International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Chaudhari P et al. Int J Reprod Contracept Obstet Gynecol. 2024 May;13(5):1173-1178
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20241061

Original Research Article

The fetomaternal outcome in case of post-dated pregnancy at tertiary care center

Prachi Chaudhari*, Hafsa Vohra

Department of Obstetrics and Gynaecology, B J Medical College, Civil Hospital, Asarwa, Ahmedabad, Gujarat, India

Received: 27 February 2024
Revised: 05 April 2024
Accepted: 06 April 2024

***Correspondence:**
Dr. Prachi Chaudhari,
E-mail: prachichaudhari66@gmail.com

ABSTRACT

Background: Post-date pregnancy is a challenge for maternal and perinatal care and a leading cause of neonatal morbidity and mortality. The aim of the present study was to analyse the risk factors and feto-maternal outcome of pregnancies which goes beyond due date.
Method: It is a prospective study carried out during period from October 2021 to October 2022 in obstetrics and gynecology department of B. J. medical college and hospital, Ahmedabad. 100 cases of post-dated pregnancy out of 12,885 delivered cases were studied in this study.
Results: The present study was conducted in the hospital for risk factors leads to post-dated pregnancy and maternal and neonatal morbidity and mortality. Among the 12,885 deliveries, 990 were post-dated pregnancy and 100 cases studied in this study. In the present study, incidence of post-dated pregnancy 7.6%. Majority of women belonged to age group 21 to 25 years (66%). 68% of them delivered vaginally, 32% women required caesarean section, the most common indication being foetal distress, 57% of women were given induction by various means and 32% of them had successful vaginal delivery.19% babies had NICU admission with respiratory distress (7%) being the most common reason.
Conclusions: Post-dated pregnancy is high risk condition which is challenge to obstetrician and leads to maternal and neonatal complications. A better management is a pre-requisite to reduce the rate of perinatal mortality and morbidity in this group of patients. With regular antenatal check-up, the incidence of post-dated pregnancies can be decreased

Keywords: Post-dated pregnancy, Maternal outcome, Perinatal outcome

INTRODUCTION

The definition of post-date pregnancy as any pregnancy beyond the expected date of delivery. The American college of obstetrician and gynaecologists (ACOG) and world health organization (WHO) defined post term pregnancy as that lasts 42 weeks (294 days) or more from the first day of last menstrual period (LMP).[1,2] Prolongation of pregnancy complicate up to 10% of all pregnancies and carries increased risk to mother and foetus.[3,4] However, the actual variation is likely less, because the most frequent cause of a postdate pregnancy diagnosis is inaccurate dating.[5] But the incidence of post-dated pregnancy is decreasing trend now a days due to accurate estimation of gestational age and early dating scan.[6] There are risk factors for post-dated pregnancy, as most of the cases have unknown causes, only there are few modifiable risk factors identifiable. Some risk factors are associated with post-dated pregnancy like parity, maternal age, past history of post term pregnancy, genetics and obesity.[7,8] History of post-term pregnancy in past is most significant risk factor for prolonged pregnancy. Complications increases as pregnancy goes beyond due date. There is an increased risk of oligohydramnios, meconium-stained amniotic fluid, foetal post-maturity syndrome, macrosomia, rate of caesarean section, all of

which harm the baby and mother. Maternal risks include an increase in severe perineal injury related to macrosomia and operative vaginal delivery and an increase in the rate of caesarean delivery and postpartum haemorrhage.[9] The aim of present study was incidence, risk factors which leads to post-dated pregnancy, feto-maternal outcome of pregnancies which goes beyond due date.

Aims and objectives

Aim and objectives were to study the incidence of postdate pregnancy, to study the risk factors leading to post-date pregnancy, to study the maternal complications in postdate pregnancy and to study perinatal morbidity and mortality in postdate pregnancy.

METHODS

Total 100 cases out of 12,885 deliveries were prospectively evaluated for post-dated pregnancy and associated risk factors during period from October 2021 to October 2022 in obstetrics and gynecology department of B. J. medical college and hospital, Ahmedabad.

The maternal outcome is noted in terms of requirement of induction of labor for aiding in vaginal delivery (normal vaginal delivery, instrumental delivery), need for cesarean section, and maternal complication like PPH, perineal trauma and others.

