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Original Article

Relationship of Maternal Complications and Delivery Methods Among Postdated Pregnancy

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ABSTRACT

Introduction: The World Health Organization and the International Federation of Gynecology and Obstetrics have agreed on the phrases "postdate," "post-term," "postmaturity," and "prolonged pregnancy" to characterize pregnancy after the due date (expected date of delivery). According to the World Health Organization, a post-term pregnancy (PTP) is defined as a pregnancy that lasts longer than 294 days or 42 weeks. Pregnancy after the due date is frequently a substantial risk factor for a variety of negative maternal and newborn outcomes. The purpose of this study was to look at the mother outcomes and delivery procedures in 100 cases of postdated pregnancy. ***Aim of the study:*** The aim of the study was to observe maternal complications and delivery methods of postdated pregnancy cases ***Methods:*** This cross-sectional prospective study was conducted at the Department of Gynecology & Obstetrics, Combined Military Hospital (CMH), Dhaka, Bangladesh. The study duration was one year, from January 2009 to December 2009, and the study was conducted with a total of 100 cases. ***Result:*** Most of the respondents (92%) belonged to the age group of 18-29 years. 64% were multigravida followed by 36% primi gravida. Most of the respondents were found between >40-42 weeks. 90% of respondents had undergone regular checkups as antenatal care. 56 (56%) had induced type of labor followed by the spontaneous type 44 (44%) of onset of labor. Out of 100 respondents, most of the respondents 54 (54%) mode of delivery was described as NVD followed by CS in 44 (44%.) among the 56 induced deliveries, 53.57% were CS and 46.43% were vaginal delivery cases. For mode of induction, 71.43% had oxytocin, 21.43% had misoprostol and the remaining 7.14% had ARM as the method of induction. ***Conclusion:*** The study showed that postdated pregnancy is a major risk factor for adverse maternal complications. Even by itself, postdated pregnancy is recognized as a significant risk factor, and when it leads to cesarean section surgeries for delivery, the possible complications only increases. Bishop's score is also below normal for all post-term pregnancy cases, as observed in our study. Use if Inj. Oxytocin had higher prevalence among CS cases, while use of Tab. Misoprostol had higher incidence among vaginal delivery cases as a method of induction of delivery.

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INTRODUCTION

A normal pregnancy lasts 37 to 42 weeks, sometimes referred to as "term." A pregnancy that lasts more than 42 weeks (294 days) from the first day of the last menstrual cycle is considered post-term. Past-term pregnancies account for up to ten% of all pregnancies.[1] Prolonged pregnancy postdates, postdates, and postdates are all terms that relate to the same phenomenon. The terms "postdate pregnancy" and "prolonged pregnancy" are ambiguous and should be avoided wherever possible.[2] A post-term or postdated pregnancy is a high-risk condition in obstetric therapy because the risk of perinatal mortality and morbidity rises considerably as the pregnancy extends beyond the term.[3]-[5] In the past, the dangers of fetal, neonatal, and maternal issues have been exaggerated in this setting. Prolonged pregnancy affects 3%-14% of all pregnancies, with the proportion varying depending on how gestational age is calculated. The incidence is 7.5% when the diagnosis is based only on menstrual history; however, the incidence is 2.6% when the diagnosis is based on early USG, and 1.1% when both are reviewed together.[6] The proportion of women who suffer pregnancy issues, as well as the incidence of spontaneous preterm labor, impact the rate of post-term pregnancy. The link between ethnicity and the overall length of a pregnancy is not fully known.[7],[8] The most common cause of delayed pregnancies is an incorrect due date; nevertheless, the specific reason for post-term pregnancy is frequently unknown. The gestational age is overstated when standard clinical parameters are used to determine the anticipated delivery date (EDD), which increases the chance of a post-term pregnancy.[9]-[12] Because earlier study on the issue was published before the widespread use of ultrasonography, it is difficult to exactly quantify the harm done to the children, the risks of post-term pregnancy are more than previously imagined. The perinatal mortality rate, which includes stillbirths and early neonatal deaths, is twice as high at 42 weeks of pregnancy as it is at term. This increases to 4-fold at 43 weeks, and 5-7-fold at 44 weeks.[13]-[15] Fetal morbidity is more common in post-term pregnancies and pregnancies that continue longer than 41 weeks. This can include things like meconium passage, meconium aspiration syndrome, macrosomia, and dysmaturity. Post-term pregnancy is associated with low umbilical cord pH levels (newborn acidemia), poor 5-minute Apgar scores, neonatal encephalopathy, and neonatal mortality in the first year of life.[14]-[18] Significant association of post-term pregnancy has also been made with maternal health and complications. With postdated pregnancy, mothers face a higher risk of labor dystocia, severe perineal lacerations, macrosomia, and higher cesarean section rates.[18]-[21] Cesarean section surgery alone increases the risk of various maternal complications compared to a normal delivery.[22],[23]

