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**Maternal and Fetal Outcomes in Uncomplicated Postdated Pregnancy**

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**Introduction:** A pregnancy that lasts beyond the expected date of delivery is called as postdates pregnancy. Postdates pregnancy is associated with an increased risk of fetal, neonatal mortality and morbidity as well as an increased maternal morbidity. The aim of the study was to assess the maternal and fetal outcomes in uncomplicated postdates pregnancy.

**Methods:** A cross sectional study was conducted among 196 uncomplicated postdates pregnancies in two tertiary care centers i.e. Manipal Teaching Hospital and Gandaki Medical College, Pokhara, Nepal. The data was collected by using structured interview schedule and entered in MS excel with validated command and analyzed with SPSS version 16.

**Results:** In the study, out of 196 postdates pregnancies, 30.6 % of the mothers had undergone caesarean section 3.06 had an instrumental delivery and 1.5% had traumatic delivery. Further 5.61 % of the mothers had postpartum hemorrhage. A total 3.8 % of the neonates were admitted to the NICU and 1.5 % of the neonates were resuscitated.

**Conclusion:** The study concluded that postdates pregnancy was associated with perinatal complications like postpartum hemorrhage (PPH), an increase in incidence of caesarean section and admission of neonates to NICU. Careful advice and monitoring can alleviate maternal and fetal untoward complications.

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**Keywords:** *Postdates pregnancy, Maternal and fetal outcomes*

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**INTRODUCTION**

Based on a regular 28 day cycle, counting from the last menstrual period, the estimated date of delivery is 280 days or 40 weeks of gestation. When pregnancy exceeds the date of delivery it is called postdates pregnancy.<sup>1</sup> The reported incidence of postdates pregnancy ranges from 3 to 17%.<sup>2</sup> Some risk with post term pregnancy are like parity, maternal age, past history of post term pregnancy, genetics and obesity.<sup>3</sup> It has been reported that in a pregnancy that goes beyond 40 weeks, there is an increased risk of oligohydramnios, meconium stained amniotic fluid, macrosomia and fetal post maturity syndrome.<sup>4</sup> Furthermore, postdated infants have lower Apgar scores and meconium aspiration and are often admitted to NICU. As the pregnancy goes beyond estimated date there is increase in risk of severe perineal injury related to macrosomia, labor dystocia, increase in rate of cesarean delivery and postpartum haemorrhage.<sup>5</sup>

There is higher perinatal morbidity in postdates infants which suggests that special attention should be given to the postdated pregnancies. When there is timely onset of labor it leads to healthy maternal and fetal outcome. Despite of the fact that the consequence of postdates pregnancy is not good in terms of maternal and fetal health, pregnancy beyond 40 weeks have always been underestimated.

However emerging evidence demonstrates that the incidence of complications increases after 40 weeks of gestation. It jeopardizes the health of the mother as well as the fetus. So, the purpose of the study was to find out maternal and fetal outcomes in postdates pregnancies.

**METHODS**

A hospital based cross sectional study was conducted at Manipal Teaching Hospital and Gandaki Medical College Pokhara, Nepal from August 2019 to January 2020. Both hospitals are tertiary level private hospitals. Postnatal mothers with postdates pregnancies who fulfilled the inclusion criteria were included in the study. The total sample size was 196. The inclusion criteria was pregnancy with more than 40 weeks of gestation, singleton pregnancy, cephalic presentation and those willing to participate in the study. Any associated complications during pregnancy were excluded in the study. Purposive sampling technique was used. A structured interview schedule was conducted to collect the data and respondents file was also used to complete the data wherever necessary. Before data

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collection, official written permission was obtained from the concerned authorities, i.e., Pokhara University and both the hospitals. Ethical approval was obtained from Institutional Review Committee of Pokhara University. Informed consent was obtained from all respondents. To ensure validity of tool, extensive literature review and consultation with experts was done. The tool was pretested among 10% of the total sample i.e. among 20 mothers with postdated pregnancy. After pre-testing, necessary modifications were made. The collected data were coded and entered in Microsoft Excel and was exported to SPSS version 16 for analysis. Descriptive statistics like mean, frequency and percentage were calculated.

## RESULTS

Table 1: Socio Demographic Information of Respondents  
n=196

Characteristics	Frequency	Percentage (%)
<b>Age (mean 25.21±4.56)</b>		
Less than or equal to mean	189	96.4
More than mean	7	3.6
<b>Religion</b>		
Hindu	153	78.1
Buddhist	27	13.7
Christian	15	7.7
Muslim o	1	0.5
<b>Ethnicity</b>		
Dalit	26	13.3
Janjati	82	41.8
Madhesi	7	3.6
Brahmin/Chhetri	76	38.8
Others	5	2.6
<b>Occupation of respondents</b>		
House work	100	51
Agriculture	42	21.4
Own business	17	8.7
Employment	30	15.3
Labor	2	1.0
Others	5	2.6
<b>Education of respondent</b>		
Up to primary	35	17.9
Secondary	61	31.1
Higher secondary	61	31.1
Bachelor and above	39	19.9

The data presented in table 1 reveals that the mean age of the mothers was 25.21 and most of the mothers were in the age group of less than or equal to the mean age. Most of the mothers (78.1%) were hindu. Nearly half of the mothers (41.8%) were janajati. Half of the mothers (51%) were housewives. Similarly, regarding the education of the respondents, 31.1% of the mothers had secondary and 31.1% had higher secondary education.

