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Study on Maternal and Foetal Outcome in Post-Dated Pregnancy in a Tertiary Care Hospital of Uttarakhand Region

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ABSTRACT

To study maternal and foetal outcome, complications in post- dated pregnancy and compare them with term pregnancy. This hospital-based prospective observational study included 347 pregnant women (159-post-dated, 188-term pregnancy) aged 18- 35 years for a period of 1.5 years in Department of Obstetrics and Gynecology, Dr. Susheela Tiwari Hospital, Government Medical College, Haldwani. Maternal, foetal outcome and complications were analyzed and compared with term pregnancy. Post- dated pregnancy had significantly highly proportion of induced labour (52.2%), caesarean section (42.8%), non-reassuring non-stress test (22.6%). Maternal complications were slightly lower in post-dated pregnancy (6.9%) although not significant which included perineal (5%), retention of urine (1.9%). Meconium-stained liquor, NICU admissions were significantly higher (14.5%), APGAR score significantly more abnormal (18.2%), low birth weight significantly lower (0.6%) in post- dated pregnancy. Foetal complications were significantly higher in post- dated pregnancy (23.3%) which included birth asphyxia (4.4%), respiratory distress (15.1%), septicaemia (1.3%), shoulder dystocia (0.6%), HIE (1.3%), still birth (0.6%). The study demonstrated that post-dated pregnancy had higher proportion of adverse maternal and foetal outcome as well as complications in most of parameters as compared to term pregnancy. Therefore, proper monitoring and timely interventions are required to avert adverse outcomes and complications.

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Key Words
Maternal, foetal, post-dated, pregnancy, uttarakhand

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INTRODUCTION

"Post term" or "Prolonged pregnancy" are the preferred expressions for extended pregnancies and the term"postdates", which implies pregnancy beyond expected date of delivery probably should be abandoned[1]. The definition of prolonged pregnancy according to international guidelines is 42 completed weeks or more than that from the first date of last menstrual period. Although 42 completed weeks is used as cut off it is not an absolute threshold[2-4]. In Indian population fetus mature earlier 1week than the western population and the risk of still birth began to rise 1 week earlier. So as per this evidence in our population it is necessary to apply postdate terminology to 41 completed week's itself[5]. Most cases of postdated pregnancy is due toin accurate calculation of EDD[6]. Risk factors for postdated pregnancy includes previous history of postdated pregnancy[7], adrenal hypoplasia[8], defect in placental sulphatase activity etc[9]. Neonatal academia and meconium aspiration syndrome increases beyond 40 weeks of pregnancy[10]. Postdated pregnancy increase in labor dystocia (9-12 vs 2-7% at term), an increase in severe perineal injury (3rd and 4th degree perineal lacerations) and a doubling in the rate of cesarean delivery (14 vs 7% at term)[11-13]. there is increase in maternal complication beyond 40 weeks of gestation[14]. Therefore, this study was planned to study maternal and foetal outcome, complications in post-dated pregnancy and compare them with term pregnancy.

MATERIALS AND METHODS

This was a hospital based prospective observational study conducted for a period of 1.5 years in Department of Obstetrics and Gynecology, Dr Susheela Tiwari Hospital, Government Medical College, Haldwani. After an informed and written consent, total 347 pregnant women who fulfilled inclusion criteria were selected. All pregnant female with >40 weeks gestationaged between 18-35 years, with control group–term patients (37to <40 weeks) with regular men strualcycle and known LMPor with 1st trime sterscan, singleton pregnancy, post dated pregnancy with vertex presentation were included whereas pregnancy with any associated complications such a sprevious caesarean sections, An tepartumhaemorrhage (APH), Premature rupture of membranes, fetal congenitalanomalies, postdated pregnancy with medical condition like diabetes, chronic hypertension, chroni crenal disease, maternal heart disease, pregnancy induced hypertension and Multip legislation, not willing to participate in the study were excluded. First, the gestational age estimation was done by dating scan. The patients were categorized as low risk and high risk cases. High risk cases were excluded. In low risk cases admission CTG, USG parameters and biophysical profile was done. If everything was normal the patient was included for expectant management. If any of non-reassuring pattern of NST, Oligohydramnios, IUGR, noted the decision for delivering the fetus was immediate. If all parameters were normal, then the patients in this study was planned by following ways. The patients with spontaneous onset of pain in term pregnancy were also analyzed with 37 completed weeks. For post term pregnancy the patients included >40 weeks but <42 weeks. Unbooked cases with spontaneous onset of pain >40 weeks were also analyzed. Expectant Management was done until 40w+5 days. Wait for spontaneous onset of labor until 40w+5 days was done. Antenatal fetal surveillance was done by using daily NST, and by modified biophysical profile, daily fetal kick count. Elective induction of labor was done at 40w+5days. Induction ability was assessed by bishops pelvic scores at 40w+5 days of gestation. (An assessment of the cervix before labour). A score ³8 was considered favorable for induction whereas score £6 was considered unfavorable. If the bishop score was unfavorable improving pre labour bishop score was done by using ripening agent prostaglandin E2 gel applied intravaginal. If the patient had favorable bishops score labor acceleration was done by using syntocin drip. Amniotomy was done for all cases. Intrapartum monitoring was done. Maternal, foetal outcome and complications were analyzed.