The fetal outcome is noted in terms of intrapartum asphyxia, intrauterine fetal death, stillbirth, admission in neonatal ICU, 100 cases of post-dated pregnancy admitted to labor room/antenatal ward were selected randomly, in the study, subject selection by inclusion and exclusion criteria. A detailed history was taken including previous obstetrics history and having risk factors of post-dated pregnancy. General physical examination was done in every case. Obstetrics examination including per abdomen, per speculum and per vaginal examination. Routine investigations were done. Cases evaluated by doing admission NST, USG, and the biophysical profile. Induct ability is assessed by bishops pelvic scores. Induction of labour in present pregnancy (medical method, surgical method, combined method). Mode of delivery as per maternal and fetal wellbeing. Both obstetrical and fetal outcome is recorded and tabulated.

Data were entered into a computer database using Microsoft excel software. Results are presented as frequencies, percentage and descriptive statistics.

RESULTS

Table 1 shows that in the present study, the maximum number of patients that is 66% delivered in the age group of 21-25 years.

In the present study, 42% patients of post-date delivered primigravida, 33% patient were second gravida, 25% were multi gravida. Hence majority of patient in this study found from primi-gravida.

Table 1 shows that in present study, 48% of patients in this study were from urban areas compared to only 52% patients from rural areas. Post-term birth was more frequent in cases from rural areas.

In the present study, 70% cases were belongs to lower socioeconomic status.

As we can see from Table 1, 32% cases were booked and 68% cases were emergency. In booked cases there is proper antenatal check-up and foetal monitoring done and we can discuss management plans with patients as pregnancy progress well.

Table 1: Demographic distribution, (n=100).

Parameters	N	Percentage (%)
Maternal age (in years)		
<20	8	8
21-25	66	66
26-30	24	24
>30	2	2
Gravida status		
Primi-gravida	42	42
Second gravida	33	33
Multi gravida	25	25
Residence		
Urban	48	48
Rural	52	52
Booking status		
Booked	32	32
Emergency	68	68
Maternal BMI (kg/m^2)		
<18.5	10	10
18.5-24.9	22	22
25-29.9	36	36
>30	32	32

Table 2: Distribution according to past history of post-dated pregnancy, gestational age and AFI status, (n=100).

Parameters	N	Percentage (%)
Past H/O post-dated pregnancy		
Positive	20	20
Negative	38	38
Gestational age (in weeks)		
40-40 6 days	76	76
41-41 6 days	22	22
42->42	2	2
AFI status		
Adequate	45	45
Inadequate	55	55

In the present study, out of 58 patients, 20 patients had positive past history of post-dated pregnancy and rest 38

had negative history of post-dated pregnancy. Primi-gravidity and prior post-term pregnancies are the most common identifiable risk factors.[6,8]

In the current study, pregnancy in only 2% of cases extended beyond 42 weeks of gestation. These were the cases who were having very irregular antenatal visits.

Table 3: Distribution of patients according to bishop score, type of labour and mode of delivery, (n=100).

Parameters	N	Percentage (%)
Bishop score		
<5	33	33
5-8	38	38
>8	21	21
Type of delivery		
Spontaneous	43	43
Induced	57	57
Mode of delivery		
Vaginal delivery	68	68
Caesarean section	32	32

In the present study, 21.8% cases were undergoing caesarean section in view of induction failure which had bishop score of <5.

In this study, 43% cases delivered with spontaneous onset of labour and 57% cases were induced. Induction of labour is more likely to succeed when the cervix is favourable. bishop score used for favourability cervix.

In present study out of 100 patients delivered, 68% patients were delivered vaginally and 32% patients delivered by caesarean section. Majority of patient delivered vaginally and rest of patients delivered by LSCS.

Table 4: Distribution according to mode of delivery in spontaneous onset labour and induced labour.

Parameters	Spontaneous onset of labour	Induction of labour
Vaginal delivery	36%	32%
Caesarean section	7%	25%

In this study, out of 57% cases were induced, of these 32% cases delivered vaginally and 25% cases underwent LSCS. In the present study, out of 43% cases which were with spontaneous onset of labour, 36% cases delivered vaginally and 7% cases underwent LSCS.

In this study, incidence of c section is more in induction of labour group than spontaneous onset of labour group.

In the present study, perineal tear seen in 31 cases and cervical tear in 6 cases. In the present study, vulval hematoma seen with 2 cases, atonic PPH seen with 1 case and 8 cases leads to prolonged labour.

Table 5: Maternal complications, (n=100).

Maternal complications	N
Perineal tear	31
Cervical tear	6
Vulval hematoma	2
Atonic PPH	1
Prolonged labour	8

Table 6: Foetal complications, (n=100).