OBJECTIVE

General Objective

- To observe the maternal complications of postdated pregnancy cases

METHODS

This cross-sectional prospective study was conducted at the Department of Gynecology & Obstetrics, Combined Military Hospital (CMH), Dhaka, Bangladesh. The study duration was one year, from January 2009 to December 2009, and the study was conducted with a total of 100 cases. A purposive sampling technique was conducted to select the 100 participants among those who were admitted to the hospital during the study period and had exceeded their expected delivery date (EDD). Informed written consent was obtained from the participants after following the other exclusion and inclusion criteria. Ethical approval was also obtained from the ethical review committee of the study hospital. The data were collected through a face-to-face interview by a structured questionnaire. All the patients were under regular follow-up. Their onset of labor pain, whether spontaneous or induced, mode of delivery, and the condition of the baby were assessed. Then all the relevant data was collected and recorded from their admission until discharge. Descriptive and statistical methods were used to analyze the data.

Inclusion Criteria

- Uncomplicated singleton pregnancies exceeding EDD.
- Regular menstrual cycle
- Certain regular menstrual or ultrasonic dating before 20 weeks of gestation was included in the study.

Exclusion Criteria

- Patients conceived during the locational amenorrhea period.
- Patient having irregular menstruation
- Patients having medical disorders like hypertension, renal disease, etc.
- Patients with obstetric complications like a history of antepartum hemorrhage, bad obstetric history, intrauterine growth restriction(IUGR), any congenital anomalies, malpresentation, cephalopelvic disproportion, previous caesarian section, etc.
- Unable to answer the criteria question

RESULTS

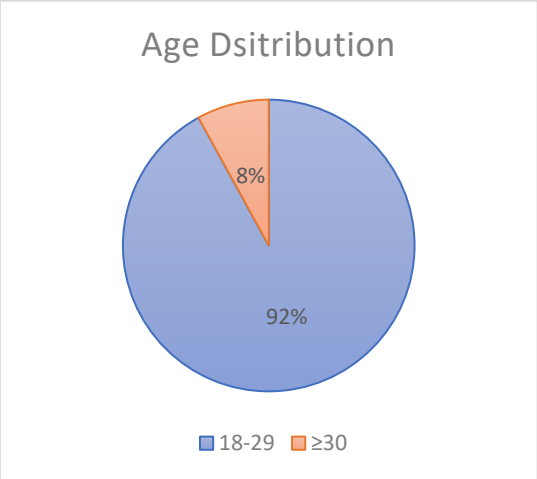

Figure 1: Age distribution of the participants (n=100)

Figure 1 showed that most of the respondents (92%) belonged to the age group of 18-29 years.

