

## The Evaluation of Obstetric Outcome of Postdated Pregnancy

### Abstract:

**Background:** Postdated pregnancy is one of the commonest obstetric conditions. Pregnancy is called term when it lies between 37 weeks to 40 weeks from the last menstrual period. If the pregnancy exceeds 40 weeks it is called as postdated pregnancy.

**Methods:** From January to June 2022, researchers from the Research institute Dhaka Medical College and Hospital, carried out this prospective observational study. We surveyed 100 participants for this research. After carefully evaluating the woman and the fetus, induction of labor was conducted after the due date had passed. Intact membrane, cephalic presentation, singleton pregnancies, and a low Bishop score in post-dated pregnancies were also requirements for participation. Women with absolute contraindications to induction of labor, such as a contracted pelvis, placenta previa, unexplained vaginal hemorrhage, breech presentation, or a history of caesarean section, were not included in the analysis.

**Results:** During the study Sixty percent of the population is comprised of young adults ages 21 to 30. There were 42% in the oxytocin group, 38% in the ARM + oxytocin group, and 14% in the misoprostol group. There were 30% unsuccessful deliveries with oxytocin drip, 25% with ARM + Oxytocin drip, and 14% with misoprostol. The vast majority of births occurred naturally via the cervix, whereas around 33% required a caesarean section and 10% required the use of forceps. The fetal distress rate was 13%, while the cervix conditions were poor in 5%. 75% of the newborns were very fine.

**Conclusion:** Timely labor is closely connected with positive birth outcomes. It is critical to make a correct diagnosis of postdatism. With the right advice and constant monitoring from medical professionals, postpartum depression in mothers may be alleviated. Many hospitals around the country resort to caesarean sections to end post-dated pregnancies because of technological limitations in foetal monitoring and oxytocin titration. Inducing labor seems to be safe for both mother and child when a full-term cervix and favorable fetal presentation are present.

**Keywords:** medical induction, labour, postdated pregnancy

## Introduction

The evolution of obstetric outcomes in postdated pregnancies has been a subject of extensive research and clinical interest. Postdated pregnancy is a prevalent obstetric condition frequently encountered in clinical practice. Term pregnancy is defined as occurring between 37 and 40 weeks from the last menstrual period. When a pregnancy surpasses the 40-week mark, it is referred to as a postdated pregnancy. The incidence of post term pregnancy accounts for approximately 7% of all pregnancies. Understanding the changes in obstetric outcomes associated with postdated pregnancies is essential for effective management and decision-making in maternal care. <sup>1-3</sup>

Historically, postdated pregnancies have been linked to an increased risk of adverse maternal and fetal outcomes. Complications such as fetal macrosomia, meconium aspiration syndrome, fetal distress, operative vaginal or cesarean deliveries, and stillbirth have been reported at higher rates in postdated pregnancies compared to term pregnancies. The risk of placental insufficiency, umbilical cord accidents, and intrauterine growth restriction also appears to increase with prolonged gestation. <sup>4-6</sup>

However, with advances in obstetric care and improvements in monitoring techniques, the understanding and management of postdated pregnancies have evolved. Contemporary research suggests that the risk of adverse outcomes in postdated pregnancies may not be as significant as previously believed, and the association between prolonged gestation and adverse outcomes may be more complex. <sup>5-7</sup>

Recent studies have highlighted the importance of accurate gestational age assessment, as miscalculation of the due date can result in unnecessary interventions or undue concerns. Additionally, closer monitoring of fetal well-being through methods such as fetal movement counting, non-stress tests, and ultrasound evaluations has helped identify high-risk cases and facilitate timely intervention when needed. <sup>8</sup>

Advancements in induction techniques and improvements in the management of postdated pregnancies have also contributed to better obstetric outcomes. Induction of labor is commonly recommended in postdated pregnancies to mitigate the risks associated with prolonged gestation. However, the optimal timing and methods of induction remain subjects of ongoing research and clinical debate. <sup>9-10</sup>

This article aims to explore the evolution of obstetric outcomes in postdated pregnancies, considering both historical perspectives and recent advancements. By reviewing current evidence and trends, we aim to provide insights into the changing landscape of managing postdated pregnancies and its impact on maternal and fetal outcomes. Understanding the evolving understanding and management strategies in postdated pregnancies can assist healthcare providers in making informed decisions and optimizing care for women with prolonged gestation.