The study was approved by Institutional Ethic Committee. Informed written consent was obtained from each participant. Nature and consequence of study was explained to them. Strict privacy and confidentiality was assured. Data was entered and analyzed using SPSS 20.0 trial version. For descriptive, frequency and percentages were calculated whereas for testing association chi square test and Fisher Exact test were used. $p<0.05$ was taken as significant.

RESULTS AND DISCUSSIONS

Post-dated pregnancy was higher in age group <20 years (64.1%) as compared to term pregnancy in <20 years (35.9%) whereas it was lower in age group 21-25 years (46.1%), 26-30 years (44.6%) and >30 years (27.8%) as compared to term pregnancy in age group 21-25 years (53.9%), 26-30 years (55.4%) and >30 years (72.2%) and the association of type of pregnancy with age was statistically significant. Term pregnancy had significantly higher proportion of adequate liquor (60.3%) as compared to post-dated pregnancy (39.7%). (Table 1). Post-dated pregnancy had significantly highly proportion of induced labour (52.2%) as compared to term pregnancy (29.3%). The proportion of caesarean section was higher in post-dated pregnancy (42.8%) than term pregnancy (14.9) whereas the proportion of

normal vaginal delivery was higher in term delivery (85.1%) than post- dated pregnancy (55.3%) and the association was statistically significant. Non- stress test was significantly more reassuring in term pregnancy (91%) than post- dated pregnancy (77.4%). Maternal complication was slightly higher in term pregnancy (9%) as compared to post- dated pregnancy (6.9%) although not significant. (Table 2).

Perineal tear occurred in 5% post-dated pregnancy and 1.6% term pregnancy. Atonic PPH occurred in 4.3% term pregnancy. Retention of urine occurred in 1.9% post- dated pregnancy. Manual removal of placenta was done in 1.6% term pregnancy. Cervical tear, angle extension, vulval haematoma each occurred in 0.5% term pregnancy (Fig. 1). Meconium-stained liquor was significantly higher in post-dated pregnancy (14.5%) than term pregnancy (4.3%). APGAR score significantly more abnormal in post-dated pregnancy (18.2%) than term pregnancy (1.1%). Low birth weight was significantly higher in term pregnancy (13.8%) than post- dated pregnancy (0.6%). NICU admissions were significantly higher in post- dated pregnancy (22.6%) than term pregnancy (3.2%). Foetal complications were significantly higher in post-dated pregnancy (23.3%) than term pregnancy (3.7%) (Table 3). Foetal complications of post-dated pregnancy were birth asphyxia (4.4%), respiratory distress (15.1%), septicaemia (1.3%), shoulder dystocia (0.6%), HIE (1.3%), still birth (0.6%) whereas foetal complications of term pregnancy were %), respiratory distress (1.2%), septicaemia (0.5%), shoulder dystocia (0.5%), TGA (0.5%), duodenal atresia (0.5%), IUD (0.5%) (Fig. 2).