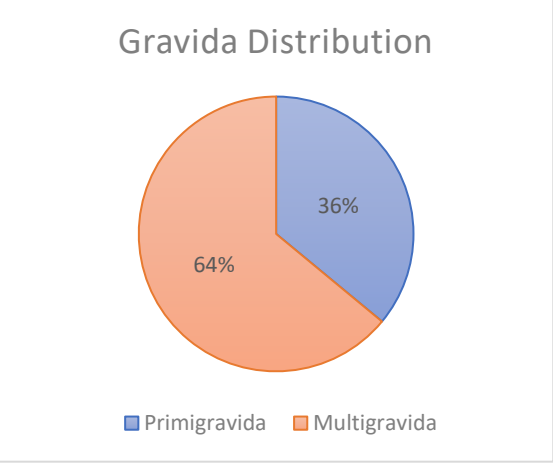

Figure 2: Gravidity distribution of the participants (n=100)

Figure 2 revealed most of the respondents (64%) as multigravida followed by primigravida (36%).

Table 1: Distribution of the participants by the duration of pregnancy (n=100)

Duration of Pregnancy (In Weeks)	Frequency	Percentage
>40-42	93	93%
>42-43	6	6%
>43	1	1%

Table 1 showed the duration of pregnancy among most of the respondents was found between >40-42 weeks

Table 2: Distribution of the participants by antenatal checkup frequency (n=100)

Antenatal Check-Up	Frequency	Percentage
Regular check-up	90	90%
Irregular checkup	8	8%
No check-up	2	2%

In table 2, it had been found that out of 100 respondents, 90(90%) respondents were used to going for regular checkups as antenatal care.

Table 3: Clinical assessment of liquor amniotic fluid

Amount of liquor	Number of cases	Percentage
Adequate	85	85%
Scanty	15	15%

Table 4: Distribution of the participants by type of onset of labor (n=100)

Onset of labor	Frequency	Percentage
Spontaneous	44	44%
Induced	56	56%

Table 3 showed that most of the respondents 56 (56%) had induced type of labor followed by the spontaneous type 44 (44%) of onset of labor.

Table 5: Distribution of the participants by mode of delivery (n=100)

Mode of Delivery	Frequency	Percentage
NVD	54	54%
CS	44	44%
Ventouses	2	2%

Table 4 revealed that out of 100 respondents, most of the respondents' 54 (54%) mode of delivery was described as NVD followed by CS 44 (44%.)

Table 6: Distribution of participants by maternal complications on admission (n=100)

Complications	Frequency	Percentage
Only post term pregnancy	60	60%
Less Fetal movement	28	28%
Rupture of the membrane	6	6%

Oligohydramnios	6	6%

In table 5 it had been found that the post-term pregnancy was narrated as one of the most common maternal complications by 60(60%) respondents whereas the less fetal movement was found in 28 (28%) respondents as a maternal complication.

Table 7: Bishop's score before induction (n=100)

Bishop's score	Number of cases	Percentage
≥6	66	66%
<6	34	34%

Bishop's score was <6 for 34% of the participants, while it was 6 or higher for the remaining 66% of the participants.

Table 8: Mode of induction methods among induced delivery cases (n=56)

Mode of Induction	NVD		CS		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Inj. Oxytocin (n=40)	16	40%	24	60%	40	71.43%
Tab. Misoprostol (n=12)	08	66.67%	04	33.33%	12	21.43%
ARM (n=04)	02	50%	02	50%	04	7.14%
Total	**26**	**46.43**	**30**	**53.57**	**56**	**100%**

Among the 56 induction delivery cases, 46.43% were NVD cases, and 53.57% were cesarean section delivery cases. For mode of induction, Inj. Oxytocin was used for 40 cases, among which 16 (40%) were NVD deliveries and 24 (60%) were CS deliveries. Tab. Misoprostol was used for 12 participants, among which 66.67% were from NVD cases, and 33.33% were from CS cases. 4 participants had undergone ARM method of induction, among which 50% were NVD cases and 50% were CS cases.

