>. 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<sup>7</sup>. 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.<sup>8</sup> In a post-term pregnancy cesarean delivery is likely twice due to the size of baby. Wound complications and infections and postpartum hemorrhage is also increased the risk factors for patients<sup>9</sup>. 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<sup>10</sup>. 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<sup>11</sup>. From 42-weeks increased antenatal monitoring should be offered to those females who decline induction, containing twicely cardiotocography and single deepest amniotic pool estimation through ultrasound. Less than 8cm pool depth indicated increase risk of intrapartum to fetus<sup>12</sup>. If use expectant management, labour should induce at beginning of 43<sup>rd</sup> week as recommended by some sources.<sup>13</sup> However, no difference between induced at 289 days & delivery mode and common outcome in recent randomized trial<sup>14</sup>.

### MATERIALS AND METHODS

This descriptive case series study was conducted at Gynecology Department of Shahida Islam Teaching, Hospital, Lodhran from 16.03.2017 to 19.12.2017. With error margin of 7% the sample size was calculated, confidence interval 95%. 120 un-booked patients with 42-weeks duration of pregnancy or more were included in this study, who were sure about the date of last menstrual period or had 1<sup>st</sup> trimester ultrasound report and with regular menstrual series. The patients with medical disorders, intrauterine demise or pregnancy complications were not included in this study. After obtaining informed consent data was collected and variables e.g. gestational

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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. The quantitative variables were presented by mean±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 44(36.67%) were 20 years to 25 years old. 40(33.33%) patients between the age group of 26 years to 30years, 20(16.66%) were in 31-35 years of age group and 16(13.33%) were above the age of 35 years. The numbers of primigravida 50(45.67%) patients were less than multigravida patients 70(58.33%). Patient's gestational age (Table 1).

Table 1: Cases distribution by gestational age (n=120)

Gestational Age	n	%age
42-Weeks	90	75
43-Weeks	30	25
>43-Weeks	0	0

Previous history of prolonged pregnancy was seen in 46(38.33%) patients and decrease fetal movements were recorded in 60(50%) patients. All patients have longitudinal lie as confirmed by the ultrasonographic findings and transverse lie not presented by any patient. 3-3.5kg estimated fetus weight in the majority 96(80%) while only 24(20%) have 3.6kg to 4kg weight. In 110(91.67%) cephalic presentation was observed and breech presentation was found in only 10(8.33%). Liquor amount adequate in 50(41.67%) and in 70(58.33%) the liquor amount was less than adequate. 110-150 per minute fetal heart rate was found in 100(83.33%) while less than 110 per minute fetal heart rate was found in 20(16.67%) (Tables 2,3).

Table 2: Patients biophysical profile (n=120)

Biophysical Profile Score	n	%age
6/10	12	10
8/10	60	50
10/10	48	40

Table 3: Delivery mode (n=120)

Mode	n	%age
Vaginal Instrumental	14	11.67
Vaginal Spontaneous	22	18.33
C-Section Elective	4	3.33
C-Section Emergency	80	66.67

The delivered babies, males babies in 80(66.67%) and females 40(33.33%). In 6(5%) develop birth trauma due to instrumental delivery. The babies who shifted to neonatal intensive care unit (ICU) were 76(63.33%). Within three days most of the babies 40(52.65%) were discharged and between 4 to 5 days 28(36.28%) babies were

discharged and from neonatal intensive care unit 8(10.53%) were discharged between 6 to 7 days. Complications of neonatal are shown in Table 4.

Table 4: Neonatal complications (n=120)

Complication	n	%age
Sepsis Neonatorum	8	6.67
Jaundice neonatorum	10	8.33
Respiratory Distress Syndrome	58	48.33
Asphyxia	66	55
Meconium Aspiration Syndrome	82	68.3

**DISCUSSION**

More than two decades, pregnancy that has exceeds 42-weeks of gestation or 294-days has been defined as prolonged/post-term pdregnancy<sup>1</sup>. 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<sup>2</sup>. The cause of prolonged pregnancy is unknown. Mostly in obese, nulliparous the postterm pregnancy happens as well as in that females who had post-term pregnancy previously<sup>4-14</sup>. There is high risk of perinatal mortality & morbidity involved in postterm pregnancies which also includes oligohydramnios, sepsis neonatorum, jaundice neonatorum, meconium aspiration syndrome, fetal distress, fetal birth injury, macrosomia and increase rate of C-section.<sup>15</sup> 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<sup>16</sup>. 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 (58.33%) in our study were multigravida which is also reported incidence by Cucco et al<sup>17</sup>. 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 postterm pregnancy in later pregnancy<sup>18</sup>. In our study 38.33% patients had previous history of postterm pregnancy. In accordance with these findings, special care given by the obstetricians to avoid from later postterm pregnancy and patients may also take special care for prevention from postterm pregnancy.

Although abnormal fetal heart rate reported by many studies, 16.67% of our patients had deceleration. Prolonged pregnancy is not allied with breech presentation<sup>19</sup> and breech presentation itself allied with increase rate of C-section. In postterm pregnancy caesarean section rate varies quite high as reported incidence varies from 15% to 80%<sup>20</sup>. Nearly 1/3<sup>rd</sup> patients of our study were delivered vaginally, consequently preventing the operation risk. There was caesarean delivery in 70% 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. Unfavourable 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<sup>21</sup>. Physiological passage of meconium which occur due to parasympathetic system maturation by forty two weeks of gestation increases the incidence of meconium aspiration<sup>22</sup>. 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<sup>7,8</sup>.

In the absence of other complications, prolonged pregnancy management is controversial. Among obstetricians, there is debate on expectant management of postterm patients versus elective induction of labour.<sup>20,23</sup> Stripping or sweeping the membranes and unprotected coitus may prevent from prolonged pregnancy<sup>24</sup>. 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

Pregnancies should not allow to go postterm as they are allied 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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