Original Article

Maternal and Fetal Outcome between Dated and Post-dated Pregnancy: A Comparative Study Conducted in a Tertiary Care Hospital

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Abstract

This prospective observational comparative study was conducted in department of Obstetrics and Gynaecology (OBGyn) of Shaheed Suhrawardy Medical College Hospital (ShSMCH), Dhaka. It was carried out from April 2019 to September 2019. The objectives was to compare the feto-maternal outcome of postdated pregnancy ($40+^{1}$- $41+^{6}$ weeks) with pregnancy at term(37-40 weeks). Pregnant women admitted in ShSMCH with or without labour pain were considered as study population. Following ethical clearance from the local ethical committee and written informed consent, 59 cases of post-dated pregnancy (case) and 59 cases of term pregnancy (control) were included inthis study. Cases and control were selected by random sampling method according to inclusion and exclusion criteria. Inclusion criteria were: 1) Patients who have excellent EDD(dated by early ultrasonogram) , 2) Patients having regular menstrual cycle prior to present pregnancy and can remember exact LMP, 3) Postdated pregnancy as case and pregnancy at term as control. Exclusion criteria were: 1) Patients with eclampsia, systemic hypertension, heart disease, diabetes mellitus and renal disease, 2) Patients with multiple gestation and any congenital anomaly, 3) Pregnancy occurred during lactational amenorrhoea, 4) Pregnancy with veneral disease, 5) pregnancy with blood group incompatibility. Data were collected with a pre-designed structured questionnaire. A full assessment were done by history[age, occupation, menstrual and obstetric history, medical, surgical and family history, antenatal care(ANC)], physical examination (general, abdominal and vaginal) and ultrasonogram (USG) to assess gestational age and liquor volume. After proper counselling, induction of labour given to patients without labour pain and fetal distress. Mode of delivery, post-delivery maternal and fetal outcome and complication were recorded.This study showed that maximum number of patients in term pregnancy (control) belonged to age group (21-30 years) [control 71.2%, case 62.7%] and in post-dated pregnancy (case) belonged to >30 years [control 15.5%, case 23.7%]. In both groups, maximum number of women were housewives, control 48(81.4%), case 46(78%) and service-holder 11(18.6%) in control, 13 (22%) in case. In control group 36 (61%) were primi-gravida and 23 (39%) were multi-gravida. In case group 29(49.2%) were primi-gravida, 30(50.8%) multi-gravida. Family history of post-dated pregnancy were present in 14(23.7%) of control group and 13(22%) of case group. Most of the women of both control (93.2%) and case (89.8%) received regular ANC. Large fetus were seen in 6(10.2%) of control and 9(15.3%) of case group. Vertex was common presenting feature in both control (94.9%) and case (88.1%). Liquor volume was adequate in maximum number of women of both control (69.5%) and case (62.7%) group. Uterine irritability was present in 16(27.1%) of control and 17 (28.8%) of case group. Associated complication, such as CPD and elderly primi were present in 10 (16.9%) of control and 9 (15.3%) of case group. Induction of labour was required in 33(55.9%)of control and 41 (69.5%) of case group. Normal vaginal delivery was achieved in 41 (69.5%) of control and in 33 (55.9%) of case group women. LSCS required in 18 (30.5%) of control and 25 (42.4%) of case group women. Cause of LSCS is fetal distressin (54.5%) of control and (42.4%) of case group. Post-operative complication were more in case (16.9%), versus (3.4%) in control. Fetal complication were more in case group (22%), versus control (6.8%) regarding birth asphyxia, RDS, neonatal jaundice, neonatal septicemia, meconium aspiration syndrome, macrosomia and neonatal death. So this study showed that maternal and fetal perinatal morbidiy were quite high in post-dated pregnancy. There is scope for further improvement of clinical care practices of post-dated pregnant womenwith acceptable maternal and fetal outcome.

Key Words:
Post-dated pregnancy,
Fetomaternal outcome.

