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Original Research Article

Postdated pregnancy: a risk factor for adverse maternal and perinatal outcome

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ABSTRACT

Background: The study's objective is to contrast maternal and perinatal outcomes in postdated and term pregnancies in order to better understand the related risks and difficulties.
Methods: A retrospective observational study was conducted at the Department of Obstetrics and Gynaecology, ANMMCH, Gaya, between June 2019 and May 2023. The study comprised 474 women, separated into two groups: term (37-40 weeks) and postdated (>40 weeks). Data were gathered from medical records, with an emphasis on maternal and fetal problems. The statistical analysis used Student's t-tests and Chi-square.
Results: The present study involving 474 pregnant women (postdated-186, term-288) revealed that postdated pregnancies had greater risks of maternal problems, such as postpartum hemorrhage (34 vs. 18 instances, p=0.0001), cervical tears (6 vs. 5 cases, p=0.354), as well as postpartum infections (8vs.11 case, p=0.8137). Furthermore, perineal injuries occurred more frequently in postdated pregnancies (15 vs. 7 incidence, p=0.0064). Fetal problems were also more common, with shoulder dystocia (4 vs. 5 case, p = 0.7426) and meconium aspiration (20 vs. 16 instances, p = 0.0497). The rate of fetal hypoxia was considerably higher in postdated pregnancies (8 vs. 6 instance, p=0.1756). A higher proportion of term pregnancies had no issues (250 vs. 128 instances, p=0.00001), indicating that term births are relatively safe.
Conclusions: The study found that postdated pregnancies are associated with greater maternal and fetal problems, demanding close monitoring and timely interventions.

Keywords: Postdated pregnancy, Maternal complications, Fetal complications, Term pregnancy, Prenatal care

INTRODUCTION

Pregnancy that lasts 42 weeks or longer after the first day of the last menstrual period (LMP) is referred to as post-term pregnancy. It occurs in about 5% to 10% of all pregnancies and is characterized as reaching or exceeding 40 weeks after the LMP, with an incidence rate ranging from 4% to 14%.[1,2] Both disorders carry major hazards due to the possibility of placental insufficiency, which may result in fetal suffering and even death.[3] Post-term pregnancies, in particular, are linked to complications such as oligohydramnios, meconium aspiration syndrome, fetal septicemia, birth injuries, and maternal complications such as increased caesarean delivery rates, dystocia, cephalopelvic disproportion, postpartum hemorrhage, and cervical tears.[4,5]

Although the hazards of post-term pregnancies are well recognized, it is unclear if these risks increase before 42 weeks. This study will look into the maternal and fetal hazards connected with pregnancies that last more than 40 weeks. Despite developments in obstetric and neonatal care, retrospective studies show that around 3% to 10% of all pregnancies last until 42 weeks, increasing the hazards for both mother and fetus.[6] At 40 weeks, the perinatal mortality rate is roughly 2-3 deaths for every 1,000

deliveries and by 42 and 44 weeks, this value nearly doubles, and jumps four to sixfold, respectively.[4,6]

The terms used to describe longer pregnancies-prolonged, post-term, post-mature, and post-dated-are frequently used interchangeably. The American college of obstetricians and gynecologists (ACOG) advises 'protracted pregnancy' for pregnancies lasting 42 weeks or more, while 'post-mature' is reserved for infants with clinical symptoms of a pathologically prolonged pregnancy.[7] As a result, 'prolonged pregnancy' or 'post-term' is the favored phrase for discussing long pregnancies which last more than 42 weeks.

Under favourable conditions, the ACOG recommends inducing labour in post-dated pregnancies as lower risk is associated with failure of induction as well as caesarean delivery. Pregnancy beyond 42 weeks offers severe risks to the fetus.[8] Advances in perinatal medicine have reduced the number of such lengthy pregnancies, with the rate of post-dated pregnancies now acting as a quality measure for perinatal care centers. This is because to the negative outcomes associated with the majority of deliveries after 294 days.[9]

The present study is attempts to provide a better knowledge of the maternal and fetal difficulties related with postdated pregnancies, particularly those lasting more than 40 weeks. By assessing the risks and consequences of postdated pregnancies, this study hopes to enhance clinical practices and policy decisions, ultimately improving maternal and perinatal health.

METHODS

Study design

A retrospective observational study was conducted for over four years, from June 2019 to May 2023, to contrast the maternal as well as perinatal outcomes in postdated pregnancies to term pregnancies.

Inclusion and exclusion criteria

The present investigation comprises all pregnancies over 37 weeks gestation that were delivered at the Department of Obstetrics and Gynaecology, ANMMCH, Gaya, with no related prenatal problems. The participants were separated into two groups as Group T (term pregnancies 37-40 weeks) with 288 patients and Group P (postdated pregnancies >40 weeks) with 186 patients. Women with preeclampsia, chronic hypertension, congenital abnormalities, cardiac ailments, antepartum haemorrhage, and irregular menstrual cycles were excluded from this study.

