



## To Evaluate the Maternal & Fetal Complications and Outcomes in Post-Term Pregnancy: An Institutional Based Study

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### Abstract

**Background:** A post-terms pregnancy is a pregnancy that lasts longer than 42 weeks. Because there are some very serious risks for both mother and baby, your healthcare provider will follow a post-term pregnancy closely. The aim of this study to evaluated the maternal & fetal complications and outcomes in pregnancy beyond 40 weeks.

**Material & Methods:** The Prospective hospital based study has been carried out on 150 patients at or beyond 40 weeks of gestation in Umaid Hospital attached to Dr. Sampurnanand Medical College, Jodhpur. Participants after understanding the study protocol and procedure will be asked to give their written consents for the study.

**Results:** The mean age of post was 23.8% in >42 weeks and 23.9% in pregnancy >40 weeks. The Rate of bishop Score being less than 6(>6) is statistically different between pregnancy >40 weeks and >42 weeks, P value = 0.0093 (<0.05-significant). The perinatal morbidity Rate is statistically different between pregnancy >40 and >42 weeks, P value = 0.0375 (<0.05-significant). The Incidence of Apgar score of newborn Being less than 6(<6) at Minute is statistically different between pregnancy>40 and >42 weeks, P value = 0.0005 (<0.05-significant).

**Conclusion:** The key to a favourable outcome in post term pregnancy requires a blending of timely consultation with a specialist in maternal fetal medicine, an individualized plan management for each patient and patient involvement in treatment decision.

**Keywords:** Post-term pregnancy, fetal outcome, maternal outcome, Bishop score.

### Introduction

The problems of prolonged pregnancies place the obstetrician in a delicate situation between increasing pressures for noninterventionist approaches to obstetrical care and more active management with the potential pitfall of failed induction, caesarean delivery and other hazards.

Post-term pregnancy causes anxiety and distress to women and their families. Women should therefore be counseled in their antenatal visit that they are likely to deliver between 38 and 42 weeks and not on the exact date of delivery.<sup>1</sup>

Morbidity and mortality increased between 41 and 42 weeks, more so after 42 week. Centres vary in

the availability of tests for fetal surveillance and the ability to cope with the demand. Based on these, it is difficult to have a uniform policy of management of post-terms pregnancy. There is a general consensus that perinatal mortality and morbidity are increased several folds when pregnancies are prolonged beyond 42 week.<sup>2</sup>

Some studies report decreasing prevalence rates, possibly due to more reliable dating methods or a change in obstetric management towards a more aggressive induction policy.

Risk factors for post-term pregnancy includes maternal age, primiparity, prior post-terms pregnancy, male gender of the fetus, genetic factors and environmental factors.<sup>3,4</sup>

Some congenital anomalies like anencephaly, trisomies (16 and 18) are associated with post-terms delivery. This also applies to conditions that alter the fetal adrenal-pituitary axis (absence of the fetal pituitary or fetal adrenal hypoplasia). These conditions lack the high concentrations of estrogen seen in normal pregnancies.<sup>5</sup>

Another risk factor is obesity, which appears to increase the risk of pregnancies progressing beyond 41 weeks of gestation<sup>6</sup>. The aim of this study to evaluated the maternal & fetal complications and outcomes in pregnancy beyond 40 weeks.

### Material & Methods

The Prospective hospital based study has been carried out on 150 patients at or beyond 40 weeks of gestation in Umaid Hospital attached to Dr. Sampurnanand Medical College, Jodhpur. Participants after understanding the study protocol and procedure will be asked to give their written consents for the study.

### Inclusion Criteria

1. Gestational age >40 weeks
2. Age group 18-35 years.
3. singleton pregnancy
4. Reliable dates.

### Exclusion Criteria

1. Accurate dating by ultrasound missing
2. Delivery by planned caesarean section

3. Cases of fetal growth restriction,
4. Congenital malformations or
5. Chromosomal abnormalities
6. known obstetric complications – Malpresentation, placenta previa, BOH, Pervious LSCS, twin pregnancy
7. Medical complications like pre-eclamptic toxemia, diabetes & cardiac disease in pregnancy.