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Introduction:

The length of a normal pregnancy is 40 weeks from the first day of the last menstrual period. Post-dated pregnancy is that extends beyond 40 weeks (any time past the estimated due date). Post-term pregnancy is that extends beyond 42 weeks.[1]

The quoted incidence beyond 40 weeks occurs 1 in every 10 pregnancy.[2] About 11% of all pregnancies end after 42 weeks. But the incidence of post-dated pregnancy is reduced when the diagnosis is made accurately by the use of USG rather than LMP alone.[3] Correct diagnosis of post-dated pregnancy is very important as the outcome of induction of post-dated pregnancy is significantly worse in women than with certain dates.[4] The factors that are related to postmaturity are wrong dates, hereditary, elderly multiparity, previous prolonged pregnancy, anencephaly, sulphatase deficiency in placenta.[5] Whatever may be the cause, post-dated pregnancy is associated with higher frequency of obstetrical complications and perinatal morbidity.[6]In post-dated pregnancy perinatal mortality at 39 weeks 6/1000 live-birth(LB) at 40 weeks, 7/1000 beyond 42 weeks and 10/100LB at 43 weeks.[7]

Post-dated pregnancy is associated with many dangers,such as placental insuffiency, fetal hypoxia, intrauterine death and other complications associated with post-maturity are brachial plexus injury, shoulder dystocia, maternal soft tissue injury due to difficult labour or increased operative delivery.[8] Most obstetrician in developed countriesfavour a conservative attitude (no induction) and propose checking the fetal health by clinical assessment, CTG and ultrasonography at intervals and then deliver the baby before any damage occurs.[9]Post-dated pregnancy is a cause of anxiety, distress and psychological upset for many women and their families. Proper diagnosis and proper management will reduce the rate of perinatal morbidity and mortality in post-dated pregnancy.[10]

The aim of this study was to compare the fetomaternal outcome of post-dated pregnancy with pregnancy in date.To understand the management of post-dated pregnancy, outcome and related effects of it, the need for a study was felt. It is expected that this study will be able to formulate a clinical policy regarding the management of post-dated pregnancy in future**.**

Methods:

This prospective observational comparative study was conducted in department of OBG in ShSMCH, Dhaka, during the period from April 2019 to September 2019. Pregnant women admitted in department of OBG of ShSMCH with or without labour pain were considered as study population. Following ethical clearance from the local ethical committee and written informed consent, 59 cases of post-dated pregnancy (case) and 59 cases of term pregnancy (control) were included in this study. Cases and control were selected by random sampling method according to inclusion and exclusion criteria. Inclusion criteria were: 1) Patients who have excellent EDD, 2) Patients having regular menstrual cycle prior to present pregnancy and can remember exact LMP, 3) Postdated pregnancy ($40+^{1}$- $41+^{6}$ weeks) as case and pregnancy at term(37-40 weeks) as control. Exclusion criteria were: 1) Patients with eclampsia, systemic hypertension, heart disease, diabetes mellitus and renal disease, 2) Patients with multiple gestation and any congenital anomaly, 3) Pregnancy occurred during lactational amenorrhoea, 4) Pregnancy with veneral disease, 5) pregnancy with blood group incompatibility. Data were collected with a pre-designed structured questionnaire. A full assessment were done by history [age, occupation, menstrual and obstetric history, medical, surgical and family history, antenatal care(ANC)], physical examination (general, abdominal and vaginal) and ultrasonogram (USG) to assess gestational age and liquor volume. After proper counselling, induction of labour given to patients without labour pain and fetal distress. Mode of delivery, post-delivery maternal and fetal outcome and complication were recorded. Data were analyzed using SPSS (Statistical Package for Social Sciences) program, version 16.

Results:

Table I

Age distribution of the study subjects:

Age in years	Control (Gestatioal age:37-40 weeks) (n=59)		Case(Gestational age:41weeks&above) (n=59)		P value
	No	%	No	%	
d”20	8	13.6	8	13.6	
21-30	42	71.2	37	62.7	
>30	9	15.3	14	23.7	
Mean±SD	25.74±4.79		26.28±5.18		0.556

Table shows that maximum number of patients in term pregnancy (control) belonged to age group 21-30 years (control 71.2%, case 62.7%) and in postdated pregnancy (case) belonged to age group >30 years (control 15.5%,case 23.7%). Mean±SD age of control and case group were 25.74±4.79 and 26.28±5.18 years respectively. The difference was statistically not significant (p>0.05).

Table II

Occupation of the study subjects:

Occupation	Control(Gestatioal age: 37-40 weeks) (n=59)		Case(Gestational age: 41weeks &above) (n=59)		P value
	No	%	No	%	
Housewife	48	81.4	46	78.0	
Service	11	18.6	13	22.0	0.647

Table shows that in both control and case groups, maximum number of women were housewives.In control group 48(81.4%) and in case group 46(78%) were housewives and 11(18.6%) in control group and 13(22%) in case group were service holders. The difference was statistically not significant between two groups (p>0.05).