Table 2: Present Obstetrics History of Respondents

Characteristics	Frequency	Percentage (%)
n=196		
<b>Gravida</b>		
Primi	114	58.2
Multi	82	41.8
<b>Weeks of gestation</b>		
40 weeks 1 day -41 weeks	165	84.18
More than 41wks	31	15.82
<b>Mode of delivery</b>		
Vaginal delivery	136	69.4
Caesarean-section	60	30.6

More than half (58.2%) of the mothers were primi, 84.18% of the mothers were in 40 weeks 1 day to 41 weeks of gestation, and there were 30.6 % of cases of cesarean section, whereas the remaining 69.4% of the mothers had normal vaginal delivery. (Table no 2)

Table 3: Indications for caesarean section.

Indications	Frequency	Percentage (%)
n=60		
Fetal distress	32	53.3
Nonprogress of labor	8	13.3
Cephalopelvic disproportion (CPD)	6	10
Severe oligohydramnios	7	11.6
Failure of induction	7	11.6

Table 3 shows that indications for caesarean section were fetal distress in 53.3% of the cases, non-progress of labor in 13.3%, Cephalopelvic disproportion in 10% cases, severe oligohydramnios in 11.6 % of the cases, and failure of induction in 11.6 % of the cases.

Table 4: Maternal outcomes of Postdates pregnancies  
n =196

Maternal outcomes	Frequency Percentage	
	(f)	(%)
1. Maternal complications	<b>46</b>	<b>23.46</b>
Oligohydramnios	24	12.2
Instrumental delivery	6	3.06
Perineal tear (third degree)	3	1.5
Postpartum hemorrhage	11	5.61
Urinary complications	2	1
2. No maternal complications	150	76.53

Table 4 shows that 12.2% of the mothers had oligohydramnios, 3.06% had instrumental delivery, 1.5% of respondents had perineal tears, 5.61% had postpartum hemorrhage, and 1% had urinary complications.

Table 5: Fetal outcomes of Postdates pregnancy  
n =196

Fetal outcomes	Frequency Percentage (%)	
<b>1. Fetal complications</b>	<b>36</b>	<b>18.36</b>
Macrosomia	3	1.5
Resuscitation use	3	1.5
Meconium Aspiration Syndrome	3	1.5
Admission to NICU	27	13.8
<b>2. No fetal complications</b>	<b>160</b>	<b>81.6</b>

Table 5 shows that in 18.36 % of the fetuses complications were seen, out of which 1.5% of the neonates were macrosomic, 1.5% of the babies had been resuscitated, 1.5 % had meconium aspiration syndrome and 13.8 % of neonates were admitted to NICU.

Table 6: Association of week of gestation with postpartum haemorrhage (PPH).

Characteristics	PPH		n=196	$\chi^2$	Df	P value
	Yes	No				
<b>Week of gestation</b>						
Less than or equals to 41 week of gestation	6	162	168	9.24	1	0.02*
More than 41 weeks of gestation	5	23	28			

(\*-Significant)

Table 6 revealed that there is significant association of obstetrical factor ie week of gestation with postpartum haemorrhage ( $\chi^2= 9.24$ , df=1, p value=.02\*).

Table 7. Association of week of gestation with caesarean section

Characteristics	Caesarean section		n=196	$\chi^2$	Df	P value
	Yes	No				
<b>Week of gestation</b>						
Less than or equals to 41 week of gestation	46	119	165	3.676	1	0.05
More than 41 weeks of gestation	14	17	31			

(\*-Significant)

Table 7 shows that there is significant association of week of gestation with the caesarean section ( $\chi^2=3.676$ , df=1, p value=0.05#\*).

Table 8: Association of week of gestation with admission of neonates to NICU.

Characteristics	NICU admission		n=196	$\chi^2$	Df	P value
	Yes	No				
<b>Week of gestation</b>						
Less than or equals to 41 week of gestation	18	147	165	7.216	1	0.007*
More than 41 weeks of gestation	9	22	31			

(\*-Significant)

Table 8 shows that there is significant association of week of gestation with admission of neonates to NICU ( $\chi^2=7.216$ , df=1, p value=0.007\*).