61.1% had full term vaginal delivery whereas 34% cases underwent LSCS and 4.95% cases had instrumental delivery, induction was done in 21% postdated pregnancy[15]. Induction was done in 34%, caesarean section in 22.0% postdated pregnancy[16]. Sixty eight percent underwent spontaneous vaginal delivery, 17% patients required instrumental delivery and 14% patient required primary caesarean section in postdated pregnancy[17]. 53.7% underwent spontaneous vaginal delivery, 9.5% patients required instrumental delivery and 37% patients required caesarean section as mode of delivery in postdated pregnancy[18]. LSCS rate was done in 56.50% postdated pregnancy[19]. 73.5% cases delivered vaginally, and 26.5% cases underwent caesarean section, induction was done in 13% postdated pregnancy[20]. The caesarean section rate was 16.7%[21], 32.14%[22] in postdated pregnancy. 34% were caesarean delivery, 64% were full termvaginal delivery, 2% instrumental deliveryin postdated pregnancy[23]. Caesarean section was 36% in the postdated pregnancy, 16% in term pregnancy, instrumental delivery was 11.2% in the postdated pregnancy, 3.2% in term pregnancy whereas vaginal delivery was 80.8% in term pregnancy, 52.8% in the postdated pregnancy[23]. 87% were cesarean delivery, 13% were normal deliveryin postdated pregnancy[25]. 68% cases underwent caesarean section, the rate of induction of labour was 18% in postdated pregnancy[26]. 22% were cesarean delivery, 59%were normal vaginal delivery, 19% instrumental deliveryin postdated pregnancy[27]. Caesarean section was 32%in postdated pregnancy[28]. 62% were caesarean delivery, 38% were full termvaginal deliveryin postdated pregnancy[29]. LSCS was 27.5% in the postdated pregnancy, 13.33% in term pregnancy, instrumental delivery was 10.38% in the postdated pregnancy, 3.33% in term pregnancy where as normal vaginal delivery was 85% in term pregnancy, 60.83% in the postdated pregnancy[30].

Maternal morbidity was found in 18.75% of cases in the form of PPH, wound infection and perineal tearin postdated pregnancy[15]. Maternal morbidities in the form of perineal tear, PPH were noted in postdated pregnancy[20]. Rate of PPH was 5.95% in postdated pregnancy[22]. Maternal complications included oligohydramnios (17%), perineal tear (4%), atonic PPH (3%) shoulder dystocia (5%) in postdated pregnancy[23]. Maternal morbidities including PPH, sepsis, prolonged labour were higher in postdated pregnancy (33.6%) as compared to term pregnancy (13.6%) in postdated pregnancy[24]. Maternal complications were present in

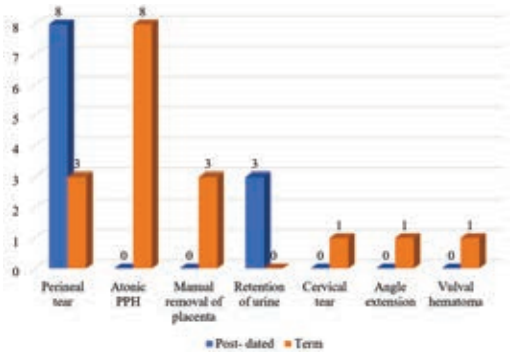

Fig. 1: Comparison of maternal complications in post-dated and term pregnancy

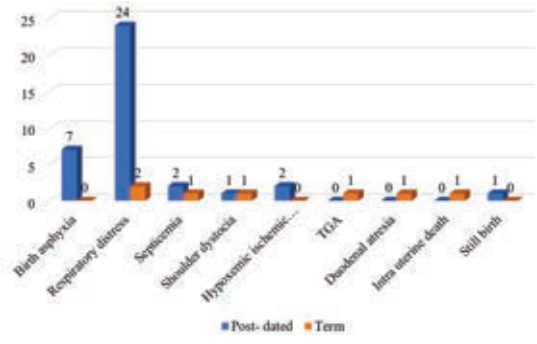

Fig. 2: Comparison of foetal complications in post-dated and term pregnancy

Table 1: Characteristics of study population (n=347)

Characteristics	Post-dated pregnancy (n=159)	Term pregnancy (n=188)	p-value
Age			
<20 years	25 (64.1)	14 (35.9)	0.018
21-25 years	83 (46.1)	97 (53.9)	
26-30 years	41 (44.6)	51 (55.4)	
>30 years	10 (27.8)	26 (72.2)	
Liquor status (AFI)			
Adequate	120 (39.7)	182 (60.3)	<0.0001
Inadequate	39 (86.7)	6 (13.3)	

Table 2: Comparison of maternal outcome between post-dated and term pregnancy (n=347)