Study setting

The research was conducted in the department of obstetrics and gynaecology at ANMMCH, Gaya. The data for the study were acquired from the hospital records of about 474 patents who delivered at the institute during the designated time period were included in this study.

Data collection

The data for this investigation came from existing records. Demographic data and outcomes for each subject were recorded. Maternal complications included manner of delivery, shoulder dystocia, perineal trauma, and postpartum hemorrhage. Perinatal outcomes included meconium aspiration, macrosomia, APGAR scores of fewer than 8 at 1 and 5 minutes, NICU admissions, and perinatal mortality.

Statistical analysis

Categorical data is displayed as numbers and percentages, and continuous data is represented as means and standard deviations. To assess the relationships between variables, the present study used Chi-square test and Student's t-tests.

RESULTS

Participants

The study included 474 pregnant women, distributed between term pregnancies (Group T) and post-dated pregnancies (Group P). Table 1 indicates that the sociodemographic distribution of women varies by age, education, booking status, past protracted pregnancies, and gravidity across Groups T and P. The participants' average age is about 3.324 years, with a standard deviation of 1.0232. A considerable proportion of women in both groups are between the ages of 20 and 35, with Group P having more women aged 31 to 35 and over 35 than Group T. Educationally, both groups have a significant proportion of illiterate women, with 25.8% in Group T and 18.05% in Group P, although primary school education is also common. Booking status suggests that Group P (44.6%) is relatively less proportion of booked women than Group T (50.6%). Previously postdated pregnancies are more common in Group P (14.89%) than in Group T (7.4%) excluding all primigravida women. In terms of gravidity, a greater proportion of women in Group T are primigravida (57.98%) than in Group P (48.93%), and grand multipara status is significantly higher in Group P (19.9%) than in Group T (8%) (Table 1).

Pregnancies were classified as term (between 37-40 weeks), post-dated (> 40 weeks), or post-term (>42 weeks) based on the gestational age of the woman. Among postdated pregnancies 24.73% (n=46) were post term pregnancies (Table 2). The study also assessed the mode of birth and classified it based on gestational age. In term pregnancies (37-40 weeks), vaginal deliveries are the most common (68.75%), followed by LSCS (27.08%) and instrumental deliveries (4.1%). In post-dated pregnancies (>40 weeks), LSCS is more common (51.61%), with vaginal deliveries (31.78%), and instrumental deliveries

(8.6%). Vaginal deliveries account for 28.6% (13 cases) of post-term pregnancies (>42 weeks), while LSCS 65.21% (30 cases) and instrumental deliveries 6.5% (3 cases). These findings show that post-dated and post-term pregnancies have a higher risk of LSCS than term pregnancies (Table 3).

Table 1: Sociodemographic distribution of women, (n=474).

Sociodemographic	Group P (n=186)	Group T (n=288)	Mean	Std. deviation
Age (In years)				
20	10	20	3.324	1.0232
20-25	46	30		
26-30	52	40		
31-35	72	140		
More 35	6	58		
Education				
Illiterate	48	52	2.426	0.942
Primary school	66	62		
Secondary school	46	108		
Graduated	26	66		
Booking status				
Booked	84	146	1.224	0.416
Unbooked	102	142		
Previous postdated pregnancy				
Yes	14	9	1.628	0.472
No	80	112		
Gravidity				
Primigravida	92	167	1.426	0.628
Multipara	57	98		
Grand multipara	37	23		

Table 2: Classification of women as per gestational age.

Gestational age (weeks)	Group T	Group P	Total
37-40 weeks (term pregnancies)	288	0	288
> 40 weeks (post-dated pregnancy)	0	186	186
0> 42 weeks (post-term pregnancy)	0	46	46

Table 3: Classification of women as per mode of delivery.

Gestational age (weeks)	Group P (n=186)	Group T (n=288)	P value
Vaginal delivery	74	198	0.00001
LSCS	96	78	0.00001
Instrumental delivery	16	12	0.07177

Table 4: Maternal complications seen in both the patient groups.

Maternal complications	Group P (n=186)	Group T (n=288)	P value
Perineal trauma	15	7	0.0064
Cervical tear	6	5	0.354
Postpartum hemorrhage	34	18	0.0001
Postpartum infection	8	11	0.8137
No complication	128	250	0.00001

The study found substantial variations in maternal problems between term (Group T) and post-date pregnancies (Group P). Maternal complications such perineal trauma, cervical tear, postpartum haemorrhage, and postpartum infection are more common in Group P than in Group T. Group P has almost four times as many

perineal trauma cases (8% vs. 2.4%), two times as many cervical tears (3.4 %vs. 1.7%) as compared to group T. In terms of postpartum haemorrhages, 40 cases were observed in Group P (17.2%) as opposed to Group T which had 6.25%. Postpartum infections were seen in roughly 4% of the patients in both the cohorts. However, the vast majority of women in both groups had no difficulties, with 250 in Group T and 128 in Group P, demonstrating a high overall percentage of simple births. (Table 4).