## DISCUSSION

The present study was conducted to find out maternal and fetal outcomes in postdates pregnancies. A total of 196 mothers with uncomplicated postdate pregnancies were included in the study. In this study, more than half of the mothers (58.2%) were primigravida, whereas 41.8 % were multigravida, which is similar to the findings of the study done at Jawaharlal Nehru Medical College, Sawangi, which showed that more than half (62%) were primigravida, whereas remaining 48% were multigravida.<sup>6</sup>

In this study, majority of the mothers (84.18%) were between 40 weeks to 41 weeks of gestation. Similarly, a study done in Lucknow, India also showed that the maximum (81%) was in 40 weeks to 41 weeks of gestation.<sup>3</sup> Another study done in Nagpur, India showed that majority of the mothers (69.8%) were also in 40 -41 weeks of gestation.<sup>8</sup> In contrast to the study's finding, a study conducted in Ahmedabad, India, revealed that more than half of the mothers 54.76 % were more than 41 weeks of gestation.<sup>5</sup>

In this study, maximum cases (69.4%) delivered normally, whereas caesarean section were performed in 30.6% cases. Similarly, a study done in Lucknow, India found that majority patients (53.7%) underwent spontaneous vaginal delivery, while and 37% patients required caesarean section as mode of delivery.<sup>3</sup> Another study done in Karnataka, India showed that 32% had undergone caesarean section.<sup>9</sup> Similar to the findings, a study done in Uttar Pradesh, India also showed that 42.30% had caesarean section while remaining 57.7% had normal vaginal delivery.<sup>8</sup>

In the present study, indications for caesarean section was fetal distress in 53.3% mothers, non- progress of labor in 13.3 % cases, cephalopelvic disproportion in 10% cases, severe oligohydramnios in 11.6% cases and failure of induction in 11.6% mothers. The indications of caesarean section in the study is similar with a study done in Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow, where indication for caesarean section was meconium stained liquor with fetal distress in (26%) cases, failure of induction in (21%) cases , cephalo-pelvic disproportion in (16%) cases, severe oligohydramnios in (19%) and non-progress of labor in (15%) cases.<sup>3</sup>

Another study done in Jammu resulted that indication for caesarean section was failure of induction in 33.3% cases, fetal distress in 19.3% cases, non-progress of labor in 14.2% of cases cephalopelvic disproportion in 9.5% cases.<sup>10</sup>

Nearly similar findings were noted in a study done in Wardha India which showed that the indication for caesarean section were fetal distress in 23.53% cases, failure of induction in 20.59% cases, cephalopelvic disproportion in 17.65% cases, non-progress of labor in 14.71% of cases.<sup>6</sup>

The study revealed that 12.2% of the mothers had oligohydramnios which means as pregnancy goes beyond 40 weeks it needs frequent amniotic fluid index monitoring. The finding of the study is similar with a study done in Jawaharlal Nehru Medical College, Sawangi which showed 17 % of the mothers had oligohydromnios.<sup>4</sup>

In this study instrumental delivery was performed in 3.06% of the mothers. Similarly in a study done in Sola Civil Hospital, India resulted that 2.35 % of the mothers had instrumental delivery.<sup>11</sup> Another study done in Vani vilas Hospital, Bangalore resulted where 9% had instrumental delivery.<sup>12</sup>

Similarly, the study resulted that 5.61% of the mothers had postpartum hemorrhage and 1.5 % of the mothers had perineal tear which is similar to the study which was

carried out in Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow where postpartum hemorrhage (PPH) was seen in 6% of cases and 5% of the mothers had perineal tear.<sup>3</sup>

Regarding the fetal outcomes, 13.8% of the neonates were admitted to NICU and 1.5% of the neonates had macrosomia. It is consistent with the study which found that 15.38% of neonates were admitted to NICU and 3.84% infants were having >4 kg birth weight.<sup>8</sup> Similar results were found in study which was done in Indira Gandhi Institute of Medical Sciences, Patna which showed that out of 100 postdates pregnancies, 11% of neonates had macrosomia whereas 25% of neonates were admitted to NICU.<sup>13</sup> In the present study, no perinatal mortality was found. In contrast to the finding of the study, a study which was done in Nagpur, India resulted that perinatal mortality rate was 0.04% with 1 neonatal death and two still birth as the mother had delayed visiting the hospital with per vaginal leaking, thick meconium-stained liquor and non-reassuring fetal heart rate despite the suggestion for early confinement.<sup>14</sup>

A review concluded that perinatal death with a policy of labor induction at or beyond 37 weeks can reduce perinatal deaths compared with expectant management. Caesarean rates can also be reduced without increasing rates of operative vaginal births and there can be fewer NICU admissions with a policy of induction. It was also suggested that women should be counseled properly to make an informed choice between scheduled induction for a late-term pregnancy and expectant management.<sup>15</sup>

The study revealed that week of gestation was significantly associated with adverse maternal and fetal outcomes like postpartum hemorrhage, caesarean section and admission of neonates to NICU. Similarly a study done in western Nepal also reveals that adverse maternal and fetal outcomes are associated with week of gestation.<sup>16</sup> The findings of the study showed that postdates pregnancies require early detection, effective and proper planning management to reduce maternal and neonatal morbidity.

## CONCLUSION

Postdate pregnancy increases the risk towards mother, fetus and neonates. Thus, it adds the maternal and perinatal morbidity. The rate of caesarean section was also high among postnatal mothers with postdates pregnancy. Similarly, oligohydramnios, postpartum hemorrhage, traumatic delivery were complications among mothers. Increased NICU admissions and macrosomia are some few complications seen among fetuses of postdated mothers.

The adverse outcome can be reduced by proper counselling during antenatal checkup and follow up during pregnancy, proper monitoring during labor and early intervention.

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