Maternal outcome	Post-dated pregnancy (n=159)	Term pregnancy (n=188)	p-value
Augmentation (Spontaneous/ induced)			
Spontaneous	76 (47.8)	133 (70.7)	<0.0001
Induced	83 (52.2)	55 (29.3)	
Mode of delivery			
Vaginal	88 (55.3)	160 (85.1)	<0.0001
Assisted/ forceps	3 (1.9)	0 (0)	
Caesarean	68 (42.8)	28 (14.9)	
Non-stress test (NST)			
Non- reassuring			
	36 (22.6)	17 (9.0)	0.0005
Reassuring			
	123 (77.4)	171 (91.0)	
Maternal complications			
No	148 (93.1)	171 (91.0)	0.555
Yes	11 (6.9)	17 (9.0)	

Table 3: Comparison of foetal outcome between post-dated and term pregnancy (n=347)

Foetal outcome	Post-dated pregnancy (n=159)	Term pregnancy (n=188)	p-value
Liquor			
Clear	136 (85.5)	180 (95.7)	0.001
Meconium stained	23 (14.5)	8 (4.3)	
APGAR			
Normal	130 (81.8)	186 (98.9)	<0.0001
Abnormal	29 (18.2)	2 (1.1)	
Birth weight			
<2.5 kg	1 (0.6)	26 (13.8)	<0.0001
≥2.5 kg	158 (99.4)	162 (86.2)	
NICU admissions			
No	123 (77.4)	182 (96.8)	<0.0001
Yes	36 (22.6)	6 (3.2)	
Foetal complications			
No	122 (76.7)	181 (96.3)	<0.0001
Yes	37 (23.3)	7 (3.7)	

14% cases. Postpartum hemorrhage was found in 6% cases, perineal tear was present in 5% and cervical tear was found in 2% cases and shoulder dystocia was found in 1% case in postdated pregnancy[28]. Maternal complications were PPH (6%), cervical tear (5%), perinatal tear (1%), shoulder dystocia (1%).29Maternal complications were present in 25.8% of postdated pregnancy which includes PPH (16.67%), sepsis (9.17%) and 10%in term pregnancy PPH (5.83%), sepsis (4.17%)[30].

Perinatal morbidities like NICU admission, Meconium aspiration syndrome, Asphyxia or low Apgar score were found in 31.25% of cases, 4.2% IUD were reported in postdated pregnancy[15]. Foetal complications including Resuscitation (25.3%), Birth asphyxia (1.3%), Meconium aspiration syndrome (4%), Post maturity signs (12.7%), Birth injury (3.3%) and NICU admission (26.7%), low birth weight (2.7%) were observed in postdated pregnancy.16Foetal complications includes fetal distress (9%), meconium aspiration syndrome (7%), IUGR (1%), NICU admissions (17%) in postdated pregnancy[23]. 17.6% of infants in the postdated pregnancy had asphyxia as compared to only 8% in term pregnancy. 19.2% infants of postdated pregnancy required NICU admission as compared to 8% in term pregnancy. 2% was the percentage of intrauterine death in postdated pregnancy as compared to none in term pregnancy[24]. NICU admission were observed in 6.28%in postdated pregnancy[25]. Meconium Aspiration Syndrome was seen in 19%, NICU admission were observed in 5%, 27.5% had low birth weightin postdated pregnancy[26]. 20% had meconium stained liquor, 6% had low birth weight in postdated pregnancy.27Fetal complications were found in 23% cases. Meconium aspiration syndrome was found in 7% cases, respiratory distress syndrome was found in 8% cases, macrosomia was present in 4% cases and hyper bilirubinemia was found in 2% cases, NICU admission rate was 12.5% in postdated pregnancy.28Meconium aspiration syndrome was found in 45%,asphyxia (40%),jaundice (4%)[29]. 12.5% of infants had asphyxia, 14.67% admitted to the NICU, 1.67% intrauterine deaths were reported in postdated pregnancywhereas 6.67% infants had asphyxia, 10% admitted to the NICU in term pregnancy[30].

CONCLUSION

Postdated pregnancies should be timely diagnosed. Properly planned and effective management required. Maternal and foetal outcome, complications is more in postdated pregnancy careful intrapartum monitoring should be done. With monitoring we can be able to prevent the intrauterine fetal death. Right time intervention will prevent remote complication of post term fetus. However, it is essential that each case to be individually assessed.

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