Fetal complications followed a similar pattern to maternal complications, with greater rates in Group P. Shoulder dystocia and asphyxia occur more frequently in Group P than Group T. 10.75%of meconium aspiration was reported in Group P in comparison to group T 5.5%, but the majority of patients in both groups had no fetal problems. These data indicate that post-dated and post-term pregnancies (Group P) are related with higher maternal and fetal problems than term pregnancies (Group T), emphasizing the significance of close monitoring and management in protracted pregnancies (Table 5).

Table 5: Fetal complications seen in term pregnancies and post-dated pregnancies.

Fetal complications	Group P (n=186)	Group T (n=288)	P value
Shoulder dystocia	4	5	0.7426
Asphyxia	8	6	0.1756
Meconium aspiration	20	16	0.0497
Perinatal death	4	2	0.2167
No complication	154	261	0.0151

DISCUSSION

The current study, conducted at the ANMMCH in Gaya, investigated the maternal as well as fetal outcomes of term and post-dated pregnancies in 474 patients. The majority of postdated women (44.7%) were middle-aged, whereas Parul et al discovered that 82% of women with post-dated pregnancies were between the ages of 18 and 29.[10] Similarly, Methal et al also unveiled that the majority of the women in their sample were aged 18 to 30 years.[11] In this study, the majority of postdated women (35.48% of them) had completed secondary school, as opposed to 24.73% who had just completed primary school.[12]

In terms of gravidity, almost 49.46% of postdated women were primigravida, which is lesser than Mahapatra et al who reported 72% primigravida patients.[13,14] This is similar to another study, which found 51.2% were multigravida.[15] Furthermore, only 45.16% of the postdated women in this sample were booked, and 14.8% had a prior history of postdated pregnancy, which is consistent with earlier research.[16,17]

Maternal problems occurred in 31.18% of postdated pregnancies, with postpartum hemorrhage being the most prevalent (18.2%). This is higher than the rate reported in another study, which revealed 12.7% incidence of postpartum hemorrhage.[18] Other problems included perineal tears (8%) and cervical tears (3.2%) had little higher incidence and postpartum infections (4.4%), and was comparable to the findings of Singh N et al.[19-21]

Fetal problems were detected in 17.2% of postdated pregnancy instances, including shoulder dystocia (2.1%), hypoxia (4.3%), and meconium aspiration (10.75%). These figures are lower than those published in another study, which indicated a 13.4% incidence of asphyxia.[17] The majority of fetuses in the current study had an APGAR score of more than 7, with only 4.3% scoring less than 3. The neonatal death rate was 2.1%, which is lesser than the 4-6% recorded in earlier studies.[22-24]

As majority of the studies have been done on post term pregnancies, this study's extensive assessments of comparison of term and postdated pregnancies give useful insights for healthcare providers to effectively treat and anticipate difficulties associated with all prolonged gestation more than 40 weeks. The findings call for improved prenatal care standards and may inform legislative reforms aimed at lowering the frequency of bad outcomes in postdated pregnancies, ultimately contributing to better healthcare practices and patient safety.

Furthermore, this study emphasizes the need for regular antenatal visits in preventing the switch to post-dated pregnancies. Consistent monitoring throughout these appointments enables healthcare practitioners to track fetal growth and maternal health, allowing for early intervention if concerns arise. Early discovery of potential problems allows for proactive management techniques such as dietary changes, lifestyle changes, and appropriate medical treatments, all of which can assist maintain a healthy pregnancy. Furthermore, regular check-ups promote a strong patient-provider relationship, ensuring that women receive individualized treatment and feel supported throughout their pregnancy. This continuous care paradigm not only aids in the early detection of high-risk pregnancies, but it also allows for the education of pregnant women on the necessity of living a healthy lifestyle and following medical recommendations.

Antenatal visits also help to identify and control risk factors that may lead to post-date pregnancies. Healthcare practitioners can make informed decisions about the need for interventions, including labour induction, by routinely examining maternal health factors such as blood pressure, glucose levels, and fetal position. Furthermore, these sessions provide an opportunity for women to discuss birth goals and prospective delivery options, preparing them for a variety of scenarios that may occur during labour. Educating women on the signals of labour and when to seek medical assistance can help to prevent extended pregnancies. Overall, the findings of the study demonstrate that frequent prenatal care is critical for lowering the risk of post-date pregnancies and enhancing mother and fetal outcomes.

CONCLUSION

The current study emphasizes the increased risks associated with postdated pregnancies, underlining the importance of close monitoring and prompt interventions. The data show that not only post term but all post-dated pregnancies have greater rates of maternal difficulties such postpartum haemorrhage, cervical tears, and infections, as well as fetal issues like shoulder dystocia, hypoxia, and meconium aspiration. The findings highlight the importance of adequate prenatal care and strategic planning for deliveries lasting more than 40 weeks in improving both maternal and newborn outcomes.

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