Table III

Gravidity of the study subjects:

Gravidity	Control (n=59)		Case (n=59)		P value
	No	%	No	%	
Primi	36	61.0	29	49.2	
Multi	23	39.0	30	50.8	
Mean±SD	1.47±o.66		1.65±0.75		0.107

Table shows that in control group, 36(61%) women were primigravida and 23(39%) multigravida. In case group 29(49.2%) were primigravida and 30(50.8%) multigravida (mean ±SD 1.65±0.75). The difference was not statistically significant betweentwo groups(p>0.05).

Table IV

Family history of postdated pregnancy:

Family history	Control (n=59)		Case(n=59)		P value
	No	%	No	%	
Yes	14	23.7	13	22.0	
No	45	76.3	46	78.0	0.827

Family history of postdated pregnancy were present in 14(23.7%) women of control and 13(22%) women of case group. The difference was statistically not significant between two groups (P>0.05).

Table V

History of antenatal care:

Antenatal care	Control (n=59)		Case(n=59)		P value
	No	%	No	%	
Regular	55	93.2	53	89.8	
Irregular/None	4	6.8	6	10.2	0.509

Table shows that most of the women of both control and case groups, received regular antenatal care (93.2% and 89.8%). The difference was statistically not significant (P>0.05).

Table VI

Fetal size and presenting part:

Fetal size	Control (n=59)		Case(n=59)		P value
	No	%	No	%	
Size					
Average	53	89.8	50	84.7	0.407
Large	6	10.2	9	15.3	
Presetation					
Cephalic	56	94.9	53	89.8	0.342
Breech	3	5.1	6	10.2	

Table shows, large fetus were seen 6(10.2%) in control and 9(15.3%)in case group. Vertex was common presenting feature in both control (94.9%) and case (88.1%) group. The difference was statistically not significant (P>0.05).

Table VII

Maternal features:

Features	Control (n=59)		Case(n=59)		P value
	No	%	No	%	
Liquor vol					
Adequate	48	81.3	41	69.5	
Scanty	11	18.7	18	30.5	0.562
UterineIrritability					
Present	16	27.1	17	28.8	0.837
Absent	43	72.9	42	71.2	
AssociatedComplications					
Present	8	13.5	19	32.2	0.745
Absent	51	86.5	40	67.8	
Complication					
CPD	6	46.1	2	22.2	0.580
Elderly Primi	7	53.9	7	77.8	

Liquor volume was adequate in maximum number of women of both control (69.5%) and case (62.7%) group of women. Uterine irritability was present in 16(27.1%) of control and 17(28.8%) of case group. Associated complications such as CPD and elderly primi were present in 10(16.9%) of control and 9(15.3%) of case group. The difference was statistically not significant between two groups (P>0.05).

Table VIII

Induction of labour:

Induction	Control (n=59)		Case (n=59)		P value
	No	%	No	%	
By Oxytocin/Prostaglandin	33	55.9	41	69.5	0.128
Not Required	26	44.1	18	30.5	

Table shows that induction of labour was required in 33(55.9%) of control and 41(69.5%) of case group. The difference was statistically not significant between two groups (p>0.05).

Table IX

Mode of delivery:

Delivery	Control (n=59)		Case (n=59)		P value
	No	%	No	%	
Vaginal	41	69.5	33	55.9	0.92
Instrumental	0	0.0	1	1.7	
Caesarean section (LSCS)	18	30.5	25	42.4	
Indication for LSCS					
Fetal distress	12	54.5	4	16.0	0.120
Breech presentation	2	9.1	0	0.0	
Failed induction	2	9.1	14	56.0	
UnfavorableCervix	1	4.5	1	4.0	
CPD	1	4.5	3	12.0	
History ofLSCS	0	0.0	3	12.0	

Table shows normal vaginal delivery was achieved in 41(69.5%) of control compared to 33(55.9%) of case group of women. LSCS was required in 18(30.5%) of control and 25(42.4%) of case group.In maximum number of women the cause of LSCS was fetal distress (54.5%) of control and (42.4%) of case. The difference was statistically not significant between two groups (P>0.05).

Table X

Post-delivery/ post-operative complication:

Complication	Control (n=59)		Case (n=59)		P value
	No	%	No	%	
Present	2	3.4	10	16.9	0.007
PPH	2	3.4	10	6.8	
Wound infection	0	0.0	3	5.1	
UTI	0	0.0	2	3.4	
Perineal tear	0	0.0	1	1.7	
Absent	57	96.6	49	83.1	

Table shows post-operative complication were more in case group than control group which was (16.9%) vs (3.4%) respectively. The difference was statistically not significant between two groups (P>0.05).

