

A Study of Fetomaternal Outcome in Post-dated and Postterm Pregnancy at a Tertiary Care Hospital

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Abstract:

Objectives: To determine fetomaternal outcome in postdated and post term pregnancy.

Material and Methods: It is data analysis of postdated and post term patients who delivered at C.U. Shah medical college over a period of 1 year (1st August 2022 to 31st July 2023). Only 195 patients fulfilled the criteria. Their detailed data was obtained from the department.

Results: In the present study, total of 1660 patients were studied over a span of 1 year, i.e. 1st August 2022 to 31st July 2023. Out of these 164 deliveries were postdated and 31 deliveries were post term. Most of the patients were illiterate, unbooked and belonged to rural area. There were increased chances of instrumental delivery, failure of induction and chances of caesarean section increases with postdatism and post term pregnancies. Neonates belonging to the same group also required NICU admission with adverse outcomes.

Conclusion: Maternal and fetal morbidity and mortality can be reduced by electively inducing pregnant women at 40+0 weeks as allowing them to continue beyond this gestational age has shown adverse fetal-maternal outcomes. This can be achieved by appropriate ANC care and counseling. CTG reading and partograph charting are required to reduce the neonatal adverse outcome and fetal mortality after time of induction.

Keywords: Postdated, Post Term, Fetomaternal Outcome.

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Introduction

Pregnancy is thought to last 266 days after ovulation on average. If the cycle runs at intervals of 28 days, the date of an ovulatory event can be approximated as occurring 14 days after the first day of the previous menstrual period [1]. A gestational age ranging from three weeks before to the anticipated delivery date to two weeks postpartum was considered a term pregnancy. A term lasts five weeks, with a range of 37 to 42 weeks.

To more accurately describe deliveries that occur at or beyond 37 weeks of gestation, a work group comprising representatives from the American College of Obstetrics and Gynecology, the Society for Maternal Fetal Medicine, and professional societies proposed in late 2012 that the term be replaced with early term, full term, late term, and post term [2,3]. Pregnancies that last more than 40 weeks (incidence of 4% to 14%) are considered post-dated. According to ACOG (2004), a post-

term pregnancy is any pregnancy that has progressed to or past 42 weeks of gestation and has an incidence of 5% to 10%. "Post-maturity syndrome" and "post-dated pregnancy" are not interchangeable phrases. In addition to offering a thorough explanation of the post-mature condition, Clifford [4] suggested employing a staged approach to treat the more severe clinical signs of placental failure. Infants with wrinkled skin are identified as being in Stage 1. Stage 2 includes the greenish meconium staining of the placental membranes, fetal skin, and amniotic fluid in addition to the clinical symptoms of Stage 1.

Meconium staining that is yellow in color and a high frequency of fetal discomfort are characteristics of stage 3. At 42 weeks of pregnancy, the incidence rises with the length of the pregnancy; 20% of fetuses develop post-maturity stigmata. Fetal birth damage, fetal septicemia, non-reassuring fetal heart rate, meconium-stained fluid,

meconium aspiration syndrome, oligohydramnios, macrosomia, and fetal discomfort during labor are among the many perinatal mortality and morbidity risks associated with post-dated and post-term pregnancies.

This danger is mostly brought on by increased fetal weight, declining placental function, oligohydramnios, which compresses the cord, and perinatal mortality, which doubles at 42 weeks compared to 40 weeks and triples at 44 weeks. Maternal hazards include an increased risk of postpartum hemorrhage, an increased chance of labor dystocia, an increased risk of perianal damage from instrumental delivery and macrosomia, and an increased rate of operative Delivery [5]. An obstetrician is required by all of these elements to take the essential steps at the right moment. According to ACOG, under favorable circumstances, it is reasonable to incorporate labor into post-term pregnancies due to the minimal

chance of an unsuccessful induction and subsequent delivery [2].

Objectives

1. To determine maternal outcomes in post-dated and post-term pregnancy.
2. To determine fetal outcomes in post-dated and post-term pregnancy.

Material and Methods

It is a data analysis of post-dated and post term patients who delivered at

C.U. Shah medical college over a period of 1 year (1st August 2022 to 31st July 2023). Only 195 patients fulfilled the criteria.