Foetal complications	N
Birth asphyxia	2
Respiratory distress	7
Sepsis	5
HIE	3
IUFD	3
Still birth (SB)	1
NICU admission	19
Macrosomia	8

In present study, still birth in 1 case and intra uterine foetal deaths were found in 3 cases, 71 new born were healthy new born without any complication. In the present study, 19% cases found to be admitted in NICU.

DISCUSSION

In the present study incidence of post-dated pregnancy is approximately 7.6%. The incidence like 5% and 7% were a study by Singh et al and Martin et al.[10,11] The prevalence varies depending on population characteristics and local management practices.

In the present study, 66% delivered in the age group of 21-25 years. In a study by Hemalatha et al, it was found that there is 68.3% post term birth in age group of 21-25 years followed by post term birth of 15.3% in age group of 26-30 years which was comparable to the present study.[12] Mean age of post-dated pregnancy also 21 years to 25 years.

In the study by Hemalatha et al, it was found that 51.2% cases seen in primi parity (42%) and least seen in multigravida cases which is comparable to the present study.[12]

In present study, 48% of patients in this study were from urban areas compared to only 52% patients from rural areas. Pregnant women in rural areas were more likely to have post-date birth than those in rural due to lack of knowledge, inaccuracy of LMP and lack of appropriate antenatal care. It was found that most of patients came from lower socio-economical class. Lack of awareness, lower education and conception at early age and Irregular antenatal visit lead to post-date pregnancy.

As we can see from Table 1, 32% cases were booked and 68% cases were emergency. In booked cases as pregnancy

goes beyond 40 weeks, watchful expectancy for foetal monitoring, AFI status, doppler study in case of oligohydramnios needs to be done. While in emergency cases they are those who do not take antenatal care properly or are lost to follow up cases of booked patient which end up in post-dated pregnancy.

In the present study out of total 100 cases of post term birth, 36% patients were with BMI of 25-29.9, 32% patients were with BMI of >30, 22% cases with BMI of 18.5-24.9, 10% cases with BMI of <18.5. Perhaps amongst all the factors which could influence the incidence of post-term pregnancy obesity is the one modifiable risk factor which could theoretically improve by dietary and exercise behavioural modifications before or during pregnancy.[13]

In the present study, out of 58 patients, 20 patients had positive past history of post-dated pregnancy and rest 38 had negative history of post-dated pregnancy.

After one post-term pregnancy, the risk of another such pregnancy in the subsequent birth is increased 2 to 3-fold.[14]

In the present study, it showed that 76% patient presented at 40 weeks-40 weeks 6 days, 22% patients at 41 weeks-41 weeks 6 days and only 2% patients were prolonged to 42 weeks. Confirmation of diagnosis of exact term of pregnancy is very important as many patients don't have regular menstrual history and LMP. Dating scan is much important for diagnosis of post-dated pregnancy.

In this study, Amniotic fluid index was noted at admission in 55 women was <5 cm (oligohydramnios). Adverse pregnancy outcome (e.g. non-reassuring foetal heart rate tracing, neonatal intensive care unit admission, low Apgar score) is more common when oligohydramnios is present. In the post date pregnancy, ultrasonography is important to ensure good foetal condition. Amniotic fluid reduces when pregnancy progresses beyond 40 weeks, more so when pregnancy extends beyond 42 weeks there are chances of developing oligohydramnios which might further hamper foetal well-being.

The bishop's score is used worldwide and numerous studies on cervical assessment have been performed. As in the present study, induction of labour (IOL) done in spite of unfavourable bishop score but taken for caesarean section in case of foetal distress. Poor bishop's score is associated with failure of induction and lesser chances of vaginal delivery. In this study, 33% cases had bishop's score of <5, 38% cases had score of 5-8 and 21% cases had score of >8, 21.8% cases were undergoing caesarean section in view of induction failure which had bishop score of <5. To decrease the risk of adverse outcome of prolonged pregnancy antenatal surveillance and IOL seems to be necessary. It is well known that success of IOL depends on favourability of cervix.[15] In patients with bishop's score <4, maximum underwent caesarean section in view of failure of induction. In the study done by Kandalgaonkar et al and Agarwal et al similar results were found where majority had bishop's score <4.[16,17]

In this study, 43% cases delivered with spontaneous onset of labour and 57% cases were induced. Induction of labour is more likely to succeed when the cervix is favourable. After clinical examination of patients, assessment of cervix by bishop score and counselling of patient and relatives about maternal and foetal complication, induction of labour or expectant management offered to patient.

