



## Postdate pregnancies: management options

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**OBJECTIVE(S) :** To analyze the outcome of pregnancies which cross expected date of delivery.

**METHOD(S) :** A total of 2090 women amongst 13,839 deliveries (15.19%) reported with pregnancy beyond 40 weeks – 1295 (62%) between 40-41 weeks, 545 (26.07%) between 41-42 weeks, and 250 (12%) beyond 42 weeks. Two thousand and ninety women with gestation between 37 to 40 weeks with similar inclusion and exclusion criteria formed the control group.

**RESULTS :** Out of the 2090 study subjects, 80 (3.8%) underwent elective cesarean section for unrelated indications, and hence were not analyzed further. Of the remaining 2010 women, 1060 (52.7%) had spontaneous labor and in 950 (47.3%) labor was induced for oligohydramnios or fetal compromise. Amongst the study subjects with spontaneous labor cesarean section rate was 30.18% (320/1060) and with induced labor it was 21.58% (205/950). This difference is statistically significant ( $P < 0.05$ ). In the controls all the women had spontaneous labor but 30.70% (629/2090) underwent cesarean section. This is similar to the 30.18% in the study group. In the study subjects intrapartum fetal complications seen were presence of meconium in 365 (18.16%), adverse fetal heart rate patterns in 169 (8.4%), and shoulder dystocia in two. Maternal complications were postpartum hemorrhage in 10 (0.47%) and postpartum sepsis in 20 women (0.95%). In the study subjects corrected perinatal mortality rate (PNMR) (excluding lethal congenital anomalies) was 13.43 and amongst the controls it was 9.56 ( $P = 0.8637$ ).

**CONCLUSION(S) :** In women with postdate pregnancy an individualized approach with induction of labor when necessary is recommended.

**Key words :** postdate pregnancy

### Introduction

It was as early as the beginning of the last century that Ballantyne first raised the issue of the harmful consequences of a fetus staying too long in the intrauterine environment<sup>1</sup>. Little is known about its etiology and controversies continue about the management of such cases<sup>2</sup>. It has been reported that in a pregnancy which has crossed the expected date of delivery, there is an increased risk of oligohydramnios, meconium stained amniotic fluid, macrosomia, fetal post-maturity syndrome, and cesarean delivery, all of which

jeopardise the baby as well as the mother<sup>3-8</sup>. Prolonged pregnancy has always been regarded as a high risk condition because perinatal morbidity and mortality is known to rise. The interest in postdatism (just beyond expected date of delivery) has been recent and the management is controversial, more so with the advent of sonography providing information about placental aging and amount of amniotic fluid<sup>4-6</sup>. The aim of the present retrospective study was to analyze the outcome of pregnancies which crossed the expected date of delivery.

### Methods

A retrospective analysis of 5 years (1st January, 2000 to 31st December, 2004) records was done to know the outcome of pregnancies beyond 40 weeks with regards to mode of delivery, and maternal and fetal outcome. The inclusion criteria for study subjects were, regular cycles with known last menstrual date, singleton pregnancy, vertex

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presentation, gestational age beyond 40 weeks, and delivery at our tertiary teaching hospital. Cases with polyhydramnios, eclampsia, antepartum hemorrhage, and congenital anomalies visible on ultrasonography were excluded. Equal number of women with gestation between 37 and 40 weeks with similar inclusion exclusion criteria were included as controls. Study subjects were further grouped into duration of gestation of 40-41 weeks, 41-42 weeks and beyond 42 weeks.

As a routine, women with pregnancy beyond dates were treated expectantly if the amount of liquor was adequate clinically as well as sonographically, and were induced if there was oligohydroamnios clinically and/or sonographically, or if fetal compromise was detected clinically and/or by nonstress test (NST). The agent for induction was decided after assessing the Bishop score and amount of liquor amni. If Bishop score was less than 6, dinoprostone tablets or gel were used and if it was more than 6, oxytocin was used. Fetal distress was defined as persisting fetal heart rate of less than 120 or more than 160 per minute with or without the presence of meconium.