## **Objective**

To assess obstetric outcome of postdated pregnancy

## **Method**

This prospective observational study was conducted by researchers at the Research institute Dhaka Medical College and Hospital, between January 2022 and January 2023. One hundred patients were included in the study. Doctors decided to induce labor after the due date had passed following a thorough examination of the pregnant mother and her unborn child. Singleton pregnancies with a low Bishop score and an intact membrane were prioritized for admission after due dates had passed. Women who had absolute contraindications to induction of labor were excluded from the study. These included women who had a contracted pelvis, placenta previa, atypical vaginal bleeding, a non-head-down fetal position, or a previous caesarean section. The cervix was officially graded using Bishop's grading method in late pregnancies. In the first group, patients were treated only with the oxytocin drip method. Dosing must be individualized. The amount of oxytocin administered to each patient is determined by the results of a biologic test designed to stimulate labor. The use of this method requires close supervision by knowledgeable personnel at all times.

For women receiving misoprostol, 25 µg were administered in the posterior fornix of the vagina. The dose was repeated every 4 hours, until a pattern of at least 3 contractions every 10 minutes was obtained. The maximum dose was 200 µg. If this contraction pattern had not been reached by four hours after the administration of the eighth dose, induction was considered to have failed. After the ideal pattern of contractions was reached, misoprostol was no longer administered.

For the women in the oxytocin group, an intravenous infusion of 2 mU/min was used, which was doubled at 30-minute intervals until the appropriate contraction pattern was obtained. The infusion dose was increased to a maximum of 20 mU/min, at which point it was then maintained constant. If the contraction pattern had not been induced by the time that 15 IU of oxytocin had been infused, the induction was also considered to have failed. Even after the ideal pattern was reached, oxytocin flow was continued. In the case of women receiving dinoprostone, the prescribed regimen involved the administration of dinoprostone gel vaginally at a dosage of 1 mg. This dosage was repeated every 6 hours, up to a maximum of four doses.

People with a history of asthma, glaucoma, cardiac infarction, chorio-amnionitis, or ruptured membranes should not undergo induction with prostaglandins. To check for overstimulation, we regularly monitored the fetus's heart rate. The cervical score was recalculated after a further 4-hour delay. During the last stages of labor, the dose was stopped. If the cervix had not matured after 6 hours, the dose was administered again. The partograph was utilized even when the patient was in active labor. Statistical significance is calculated with the use of the chi-square test and the associated probability value.

## Results

In table-1 shows age distribution of the patients where most of the patients belong to 21-30 years age group, 60%. The following table is given below in detail:

**Table-1: Age distribution of the patients**

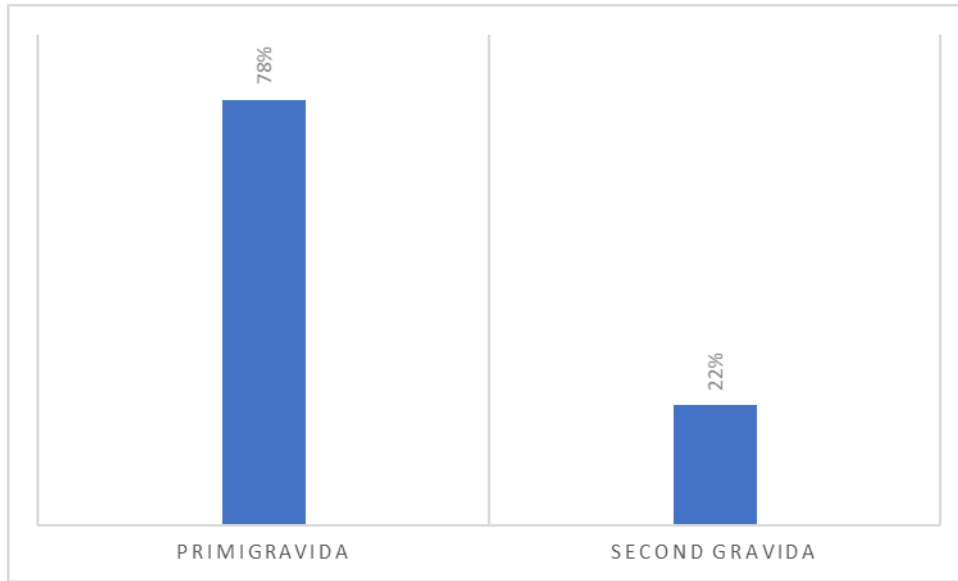
Age group	Percentage (%)
21-30 years	60%
31-40 years	40%

In table-2 shows demographic status of the patients where 42% just completed their secondary level of education followed by 43% patients' husband were farmer, 80% patients married in 13-17 years age. The following table is given below in detail:

**Table-2: Demographic status of the patients**

<b>Educational status</b>	<b>Percentage (%)</b>
Illiterate	9%
Primary	11%
Secondary	42%
SSC	25%
HSC	13%
<b>Husband occupation</b>	
Businessman	35%
Farmer	43%
Rickshaw puller	16.7%
Track driver	6.3%
<b>Income</b>	
10000-15000tk monthly	45.8 %
>150000 monthly	54.2%
<b>Age of marriage</b>	
13-17 years	80%
18-25 years	20%

Figure-1 shows gravida status of the patients where 78% were primigravida.



**Figure-1: Gravida status of the patients**

Table-3 shows Methods applied for induction in the post-dated pregnancy where 42% were in oxytocin drip followed by 38% were in ARM + Oxytocin drip, 14% were in misoprostol.

**Table-3: Methods applied for induction in the post-dated pregnancy**

Methods applied for induction in the post-dated pregnancy	Percentage (%)
Oxytocin drip	42%
ARM + Oxytocin drip	38%
Misoprostol	14%
Dinoprostone	8%

Table-4 shows Total number of cases failed after induction in the post-dated pregnancy in oxytocin drip 30% were failed cases followed by in ARM + Oxytocin drip it was 25%, in misoprostol it was 14%.

**Table-4: Total number of cases failed after induction in the post-dated pregnancy**

Methods	Percentage (%)
Oxytocin drip	30%
ARM + Oxytocin drip	25%
Misoprostol	14%

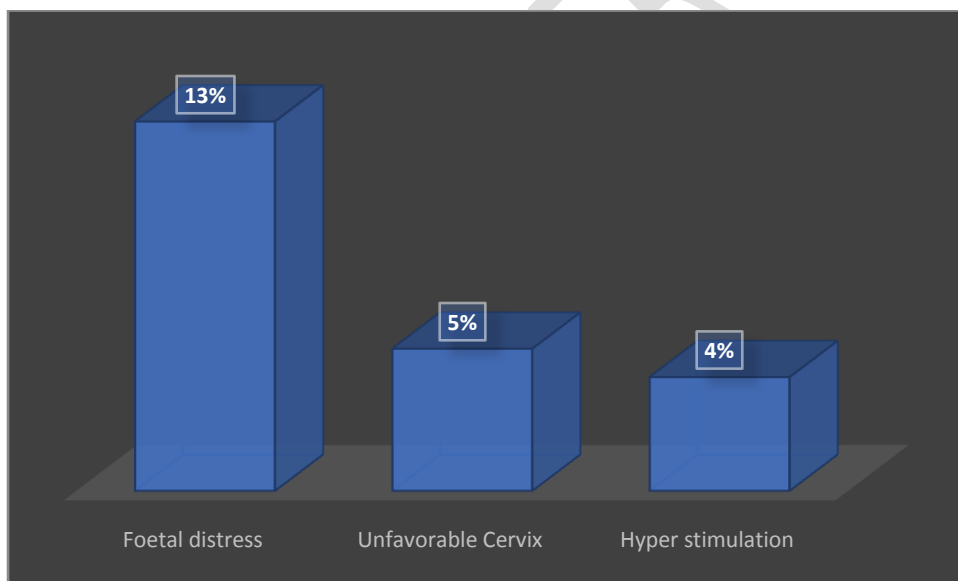
<b>Dinoprostone</b>	<b>0%</b>
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Table-5 shows Mode of delivery after induction in post-dated pregnancy where majority had Spontaneous vaginal delivery followed by 33% had Delivery by Caesarean section and 10% had Delivery with the aid of Forceps.