In present study out of 100 patients delivered, 68% patients were delivered vaginally and 32% patients delivered by caesarean section. In the study by Anand et al it was found that 71.76% cases delivered vaginally and rest were caesarean section which is comparable to present study.[18] Majority of patient delivered vaginally and rest of patients delivered by LSCS. Mode of delivery is depending upon various maternal and foetal factor.

Prolonged pregnancy is known to be associated with higher neonatal and maternal morbidity and mortality. In this study, out of 57% cases were induced, of these 32% cases delivered vaginally and 25% cases underwent LSCS. Out of 43% cases which were with spontaneous onset of labour, 36% cases delivered vaginally and 7% cases underwent LSCS. In study by Ferdaushi et al successful vaginal delivery rate was 45.45% in induced cases.[19] The study Ferdaushi et al also showed routine induction of labour in prolonged pregnancy may encourage higher caesarean section rate.[19] In this study, the incidence of caesarean section is more in induction of labour group than spontaneous onset of labour group. This finding is similar with a study conducted by Karmakar et al.[20]

In our study, out of 100 patients 32 patients were delivered by LSCS for different indications. Most common indication for LSCS in present study was foetal distress followed by NPOL. The rate of surgical intervention is increased in post term pregnancies because of foetal distress, non-progress of labour, intrapartum foetal hypoxia and failed induction. The rate of failed induction is more in post-dated pregnancy.

In the present study, perineal tear seen in 31 cases and cervical tear in 6 cases, vulval hematoma seen with 2 cases, atonic PPH seen with 1 case and 8 cases leads to prolonged labour. Labour which is timely assessed by partograph and augmentation done which prevent the prolonged labour. Caughey et al studied and they have found that the rates of operative vaginal delivery, 3rd and 4th degree perineal laceration and chorioamnionitis are increased at or beyond 40 weeks as compared to 39 weeks of gestation.[21]

Post-term pregnancy has been associated with increased risk of perinatal mortality and morbidity including meconium-stained amniotic fluid, meconium aspiration syndrome, macrosomia, foetal birth injury or intrapartum foetal distress. In present study, still birth in 1 case and

intra uterine foetal deaths were found in 3 cases, 8 cases had macrosomia, 7 cases were found respiratory distress, 2 cases had birth asphyxia, 3 had HIE and 5 cases of sepsis. 71 new born were healthy new born without any complication. The 19 cases found to be admitted in NICU. A study by Singh et al NICU admission rate is high as compared to general population (12.5%) which is comparable to present study (19%).[10] NICU admission rate is increased in post-dated pregnancies. Most common indication being of NICU admission being asphyxia neonatorum.

In present study, the incidence foetal complication was identified, maximum foetuses suffered from distress followed by sepsis. 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.[3]