**Results**

The total deliveries during the study period were 13,837. A total of 2090 (15.1%) women were the study subjects; 1295 of them (62%) between 40-41 weeks, 545 (26.07%) between 41-42 weeks and 250 (12%) beyond 42 weeks. 68.66%

were primigravidas and 31.34% multigravidas. Among the women delivering in our hospital, 45% constitute primigravidas. Primigravidas were significantly more in the study group (P<0.001). Majority of the study subjects and controls were between 20-24 years. Out of 2090 study subjects, 80 (3.8%) underwent elective cesarean section (CS) for unrelated indications like cephalopelvic disproportion (53 or 2.5%), malpresentations (15 or 0.71%) and placenta previa (12 or 0.57%). These cases were excluded from the analysis. Of the remaining 2010 women, 1060 (52.7%) had spontaneous labor and 950 (47.3%) had induced labor.

Amongst the study subjects with spontaneous labor, the CS rate was 30.1% (320/1060), and instrumental delivery rate 2.3% (25/1060). In women who had induced labor, CS rate was 21.5% (205/950) and instrumental delivery rate 1.5% (15/950). The indications for instrumental deliveries were fetal distress in 96% and poor maternal bearing down efforts in 4%. In the 2090 controls, all women had spontaneous labor, but 629 (30%) underwent CS, 1432 (68.6%) delivered normally and 29 (1.4%) had instrumental deliveries (Table 1).

In the study cases intrapartum fetal complications were, presence of meconium in 365(18.15%), adverse fetal heart rate patterns in 169 (8.4%), and shoulder dystocia in two (Table 2). The maternal complications were postpartum hemorrhage in 10 (0.47%) and postpartum sepsis in 20 (0.95%).

**Table 1. Gestational age and mode of delivery.**

	Gestational age (weeks)		Spontaneous labor				Induced labor				Total
			ND	INS. D	CS		ND	INS.D	CS		
Control group	37-40 (n=2090)	n %	2090 100	1432 68.52	29 1.38	629 30.10 <sup>a,b,c</sup>	- -	- -	- -	- -	2090 100
Study group	Postdate >40-41	n %	811 100	550 77.37%	7 0.98	154 21.65 <sup>a,d</sup>	584 100	534 91.43	- -	50 8.5 <sup>d,g,h</sup>	1295 100
Study group	Postdate >41-42	n %	213 100	130 61.03	8 3.76	75 35.21 <sup>b,e</sup>	252 100	166 65.80	6 2.40	80 31.8 <sup>e,g,i</sup>	465 100
Study group	Postterm >42	n %	136 100	35 25.00	10 7.36	91 66.91 <sup>c,f</sup>	114 100	30 26.30	9 7.90	75 65.80 <sup>f,h,i</sup>	250 100
Study group	Total	n %	1060 100	715 67.46	25 2.38	320 30.18 <sup>j</sup>	950 100	730 76.70	15 1.50	205 21.80 <sup>j</sup>	2010 100
	Grand Total			2147	54	949		730	15	205	4100

<sup>c</sup> Elective CS in 80 study subjects were excluded      INS D - Instrumental delivery CS - Cesarean section  
<sup>a</sup> P=0.197    <sup>b</sup> P=0.45    <sup>c</sup> P<0.0001    <sup>d</sup> P=0.011    <sup>e</sup> P=0.54    <sup>f</sup> P=0.88    <sup>g</sup> P<0.0001    <sup>h</sup> 15 P< 0.0001    <sup>i</sup> P< 0.0001  
<sup>j</sup> P = 0.197    <sup>k</sup> P <0.05

Table 2. Presence of meconium,

	Gestation (weeks)	Total		Presence of Meconium			
				Spontaneous labor		Induced labor	
				Yes	No.	Yes	No.
Controls	37-40	2090	n	208	1882	-	-
			%	9.95 <sup>a,b,c</sup>	90.04		
	40-41	1295	n	40	671	36	548
			%	5.62 <sup>a,d</sup>	94.4	6.2 <sup>d,g</sup>	93.8
Study Subject	41-42	465	n	54	159	48	204
			%	25.4 <sup>b,e</sup>	74.64	19.0 <sup>e,g,h</sup>	81.0
	>42	250	n	104	32	83	31
			%	76.5 <sup>c,f</sup>	23.52	72.8 <sup>f,h</sup>	27.2
Total		2010	n	198	862	167	783
			%	18.67	81.32	17.57	82.42
Grand Total		4100		406	2744	167	783