Their detailed data was obtained from the department. Age, BMI, obstetric history, past history, family history were taken in to account

Results

Table 1: Sociodemographic Data

Age	Post dated	Post term
<20 years	15(9.15%)	9(29.03%)
20-35 years	135(82.32%)	20(64.52%)
>35 years	14(8.53%)	2(6.45%)
Residential Area		
Rural	134(81.71%)	26(83.87%)
Urban	30(18.29%)	05(16.13%)
Education		
illiterate	156(95.12%)	28(90.32%)
Literate	8(4.88%)	3(9.68%)
Booking status		
Booked	23(14.02%)	2(6.45%)
Unbooked	141(85.98%)	29(93.55%)
Gravida		
Primi	153(93.29%)	29(93.55%)
Multigravida	11(6.71%)	2(6.45%)

In the present study, the majority of cases 135 (82.32%) of postdatism and 20 (64.52%) of postterm patients were between 20 and 35 years old. Among postdatism, 15 (9.15%) patients were below 20 years old, and 14 (8.53%) were above 35 years old. Simultaneously, among postterm patients, 9 (29.03%) were below 20 years old and 2 (6.45%) were above 35 years old.

It was seen that 134 (81.71%) of post- postdated patients and 26 (83.87%) of post-term patients belonged to the rural area as compared to 30 (18.29%) of post-datism and 05 (16.13%) of post-term, which belong to the urban area. The majority of patients in both groups, 156 (95.1%) and 28

(90.32%), Post datism and post-term, respectively, were illiterate. Only 8 (4.88%) postdated patients and 3 (9.68%) post-term patients were literate. Out of 164 post-dated patients, 23 (14.02%) were our booked patients, and 141 (85.98%) were unbooked.

They were either transferred to our institute or came for the first visit at our center. Similarly, out of 31 post-term patients, only 2 (6.45%) were booked, while 29 (93.55%) were unbooked. Most of the patients in both groups 153 (93.29%) in the post-datism group and 29 (93.55%) in the post-term group were primigravida. 11 (6.71%) in the post-datism group and 2 (6.45%) in the post-term group were multigravida.

Table 2: Clinical Presentation

	Post dated	Post term
Labourpains		
Present	118(71.95%)	20(64.52%)
Absent	46(28.05%)	11(35.48%)
Modified Bhisop Score		
<4	55(33.54%)	16(51.61%)
5-8	30(18.29%)	14(45.16%)
>9	79(48.17%)	01(3.23%)

According to Table 2, the clinical presentation at the time of admission showed that 118 (71.95%) patients in Postdatism and 20 (64.5%) patients in the postterm group had complaints of labour pains. In comparison to the data, 46 (28.05%) post-patients and 11 (35.48%) post-term patients had no complaints about their time of admission. In our study, we divided the patients according to the

Modified Bishops score in both groups. In the post-datism group, 79 (48.17%) patients had a score of >9, 30 (18.29%) patients had a score of 5-8, and 55 (33.54%) patients had a score of <4.

Simultaneously, in the post-term group, 16 patients (51.61%) had a score <4, 14 (45.16%) had a score of 5-8, and only 1 (3.23%) had a score above 1.

Table 3: Mode of delivery

	Post dated	Post term
SpontaneousVaginal	83(50.61%)	04(12.90%)
Successful Induction	15(9.15%)	00(0%)
Caesarean	63(38.41%)	27(87.10%)
Instrumental (Vacuum)	03(1.83%)	00(0%)

Table 3 shows various modes of delivery. In post-datism, 83 (50.61%) patients had spontaneous delivery, 15 (9.15%) patients underwent successful induction, and 3 (1.83%) patients required vacuum-assisted delivery. Thus, 101 (61.59%) patients delivered vaginally, while 63 (38.41%) patients underwent a caesarean section. In postterm patients, out of 31 patients, only 4 (12.90%) had spontaneous delivery, while the 27(87.10%) underwent Caesarean section.