### Results

The present study comprised of 1502 patients of which 50 patients were beyond 40 weeks (control group) and 100 patients beyond 42 weeks (case group). The mean age of post was 23.8% in >42 weeks and 23.9% in pregnancy >40 weeks. The post term pregnancy rate was equal (50%) in primi's and in multi's in pregnancy beyond 40 weeks but in pregnancy beyond 42 weeks, post term pregnancy rate was 66% in primi and 34% in multigravida.

Our study shows that more no. of patients was induced beyond 42 weeks in comparison to those beyond 40 weeks group. The Rate of bishop Score being less than 6 (>6) is statistically different between pregnancy >40 weeks and >42 weeks, P value = 0.0093 (<0.05-significant). So our study shows that caesarean section births are doubled in pregnancy beyond 42 weeks as compared with pregnancy beyond 40 weeks (table 1).

### Fetal outcome

The maximum number of patients (44%) had baby birth weight between 2.5-2.9 kg in pregnancy beyond 40 weeks, while maximum number of cases (42%) were having their birth weight between 3-3.5 kg in pregnancy beyond 42 weeks. The perinatal morbidity Rate is statistically different between pregnancy >40 and >42 weeks, P value = 0.0375 (<0.05-significant). The Rate of Meconium Aspiration syndrome is statistically different between pregnancy >40 and >42 weeks, A and Group B, P value = 0.0216 (<0.05-significant). The Rate of Birth Asphyxia is statistically different between pregnancy >40 and >42 weeks, P value = 0.0011 (<0.05-significant).

Overall mortality was 5% in pregnancy >42 weeks in comparison to 2% in pregnancy >40 weeks (table 2).

### Maternal outcome

The present study showed that 8% of cases post-term >42 weeks had PPH, and 4% of cases post-

term >40 weeks had PPH. The Incidence of Apgar score of newborn Being less than 6(<6) at Minute is statistically different between pregnancy>40 and >42 weeks, P value = 0.0005 (<0.05-significant) (table 3).

**Table No. 1:** Parity wise profile of patients

Profile	≥40 weeks (N=50)	≥42 weeks (N=100)
Age (yrs)		
<20 yrs	1 (2%)	2(2%)
20-25 yrs	36(72%)	77(77%)
26-30 yrs	11(22%)	20(20%)
31-35 yrs	1(2%)	2(2%)
>35 yrs	1(2%)	0
GPAL		
Primi	25(50%)	66(66%)
Multi	25(50%)	34(34%)
Mode of labour		
Spontaneous	14(28%)	19(19%)
Induced	30(60%)	65(65%)
Bishop Score		
<6	9(18%)	40(40%)
≥6	41(82%)	60(60%)
Mode of Delivery		
NVD	40 (80%)	59 (59%)
Instrumental	0	1 (1%)
LSCS	10 (20%)	40 (40%)

**Table No. 2:** Fetal outcome

Fetal outcome	≥40 weeks (N=50)	≥42 weeks (N=100)
Birth weight (kg)		
<2.5 kg	1 (2%)	1 (1%)
2.5 – 2.9 kg	22 (44%)	24 (24%)
3 – 3.4 kg	17 (34%)	42 (42%)
3.5 – 3.9 kg	9 (18%)	24 (24%)
≥ 4 kg	1 (2%)	9 (9%)
Perinatal morbidity		
Absent	43 (86%)	46 (46%)
Present	7 (14%)	54 (54%)
MAS	1 (2%)	15 (15%)
Birth asphyxia	6 (12%)	38 (38%)
Shoulder dystocia	0	1 (1%)
Incidence of perinatal mortality		
IUD	0	3 (3%)
Still Birth	0	1 (1%)
NICU mortality	1 (2%)	1 (1%)

**Table No. 3: Maternal outcome**

Maternal outcome	≥40 weeks (N=50)	≥42 weeks (N=100)
	<b>Maternal morbidity</b>	
Absent	47 (94)%	86 (86%)
Present	3 (6%)	14 (14%)
Tears	1 (2%)	6 (6%)
PPH	2 (4%)	8 (8%)
	<b>Apgar Score at 5 minute</b>	
0-3	1 (2%)	20 (20%)
4-6	6 (12%)	22 (22%)
>6	43 (86%)	58 (58%)

### Discussion

The present study showed that increased incidence of post-term pregnancy in primigravide compared to multigravidas. In a Swedish study, the risk of post-term pregnancy also increased if the risk of post-term pregnancy also increased if the woman was primiparous.<sup>3</sup>

The youngest mother in the study was 18 years old. The eldest mother was 36 years old. There were no cases over 36 years. A similar observation was made by Eden et al<sup>7</sup> where the mean age of post term was 25.8 years. In our study, the mean age of post term was 23.8% in >42 weeks and 23.9% in pregnancy >40 weeks.