DISCUSSION

The current study included a total of 100 instances of postdated pregnancies admitted to the study hospital during the course of the study period. Only 8% of the research participants were 30 years or older, indicating that the bulk of the individuals were under 30 years old. Another research came up with similar results.[24] Similar research on postdated pregnancy instances found that the chance of a post-term pregnancy rose with mother age, although in many cases, the majority of the study patients were over 30 years old.[25] Our study found that the proportion of multigravida patients was greater among the postdated pregnancy cases, which contradicted the findings of earlier studies.[24],[26],[27] The discrepancy in the prevalence of primigravida and multigravida patients could not be

explained. 93% of the participants had a gestational age of >40-42 weeks, 6% had a gestational age of >42-43 weeks, and 1 patient had a gestational age of above 43 weeks. This high gestational duration at the time of admission might be attributed to a lack of knowledge, ignorance, and awareness about the dangers of prolonged pregnancy, which could be alleviated with good prenatal care and health education. As a result, 44% of the individuals had spontaneous births, whereas 56% had to have their babies induced. Cesarean section was used in 44% of cases, normal vaginal birth in 54 percent, and ventouse or aided delivery in two patients. In our study, the rate of cesarean section births was greater than in several previous studies.[28],[29] Among the present study participants, a total of 56 required induction, among whom 40 had Inj. Oxytocin, 12 had Tab. Misoprostol and 4 had ARM as their method of induction. 46.43% of the induction deliveries were vaginal in nature, while the remaining 53.57% were CS deliveries. It was observed that Inj. Oxytocin had a higher incidence of usage among CS deliveries, while Tab. Misoprostol had a higher incidence among vaginal deliveries. Bishop's score was <6 for 34% of cases, while it was ≥6 for the remaining 66% of the cases, compared to normal bishop score of ≥8 for a normal delivery. Among the maternal complications, 60% had only post term pregnancy as the complication, 28% had low fetal movement, 6% had ruptured membranes and another 6% had oligohydramnios.

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

The study showed that postdated pregnancy is a major risk factor for adverse maternal complications. Even by itself, postdated pregnancy is recognized as a significant risk factor, and when it leads to cesarean section surgeries for delivery, the possible complications only increases. Bishop's score is also below normal for all post-term pregnancy cases, as observed in our study. Use if Inj. Oxytocin had higher prevalence among CS cases, while use of Tab. Misoprostol had higher incidence among vaginal delivery cases as a method of induction of delivery.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. *Post Term Pregnancy (Beyond the basics) [Internet]. UpToDate. [cited 2022Jun6]. Available from: https://www.uptodate.com/contents/post-term-pregnancy-beyond-the-basics*
2. *American College of Obstetricians and Gynecologists. Management of post-term pregnancy. ACOG practice bulletin. 2004 Sep;104(3):639-46.*
3. *Galal M, Symonds I, Murray H, Petraglia F, Smith R. Post-term pregnancy. Facts, views & vision in ObGyn. 2012;4(3):175.*
4. *Olesen AW, Basso O, Olsen J. Risk of recurrence of prolonged pregnancy. Bmj. 2003 Mar 1;326(7387):476.*
5. *Caughey AB, Stotland NE, Washington AE, Escobar GJ. Maternal and obstetric complications of pregnancy are associated with increasing gestational age at term. American journal of obstetrics and gynecology. 2007 Feb 1;196(2):155-e1.*
6. *Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Menacker F, Kirmeyer S, Munson ML. Births: final data for 2005. National vital statistics reports. 2007 Dec 5;56(6):1-03.*
7. *Collins JW, Schulte NF, George L, Drolet A. Post-term delivery among African Americans, Mexican Americans and*

Whites in Chicago. Ethnicity & Disease. 2001 Mar 1;11(2):181-7.