Table 4: Maternal complications

	Post dated	post term
PPH	04(2.44%)	07(22.58%)
Vaginal laceration	05(3.05%)	02(6.45%)
Complete Perineal tear	04(2.44%)	00(0%)
Labour Dystonia	07(4.27%)	04(12.90%)
Failed Induction	04(2.44%)	07(22.58%)
No Complications	140(85.36%)	11(35.48%)

In the present study, maternal complications included failed induction (2.44%) in post-datism patients and (22.58%) in post-term patients, labour dystrophy (4.27%) in post-datism patients, and (12.90%) in post-term patients. Along with this, 4 (2.44%) patients in postdatism and 7 (22.58%) patients in postterm had PPH. A complete perineal

tear was seen in 4(2.44%) patients in post-datism only. There was no complete perineal tear in the post-term group. This may be due to the lower number of vaginal deliveries in this group. Vaginal laceration was seen in 5 (3.05%) patients in post-datism and 2 (6.45%) patients in the post-term group.

Table 5: Birth weight

	Post dated	Post term
<2.5 kg	06(3.66%)	01(3.23%)
2.5 -3.5 kg	136(82.93%)	22(70.97%)
>3.5 kg	22(13.41%)	08(25.80%)

In both groups, the majority of the babies, 136 (82.93%) in the post-datism group and 22 (70.97%) in the post-term group, had a birth weight between 2.5 and 3kg. 22 (13.41%) babies in post-datism and 8 (25.80%) babies had their birth weight >3.5kg. Only 7 babies, 6 (3.66%) babies in postpartum and 1 baby in postterm had a birth weight less than 2.5 kg.

Table 6: NICU Admission

	Post dated	Post term
Meconium Stained Liquor	24(14.63%)	07(22.58%)
Low Birthweight	06(3.66%)	01(3.23%)
Respiratory Distress (Without MSL)	20(12.20%)	05(16.13%)
Hypoglycaemia	10(6.10%)	03(9.68%)
Hyper bilirubinemia	15(9.15%)	02(6.45%)

Table 7: Perinatal Mortality

	Post dated	Post term
Still birth	02(1.22%)	01(3.23%)
Neonatal Death	03(1.83%)	02(6.45%)

Out of 164 babies in the post-dated group, 2 (1.22%) were stillborn, 3 (1.83%) had IUFD, and 75 (45.73%) required NICU admission. Reasons for NICU admissions included meconium-stained liquor in 24 (14.63%) neonates, respiratory distress (without MSL) in 20 (12.20%) neonates, Hyper bilirubinemia in 15 (9.15%) neonates, hypo glycemia in 10 (6.10%), and low birth weight in 6 (3.66%) neonates. In post-term group out of 31 babies, 1 (3.23%) were still born, 02 (6.45%) were IUFD and 18 (58.06%) required NICU admission. 7 (22.58%) neonates required NICU admission for meconium-stained liquor, and 5 (16.13%) neonates were admitted for respiratory distress (without MSL). 2 neonates (6.45%) had hyperbilirubinemia, while 3 (9.68%) had hypoglycemia and only 1 (3.23%) neonate had a low birth weight, for which they were admitted to the NICU.

Discussion

Postdated pregnancy is defined as one that has crossed 40 weeks, while postterm is one that has crossed 42 weeks. As gestation progresses, a series of changes occur in the placenta, fetus, and amniotic fluid. It has been noted that in pregnancies that have crossed EDD, there is an increased risk of intrapartum fetal distress, mostly due to oligohydramnios, meconium-stained liquor, macrosomia, post-maturity syndrome, and caesarean delivery. Both postterm and postdated pregnancies are regarded as high-risk because of the rise in perinatal morbidity and mortality.

The aim of the present study was to analyze the outcome of pregnancies that crossed the EDD. How long should a pregnancy last? Should pregnancy be allowed to run a natural course, or is induction necessary? In our study, as per Table 1, the majority of the cases were between 20 and 35 years of age. The majority of the cases belonged to rural areas [134 (81.7%) postdated and 26 (83.87%) postterm]. Out of 195 patients in our study, 170 were unbooked, and 180 were illiterate.

In our study, we found that 182 patients were primigravida, compared to 13 patients who were multigravida. In various studies, Marahatta et al [6] showed a higher incidence of multigravida (54%).