Bishops score of < 6 was there in 18% of pregnancy >40 weeks, 40% of pregnancy >42 weeks. So Pregnancy advances beyond 40 weeks.

In study by Harris et al 1983, shows only 8% was found to have a Bishop score >6 at >42 weeks.<sup>8</sup> In a Swedish study of 103 women who were followed from gestational day 294 onwards, 73% of primiparous and 53% of multiparous women had Bishop scores 0-5 at study entry.<sup>9</sup> In this study, primiparous women experienced a more gradual ripening of cervix with increasing gestational length, whereas multiparous women often had a sudden change from unripe to ripe cervix.

Study done by Hannah and colleagues (1992)<sup>10</sup> found that 40% of women with a 41 weeks pregnancy had Bishops score <6 which is comparable to our study.

Our study shows that caesarean section births are doubled in pregnancy beyond 42 weeks as compared with pregnancy beyond 40 weeks.

Result of this study was comparable with Ushar 1988<sup>11</sup>. Caughey et al; 2007<sup>12</sup> found that the rate of caesarean section was 9.0, 14.0, and 21.7% at 40, 41 and 42 weeks gestation respectively. Today rate of caesarean section has been increased because of better fetal surveillance and advance in our knowledge and technique have made it possible for us to detect ante-partum and intra-partum complications early.

In our study the rate of caesarean delivery is high probably due to the fact that our hospital having larger catchment area including many districta and lack of caesarean section facility at periphery.

In an Indian study by Devinder Kaur er al (1997)<sup>13</sup> the caesarean section rate was 30% in induced group when compared to 18% in-spontaneous group which is comparable to our study. According to Raphael N. Pollack (1992)<sup>14</sup>, 23% of the post term infants had macrosomia which is higher than our study.

Incidence of Birth asphyxia was 38% in pregnancy >42 weeks in comparison to 12% in pregnancy >40 weeks group. Incidence of birth asphyxia in >42 weeks post-term group is 3 times that of 40 weeks post-term group. There are studies indicating that the risk of perinatal morbidity, including fetal distress and asphyxia, meconium aspiration, birth trauma, and neonatalconvulsions, increases with each week beyond 40 weeks.

Overall mortality was 5% in pregnancy > 42 weeks in comparison to 2% in pregnancy > pregnancy > 40 weeks, There was no case of still birth and IUD in >40 weeks group but 1 NICU mortality in this group. The dominating causes of

fetal death in postterm pregnancy are intrapartum asphyxia and aspiration of meconium [Hovi et al., 2006]<sup>15</sup>.

There were no antenatal deaths in the present study due to post term pregnancy. The main cause of morbidity in the post term consisted of increased rate of caesarean section, perineal tears, cervical tears and postpartum haemorrhage. 8% of cases post-term >42 weeks had PPH, and 4% of cases post-term 40 week had PPH. A study done by Runa Heimstad et al 2006<sup>16</sup> shows 9.7 to 14.6% of PPH in post-term pregnancy which is higher than our study.

This study shows that apgar score goes on decreasing as gestation advances beyond 40 weeks. A linear decrease of the association between Apgar score < 6 at 5 minutes with increasing duration of pregnancy was indicated.<sup>17</sup> The risk of low Apgar score at five minutes has been found to be increase in post-term compared to term deliveries in study done by Clausson B et al.<sup>18</sup>

### Conclusion:

We concluded from this study that maternal morbidity significantly increased in terms of caserean section rate (40%), PPH (8%), and perineal tear (6%). Also reveals that perinatal morbidity in terms of low apgar score (42%), MAS (15%), birth asphyxia (38%), NICU admissions (39%), macrosomia (9%) was significantly increased.

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