Table XI

Fetal outcome:

Fetal outcome	Control (n=59)		Case (n=59)		P value
	No	%	No	%	
Birth weight (kg)	(2.4-4)		(2.4-3.8)		
Mean±SD	3.02±0.35		3.04±0.33		0.134
Apgar scoreat 1 minute	(6-9)		(7-10)		
Mean±SD	7.64±0.62		7.80±0.68		1.22
Apgar scoreAt 5 minutes	(8-10)		(8-10)		
Mean±SD	9.84±0.50		9.91±0.40		2.252

Neonatal birth weight, 1 minute and 5 minute Apgar score did not show any significant variation between control and case group.

Table XII

Fetal complication

Complication	Control (n=59)		Case (n=59)		P value
	No	%	No	%	
Complication	4	5.8	13	22.0	0.005
Birth asphyxia	2	3.4	4	6.8	
RDS	1	1.7	2	3.4	
Neonatal Jaundice	0	0.0	1	1.7	
Neonatal Septicemia	0	0.0	2	3.4	
MeconiumAspirationsyndrome	1	1.7	2	3.4	
Neonatal Death	0	0.0	1	1.7	
Macrosomia	0	0.0	1	1.7	
No complication	55	93.2	46	78.0	

Fetal complication were more in case group than control group which was (22%) vs (6.8%) respectively. The difference was statistically significant between two groups (P<0.05).

Discussion

This prospective comparative study showed that postdated pregnancy was more common in age group 21-30 years (62.7%), followed by >30 years (23.7%) and d"20 years (13.6%). Different studies have shown different effect of age on postdated pregnancy. One study showed that (88%) women with postdated pregnancy were in age group 18-29 years.30 Another study reported that elderly were more prone to have postdated pregnancy.[6] A study by Sultana showed that (81%) postdated pregnancies were in age group 20-29 years.[11] Maternal age>35 years was shown to be a risk factor for postdatedpregnancy.[12]

Previous studies have shown that postdated pregnancy occur more commonly among women with sedentary work.[4,11] However the present study showed that housewives are prone to it.

Present study showed that primigravida were at lower risk of postdated pregnancy. Literature review showed that the risk of postdated pregnancy was more in elderly primigravida.[6] In one study of postdated pregnancy, (55.3%) were primi and (44.7%) multi.Sultana studyshowed that mean parity was lower in postdated pregnancy than term pregnancy group.[12]

Present study showed that family history is not a risk factor for postdated pregnancy. Where as a study carried out in Bangladesh showed that women with postdated pregnancy were at 2.5 times prone to have it in their previous pregnancies than term pregnancies.[12]

Regular ANC in the present study did not show any effect on reduction of postdated pregnancy. However, studies have shown that regular ANC may lower the risk of postdated pregnancies.[6,12]

Present study showed that average fetal head size were at lower risk of postdated pregnancy.study showed thatfetal headwith hard feel,predicts postdated pregnancy.[6,12,13]

Our study found that oligohydramnios was a risk factor for postdated pregnancy.Study reportedoligohydramnios as a marker of placental insufficiency.[6,12,13]

Uterine irritability was found more in postdated pregnancy[6,12] which is consistent with the present study.

Women with postdated pregnancy have increased risk of operative and abdominal deliveries as reported by different authors[12,14] which is consistent to our study.

previous study have shown that baby-weight were a bit higher in postdated pregnancy.[6,12] Whereas our study showed almost equal weight in term and postdated pregnancy.

studies have shown perinatal outcome is unfavorable regarding meconium-stained liquor, increased chance of birth asphyxia, low 1-minute and 5-minute Apgar score, increased rate of admission in neonatal ward, increased meconium aspiration syndrome.[13] Present study observed no such effect which is consistent with the study of Sultana.[12]

Conclusion

This study was undertaken in a tertiary care hospital in a small number of patients which does not reflect the actual scenario. Maternal and fetal complications which are found in this study are possible to reduce. But it needs needs further evaluation , identification of its cause and accurate measure. With increased awareness among the general population, improved obstetric care and availability of improved maternal and child care facilities, the probable risk factors could be substantially reduced. However to draw a definite conclusion, long-term study with larger sample size would be of value.

Conflict of Interest

Not reported

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