Same Naz et al [7] found 54% multigravida with postdatism, and Akhter [8] also found 53% of patients with postdatism multigravida. Contrary to this Mahopatro, et al. [9] showed the majority (72%) of patients to be primigravida. 57 patients presented with absence of labor pains, while 138 patients presented with labor pains. Poor bishop score was associated with failure of induction and lesser chances of delivery. 81 patients had a Bishop score <4, while 80 patients had a >9. Only 64 patients had a Bishop score between 5-8. In our study, 87 patients (44.61%) had spontaneous vaginal delivery, and 15 patients (7.9%) had successful induction. 90 patients (46.15%) underwent caesarean sections, while 3 patients required vacuum delivery. A prospective study conducted by Singal et al [10], showed that 54% delivered spontaneously.

The majority of maternal complications in postdatism included labor dystopia (4.27%), followed by vaginal laceration (30.5%). Simultaneously, the majority of complications in postterm patients included failed induction (22.58%) and PPH (22.58%).

In the present study of 195 cases, there were 7 perinatal deaths. Out of 7, 5 cases were IUFD, and 3 cases were still births. Out of 5 IUFDs, 1.83% belonged to postdatism, and 6.45% belonged to the post-term group. 1.22% of stillbirths were noted in the postdated group, and 3.23% belonged to the postterm group.

Conclusion

Of the 1660 deliveries in the current study, 164 were post-dated pregnancies, and 31 were post-term pregnancies.

The study demonstrates that as gestational age rises above 40 weeks, there is an increase in maternal morbidity in the form of emergency LSCS, instrumental delivery, PPH, vaginal laceration, and perineal tear. As gestational age increased over 40 weeks, there was also a notable rise in perinatal morbidity and death in the form of birth asphyxia, meconium aspiration syndrome, respiratory distress (which increased NICU hospitalization), stillbirths,

and intrauterine death. The occurrence of postdatism can be reduced with routine prenatal care.

Thus, we deduce that the best way to reduce postdatism is through early detection, appropriate prenatal counseling (about the advantages, risks, and complications related to postdatism and postterm pregnancy), and effective and appropriate treatment.

In conclusion, elective induction of pregnancy at 40 weeks can lower morbidity and mortality among mothers and newborns. Appropriate partograph and CTG documentation are necessary to lower NICU admissions and neonatal deaths.

References

1. Agrawal, S., Patidar, A., & Kumar, S. (2020). Fetomaternal Outcome in Post Dated Pregnancy: A Retrospective Study. *International Journal of Medical and Biomedical Studies*, 4(6):22-26
2. .Punya Bs, Mpa S, Study of postdated and term pregnancy with fetomaternal outcome at RRMCH. *Indian J Obstet Gynecol Res* 2017;4(2):179-183
3. F.Facchinetti, V. Vaccaro Unit of Gynecology and Obstetrics, Mother Infant Department, University of Modena and Reggio Emilia, Modena, Italy.
4. 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 Obstet Gynecol Scand* 1977; 56 (3):247-53.
5. Gary F Cunningham, Steven L Bloom, Catherine Y Spong, Jodi S Dashe, Kenneth J Leveno, Barbara L Hoffman, Brian M Casey, Jeanne S Shaffield, et al. Post term pregnancy. *Williams Obstetrics*, 24th Edition, McGraw-Hill, Medical Publication Division, USA, 2014:862- 871pp
6. Marahatta R, Tuladhar H, Sharma S. Comparative study of post term and term pregnancy in Nepal Medical College Teaching Hospital (NMCTH) *Nepal Med Coll J*. 2009;11:57-60
7. Naz F, Javid A, Saeed S. Neonatal outcome in post-term pregnancy. *Age (Omaha)*. 2006; 42(45):75.
8. Mahapatro A, Samal S. Fetomaternal outcome in pregnancy beyond 40 week. *Int JPharma Bio Sci*. 2015; 6(2):53-8.
9. Akhter P, Sultana M, Hoque M, Sultata S, Khatun MR. Dabee SR, Maternal outcome of prolonged pregnancy. *J Bangladesh Coll Phys Surg*. 2014) 32(2): 66.
10. Singhal P, Sahrma A, Jain S, Pandey V. Fetomaternal outcome 16. Following postdate pregnancy-a prospective study. *J Obst Gynecol Ind* 2001; 51(5):89-93.