<sup>a</sup> P=0.29<sup>b</sup> P=0.005<sup>c</sup> P<0.001<sup>d</sup> P=1.0<sup>e</sup> P=0.30<sup>f</sup> P=0.5<sup>g</sup> P=0.005<sup>h</sup> P=0.0001

Thirty two (1.59%) babies in the study group and 20 (0.95%) in the control group were lost ( $P < 0.05$ ). Amongst the nine stillbirths, five (0.38 %) were out of the 1295 at 40-41 weeks gestation and two (0.36%) out of the 545 at 41-42 weeks gestation; this difference is not significant. There were 2 (0.8 %) stillbirths in the 250 women beyond 42 weeks. This is significantly higher ( $P < 0.05$ ) than still births in women at 40-42 weeks gestation. Only one out of the nine stillbirths had delivered normally, four had instrumental deliveries and four had CS. Fifty two babies were admitted to the neonatal intensive care unit (NICU) for birth asphyxia; 29 (55.77%) of them survived and 23 (44.23%) were lost. Out of the 23 that were lost, eight (0.61%) were out of the 1295 born between 40-41 weeks gestation, 10 (1.83%) out of the 545 born between 41-42 weeks and five (2.0%) out of the 250 born beyond 42 weeks. Five (9.61%) babies had lethal congenital anomalies diagnosed postnatally and 18 (34.61%) had meconium aspiration syndrome with hypoxic ischemic encephalopathy. Excluding lethal congenital anomalies, corrected perinatal mortality rate (PNMR) in the study subjects was 13.43 and amongst the controls it was 9.56. Statistically the difference was not significant ( $P = 0.86$ ).

## Discussion

Some pregnancies last longer than 40 weeks and the risk of perinatal mortality is believed to increase in pregnancies that last two or more weeks after the expected date of delivery. It is debated whether or not induction of labor could result in a better pregnancy outcome in women who cross expected date of delivery. There is reluctance on the part of some to

advocate routine induction because of the presumed possibilities of increased operative deliveries and hence increased morbidity. Recent reports indicate that induction of labor is actually associated with reduced risk of perinatal mortality<sup>9</sup> and a decrease in CS for fetal distress<sup>10</sup>. The results of the Canadian Multicenter Postterm Pregnancy Trial<sup>11</sup> also provides evidence to support induction of labor at 41+ weeks. Our observations are similar.

In the present study 3.8% or 80 women with postdate pregnancies had elective CS. Of the remaining 2010 women 52.24% had spontaneous labor and 47.76% were induced either because of evidence of decreasing liquor or nonassuring NST. The CS rate in women with spontaneous labor was 30.18% similar to 30.10% in the controls. Amongst those with induced labor CS rate was 21.80% which is significantly different from 30.18% in women with spontaneous labor ( $P < 0.05$ ). In the study group instrumental deliveries were 2.38% in spontaneous labor and 1.50% in induced labor. 1.38% in controls had instrumental deliveries.

The primary objective of treatment should be to identify the fetus at risk and thereby to plan an appropriate management. The decision regarding the expectant versus active management of postdate/prolonged pregnancy should depend on balancing the effectiveness of induction against the effectiveness of increased fetal surveillance for preventing fetal and neonatal loss<sup>12,6</sup>.

We have observed that there was no difference in the presence of meconium in the study cases where labor was

induced, compared to that in those with spontaneous labor. It was also observed that elective induction was not associated with increase in operative deliveries. Overall there was no significantly increased perinatal mortality in study cases as compared that in controls.

If a woman with prolonged pregnancy has adequate amount of liquor and there is no fetal compromise she could be managed expectantly. However if there is compliance problem or evidence of decreasing liquor or nonassuring fetal condition detected by ultrasonography and, or NST, intervention is imperative. An individualized approach is recommended.

### Conclusion

Management of women with postdate pregnancy should be individualized taking into consideration the amount of liquor and the findings of sonography and NST.

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