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**Original Research Article**

# Study of maternal and foetal outcome in post-term pregnancies

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## ABSTRACT

**Background:** Post-term pregnancies are associated with significant foetal morbidity and increase in interventions which jeopardise the health of the fetus as well as the mother. The objective of this study was to determine the incidence, risk factors, maternal and foetal outcomes of such pregnancies.
**Methods:** A retrospective study of 117 post-term pregnancies was studied over a period of one year, January to December 2016. Age, parity, amniotic fluid index, color of liquor, mode of delivery, maternal and foetal outcomes were studied in detail and analysed.
**Results:** There were 10390 deliveries during our study period. 130 among them were post-term, 117 were included in the study, amounting to an incidence of 1.12%. Post-term pregnancy was noted to be higher in women of age group 21-25years (68.5%) and among primigravidae (51.2%). 66 women experienced vaginal delivery (56.4%) and 49 women underwent caesarean delivery (41.8%). Most common indications for caesarean section were foetal distress, oligohydramnios, and foetal growth restriction. NICU admissions were 16 babies and 2 early neonatal deaths were noted.
**Conclusions:** Post-term pregnancy requires early detection, proper planning of pregnancy termination. These women should be offered induction of labour prior to 42 weeks of gestation age to avoid adverse maternal and perinatal outcomes.

**Keywords:** Birth asphyxia, Meconium aspiration sydrome, Oligohydramnios, Perinatal morbidity and mortality, Post-term pregnancy

## INTRODUCTION

According to WHO, post-term pregnancy is defined as pregnancy that persists beyond 294 days or 42 weeks of gestation. The incidence of post-term pregnancy ia about 7.1% of all pregnancies.[1]

Incidence varies based on whether the calculation of gestation age is based on history and clinical examination or early pregnancy ultrasonography.[2,3] Ultrasonographic dating in early pregnancy improves the reliability of the estimated gestation age. Complications of post-term pregnancy are implicated on both foetus as well as the mother.

The perinatal mortality rate i.e. still births and early neonatal deaths, at 42 weeks is twice as high as that at term (4.7 versus 2-3/1000 births). The mortality rate increases further 4-fold at 43 weeks and 5-7 fold as 44 weeks of gestation.[4] Increased risk of oligohydramnios, meconium aspiration syndrome, foetal distress, macrosomia and caesarean delivery are common risks associated, which jeopardize the health of the foetus as well as the mother.

## METHODS

A retrospective analysis of all the patients who delivered during the time frame of January 2016- December 2016, at Karnataka Institute of Medical Sciences, Hubli, either vaginally or by caesarean delivery.

### *Inclusion criteria*

- Women with pregnancy beyond 42 weeks, in whom menstrual cycles were regular and were certain of their LMP

### *Exclusion criteria*

- Women with irregular cycles and uncertain dates
- Women with medical complications like hypertension, diabetes etc.

Data abstracted included demographic data- age, parity, mode of delivery, foetal outcome in terms of admission to NICU, perinatal mortality, maternal morbidity and mortality were recorded. Descriptive analyses were carried out to summarize relevant variables.

## RESULTS

Between January 2016-december 2016, there were 10390 deliveries, among them 130 were post-term pregnancies, yielding to an incidence of 1.25%. 13 women among them were excluded from the study due to non-fulfilment of the inclusion criteria. 14 women were in the age group of <21years, 80 women of age 21-25years, 18 women 26-30years and 5 women >30years.

**Table 1: Age distribution.**

| Age | Number | Percentage |
|---|---|---|
| ≤20 years | 14 | 11.9 |
| 21-25 years | 80 | 68.3 |
| 26-30 years | 18 | 15.3 |
| ≥30 years | 5 | 4.2 |

60 women, among 117 were primipara and 57 were multipara. Parity distribution is tabulated as described below.

**Table 2: Parity distribution.**

| Gravidity | Number | Percentage |
|---|---|---|
| Primigravida | 60 | 51.2 |
| Gravida 2 | 31 | 26.4 |
| Gravida 3 | 20 | 17 |
| ≥Gravida 4 | 6 | 5.1 |

Amniotic fluid reduces when pregnancy progresses beyond 40 weeks, more so when extends beyond 42 weeks. Amniotic fluid index was noted at admission in 70 women was <5cms.

**Table 3: Amniotic fluid index at admission.**

| Amniotic fluid index | Number | Percentage |
|---|---|---|
| 0-5 cms | 70 | 59.8 |
| ≥6 cms | 47 | 40 |

61 women (52.1%) meconium stained liquor and 56 women (47.5%) had clear liquor. 66 women delivered vaginally, 2 delivered with the help of operative vaginal delivery and 49 women underwent caesarean section for various indications.