CONCLUSION

Post-date pregnancy is a subject of interest because of its presumed association with increased risk of neonatal morbidity and mortality and maternal morbidity. To reduce the risks of post-date pregnancy early diagnosis, proper Antenatal care with evaluation of maternal and foetal condition should be done. Confirmation of the dates of expected date of delivery is an integral part of the management of post-date pregnancy. There are some ways to reduce the over estimation or under estimation of gestational age by first trimester scan. Gestational age assessment by ultrasonography can help to reduce the incidence of post-dated pregnancy. Regular antenatal check-up and proper counselling and awareness of the pregnant mother with regard to complication of post-dated pregnancy. Patients with risk factors such as primi parity, previous history of post-term birth, obesity need to be identified earlier so as to avoid complication of post-dated pregnancy post-dated pregnancies should be correctly managed as unobserved continuation might lead to foetal and maternal complications. In management of post-date pregnancy, a proper monitoring and counselling can alleviate maternal anxiety with regards to post-date pregnancy. Planned and effective management required with intrapartum monitoring should be done as the perinatal morbidity and mortality is more in post-dated pregnancy. Induction of labour or caesarean section was decided after the clinical examination of the patients. Bishop score and maternal request were taken into account prior to induction of labour. Induction of labour or caesarean section was decided after the clinical examination of the patients. Bishop score and maternal request were taken into account prior to induction of labour. Post-date pregnancy is a multifactorial condition, so proper antenatal care, improving the socio-economic standards, early detection risk factors will help to reduce the incidence of complications related to post-date pregnancy. Post-datism with other complications will be a very high-risk pregnancy in terms of perinatal and maternal outcome, policy of timely intervention should be undertaken.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. WHO recommended definitions, terminology and format for statistical tables related to the perinatal period and use of a new certificate for cause of perinatal deaths. Modifications recommended by FIGO as amended October 14, 1976. Acta obstetricia et gynecologica Scandinavica. 1977;56:247-53.
2. American College of Obstetricians and Gynecologists: Management of lateterm and post-term pregnancies. Practice Bulletin No. 146. Reafrmed 2020.
3. Olesen AW, Westergaard JG, Olsen J. Perinatal and maternal complications related to post term delivery: a national register-based study, 1978-1993. Am J Obstet Gynecol. 2003;189(1):222-7.
4. Norwitz ER, Snegovskikh VV, Caughey AB Prolonged pregnancy: when should we intervene? Clin Obstet Gynecol. 2007;50(2):547-57.
5. Savitz DA, Terry JW, Dole N, Thorp JM, Siega-Riz AM, Herring AH. Comparison of pregnancy dating by last menstrual period, ultrasound scanning, and their combination. Am J Obstet Gynecol. 2002;187(6):1660-6.
6. Taipale P, Hiilesmaa V. Predicting delivery date by ultrasound and last menstrual period in early gestation. Obstet Gynecol. 2001;97(2):189-94.
7. Divon MY, Haglund B, Nisell H, Otterblad PO, Westgren M. Fetal and neonatal mortality in the postterm pregnancy: the impact of gestational age and fetal growth restriction. Am J Obstet Gynecol. 1998;178(4):726-31.
8. Van Eyk N, Allen LM, Sermer M, Davis VJ. Obstetric outcome of adolescent pregnancies. J Pediatr Adolescent Gynecol. 2000;13(2):96.
9. Caughey AB, Stotland NE, Washington AE, Escobar GJ. Maternal and obstetric complications of pregnancy are associated with increasing gestational age at term. Am J Obstet Gynecol. 2007;196(2):155-e1.
10. Singh N, Misra D, Srivastava S. Postdated pregnancy: its maternal and fetal outcome. Int J Reprod Contracept Obstet Gynecol. 2020;9(8):3223-7.
11. Martin JA, Hamilton BE, Sutton PD, Stephanie JV, Fay M, Sharon K et al. Births: final data for 2005. Natl Vital Stat Rep. 2007;56(6):1-103.
12. Hemalatha KR, Shankar P. Study of maternal and foetal outcome in post-term pregnancies. Int J Reprod Contracept Obstet Gynecol. 2017;6(7):3147-50.
13. Ingemarsson I, Kallen K. Stillbirths and rate of neonatal deaths in 76,761 post term pregnancies in

Sweden, 1982-1991: a register study. Acta Obstet Gynecol Scand. 1997;76(7):658-62.
14. Kistka ZA, Palomar L, Boslaugh S. Risk for post term delivery after previous postterm delivery. Am J Obstet Gynecol. 2007;196(3):241.
15. Thangarajah F, Scheufen P, Kirn V, Mallmann P. Induction of Labour in Late and Post term Pregnancies and its Impact on Maternal and Neonatal Outcome. Geburtshilfe Frauenheilkd. 2016;76(7):793-8.
16. Kandalgaonkar VP, Kose V. Fetomaternal outcome in postdated pregnancy. Int J Reprod Contracept Obstet Gynecol. 2019;8(5):1899-906.
17. Agrawal S, Patidar A, Kumar S. Fetomaternal outcome in postdated pregnancy: A Retrospective Study. Int J Med Biomed Studies. 2020;4(6):22-6.
18. Anand N, Shah H. A clinical study of maternal outcome in post dated pregnancy in a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol. 2019;8(9):3573-7.
19. Ferdaushi Z, Alam M, Laily K. Outcome of Spontaneous Vaginal Delivery and Elective Induction of Labour in Postdated Pregnancy. J Bangladesh College Physic Surg. 2022;40:175-82.
20. Karmakar S, Bid S, Maiti TK. A study of post-dated pregnancy with special reference to maternal and perinatal outcome in nulliparous women. Int J Reprod Contracept Obstet Gynecol. 2020;9:4574-9.
21. Caughey AB, Bishop JT. Maternal complications of pregnancy increase beyond 40 weeks of gestation in low-risk women. J Perinatol. 2006;26(9):540-5.

Cite this article as: Chaudhari P, Vohra H. The fetomaternal outcome in case of post-dated pregnancy at tertiary care center. Int J Reprod Contracept Obstet Gynecol 2024;13:1173-8.