8. *Caughey AB, Stotland NE, Washington AE, Escobar GJ. Who is at risk for prolonged and post-term pregnancy?. American journal of obstetrics and gynecology. 2009 Jun 1;200(6):683-e1.*
9. *Neilson JP. Ultrasound for fetal assessment in early pregnancy. Cochrane Database of Systematic Reviews. 1998(4).*
10. *Crowley P. Interventions for preventing or improving the outcome of delivery at or beyond term (Cochrane Review). Cochrane Library. Issue 2.*
11. *Gardosi J, Vanner T, Francis A. Gestational age and induction of labour for prolonged pregnancy. BJOG: An International Journal of Obstetrics & Gynaecology. 1997 Jul;104(7):792-7.*
12. *Taipale P, Hiilesmaa V. Predicting delivery date by ultrasound and last menstrual period in early gestation. Obstetrics & Gynecology. 2001 Feb 1;97(2):189-94.*
13. *Feldman GB. Prospective risk of stillbirth. Obstetrics and gynecology. 1992 Apr 1;79(4):547-53.*
14. *Hilder L, Costeloe K, Thilaganathan B. Prolonged pregnancy: evaluating gestation-specific risks of fetal and infant mortality. BJOG: an international journal of obstetrics & gynaecology. 1998 Feb;105(2):169-73.*
15. *Cotzias CS, Paterson-Brown S, Fisk NM. Prospective risk of unexplained stillbirth in singleton pregnancies at term: population based analysis. Bmj. 1999 Jul 31;319(7205):287-8.*
16. *Kitlinski ML, Källén K, Marsál K, Olofsson P. Gestational age–Dependent reference values for pH in umbilical cord arterial blood at term. Obstetrics & Gynecology. 2003 Aug 1;102(2):338-45.*
17. *Badawi N, Kurinczuk JJ, Keogh JM, Alessandri LM, O'Sullivan F, Burton PR, Pemberton PJ, Stanley FJ. Antepartum risk factors for newborn encephalopathy: the Western Australian case-control study. Bmj. 1998 Dec 5;317(7172):1549-53.*
18. *Rand L, Robinson JN, Economy KE, Norwitz ER. Post-term induction of labor revisited. Obstetrics & Gynecology. 2000 Nov 1;96(5):779-83.*
19. *Treger M, Hallak M, Silberstein T, Friger M, Katz M, Mazor M. Post-term pregnancy: should induction of labor be considered before 42 weeks?. The Journal of Maternal-Fetal & Neonatal Medicine. 2002 Jan 1;11(1):50-3.*
20. *Alexander JM, McIntire DD, Leveno KJ. Forty weeks and beyond: pregnancy outcomes by week of gestation. Obstetrics & Gynecology. 2000 Aug 1;96(2):291-4.*
21. *Campbell MK, Østbye T, Irgens LM. Post-term birth: risk factors and outcomes in a 10-year cohort of Norwegian births. Obstetrics & Gynecology. 1997 Apr 1;89(4):543-8.*
22. *Eden RD, Seifert LS, Winegar A, Spellacy WN. Perinatal characteristics of uncomplicated postdate pregnancies. Obstetrics and gynecology. 1987 Mar 1;69(3 Pt 1):296-9.*
23. *Alexander JM, MCIntire DD, Leveno KJ. Prolonged pregnancy: induction of labor and cesarean births. Obstetrics & Gynecology. 2001 Jun 1;97(6):911-5.*
24. *Bhriegu R, Agrawal M, Hariharan C. Assessment of maternal and perinatal outcome in postdated pregnancy. Journal of Datta Meghe Institute of Medical Sciences University. 2017 Jan 1;12(1):35.*
25. *Roos N, Sahlin L, Ekman-Ordeberg G, Kieler H, Stephansson O. Maternal risk factors for post-term pregnancy and cesarean delivery following labor induction. Acta obstetricia et gynecologica Scandinavica. 2010 Aug 1;89(8):1003-10.*
26. *Mahapatro A, Samal S. Fetomaternal outcome in pregnancy beyond 40 weeks. Int J Pharm Bio Sci. 2015;6(2):53-8.*
27. *Alexander JM, McIntire DD, Leveno KJ. Forty weeks and beyond: pregnancy outcomes by week of gestation. Obstetrics & Gynecology. 2000 Aug 1;96(2):291-4.*
28. *Singhal P, Sharma A, Jain D, Panday V. Fetomaternal outcome following postdate pregnancy. A prospective study. J Obstet Gynecol India. 2001;51:89-93.*
29. *Kaplan B, Goldman GA, Peled Y, Hecht-Resnick R, Neri A, Ovadia J. The outcome of post-term pregnancy. A comparative study.*