**Table 4: Mode of delivery.**

| Mode of delivery | Number | Percentage |
|---|---|---|
| Vaginal delivery | 66 | 56.4 |
| Instrumental delivery | 2 | 1.7 |
| Caesarean delivery | 49 | 41.8 |

Most common indication for caesarean section was foetal distress (30.6%), followed by oligohydramnios (20.4%) and foetal growth restriction (12.2%).

**Table 5: Indications for caesarean section.**

| Indication for C-section | Number | Percentage |
|---|---|---|
| Foetal distress/ MSAF | 15 | 30.6 |
| Oligohydramnios | 10 | 20.4 |
| Foetal growth restriction | 6 | 12.2 |
| PROM | 4 | 8.1 |
| Failed induction | 3 | 6.1 |
| Breech | 3 | 6.1 |
| Obstructed labor | 3 | 6.1 |
| Previous 2 LSCS | 2 | 4.0 |
| Cephalo-pelvic disproportion | 2 | 4.0 |
| Non-progress of labour | 1 | 2.0 |
| Total | 49 | |

**Table 6: Foetal outcome.**

| Foetal outcome | Number | Percentage |
|---|---|---|
| Foetal distress | 24 | 20.5 |
| NICU admission | 16 | 13.6 |
| Meconium aspiration syndrome | 7 | 5.9 |
| Foetal growth restriction | 13 | 11.1 |
| Macrosomia | 2 | 1.7 |
| Sepsis | 2 | 1.7 |
| TTN | 1 | 0.8 |
| IUD | 7 | 5.9 |
| Early neonatal death | 2 | 1.7 |

24 neonates (20.5%) suffered from foetal distress, 13 were growth restricted (11.11%), 2 were macrosomic babies (1.7%). 16 babies (13.6%) were shifted to NICU in view of birth asphyxia, meconium aspiration syndrome and sepsis. 7 women were admitted with a diagnosis of intrauterine foetal demise and 2 neonates died in early neonatal period (1 baby within half an hour of delivery

due to severe birth asphyxia) and the other on 3rd post-natal day due to birth asphyxia.

## DISCUSSION

In this retrospective study, the incidence of post-term pregnancy is 1.25%, which is much less than reported by other studies (8.3%) by Ingemarsson et al.[5] 7.6% by Ahanya et al, Zeitlin et al found the incidence as 0.4 to 7.1% with average of 3.7% in different countries of Europe.[6,7] In present study, most of the patients belonged to the age group of 21-25years. Eden et al also described maximum age of 25.8%. this finding concluded that prolonged pregnancy and post-term pregnancy is common at younger age. This could be because majority of women conceiving belong to this age group in our country.

60 patients were primigravida and 57 were multigravidae. No significant differences were noted in the parity by Alexander JM a study conducted on prolonged pregnancy.[8]

56.4% of post-term pregnancies had vaginal deliveries, while 41.8% required intervention in the form of caesarean section, 1.7% operative vaginal deliveries. In a study by Vandana et al, 53.8% had vaginal delivery, 3.8% operative vaginal delivery and 42.30% had LSCS.[9] In a study by Nimbargi et al the caesarean section rate was 61.3%.[10] The rate of surgical intervention is increased in post term pregnancies because of meconium staining of amniotic fluid, non-progress of labour, intrapartum foetal hypoxia and oligohydramnios. In a study by Caughen AB and Bishop JJ, rate of caesarean deliveries, operative vaginal deliveries, 3rd and 4th degree perineal tears and PPH are increased in women beyond 40 weeks of pregnancy.[11] In the present study, out of 49 caesarean deliveries, 15 women (30%) underwent Caesarean for foetal distress, 10 for oligohydramnios (20.4%). In a study by Vadakaluru U, foetal distress (44%) was the major indication for LSCS.[12]

Post-term pregnancy has been associated with increased risk of perinatal mortality and morbidity including meconium stained amniotic fluid, meconium aspiration syndrome, oligohydramnios, macrosomia, foetal birth injury or intrapartum foetal distress. In present study, the incidence of both maternal and foetal complication was identified, maximum foetuses suffered from distress (20.5%).

A study conducted in Denmark by Olesan and colleagues showed the risk of perinatal and obstetric complication to be high in post term delivery compared to term delivery.[13] The risk of perinatal death was 1.33. similar study was conducted, where in the incidence of still birth was lowest at 40 weeks and gradually increased as pregnancy advanced.[14] In present study the incidence of still birth was 5.9%.

61 patients had meconium stained liquor, aspiration of meconium during intrauterine life result in meconium aspiration syndrome, a leading cause of perinatal death as reported by Kistka.[15] There is higher chances of meconium aspiration in post-term pregnancy as reported by Adhikari.[16]

## CONCLUSION

Post-term pregnancy requires early detection, proper planning regarding evaluation and termination of pregnancy. Pregnancy must not be allowed to progress to post-term, due to high association of perinatal mortality and maternal morbidity. women with post-term gestations much be offered induction of labour before 42 weeks for a better foetal and maternal outcome.

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