**Table-5: Mode of delivery after induction in post-dated pregnancy**

<b>Mode of delivery</b>	<b>Percentage (%)</b>
<b>Spontaneous vaginal delivery</b>	<b>47%</b>
<b>Delivery with the aid of Forceps</b>	<b>10%</b>
<b>Delivery with the aid of Ventouse</b>	<b>10%</b>
<b>Delivery by Caesarean section</b>	<b>33%</b>

Figure-2 shows Indications of delivery by Caesarean section where 13% had foetal distress and 5% had unfavorable cervix.



**Figure-2: Indications of delivery by Caesarean section**

Table-6 shows Foetal outcome in the post-dated pregnancy after induction where 75% were healthy baby and 20% were distress baby.

**Table-6: Foetal outcome in the post-dated pregnancy after induction**

<b>Foetal outcome in the post-dated pregnancy after induction</b>	<b>Percentage (%)</b>
<b>Healthy baby</b>	<b>75%</b>
<b>Distress baby</b>	<b>20%</b>
<b>Still birth (IUD)</b>	<b>5%</b>

Table 7 shows Maternal complications, where 4% had postpartum haemorrhage. Followed by 3% had perineal tear and 1% had cervical tear.

**Table 7: Maternal complications.**

<b>Maternal complication</b>	<b>Percentage (%)</b>
Postpartum haemorrhage	4
Perineal tear	3
Cervical tear	1
Shoulder dystocia	1

Table-8 shows Fetal complications. Where 5% had Meconium aspiration syndrome. Followed by 4% had Respiratory distress syndrome and 3% had Macrosomia.

**Table-8: Fetal complications.**

<b>Fetal complication</b>	<b>Percentage (%)</b>
Meconium aspiration syndrome	5
Respiratory distress syndrome	4
Macrosomia	3
Hyperbilirubinemia	1
Neonatal death	2

## **Discussion**

The obstetric outcomes of postdated pregnancies have been a subject of extensive research and discussion in the field of maternal-fetal medicine. While historically there were concerns about increased risks and adverse outcomes associated with prolonged gestation, recent studies have shed new light on the topic, presenting a more nuanced understanding of obstetric outcomes in postdated pregnancies.

One of the primary concerns in postdated pregnancies is the increased risk of fetal macrosomia, which refers to a larger-than-average birth weight. However, recent evidence suggests that the association between postdated pregnancies and fetal macrosomia may not be as strong as previously thought. Studies have shown that accurate gestational age assessment plays a crucial role in differentiating between true macrosomia and babies who are large for gestational age due to prolonged gestation. With appropriate monitoring and timely intervention, the risk of complications associated with macrosomia can be minimized.<sup>11</sup>

The risk of fetal distress and meconium aspiration syndrome (MAS) is also often associated with postdated pregnancies. However, advancements in fetal monitoring techniques have improved the detection and management of these complications. Continuous electronic fetal monitoring during labor, along with other methods such as fetal scalp pH sampling and ultrasound evaluation of amniotic fluid volume, help identify signs of fetal distress and guide timely interventions such as cesarean delivery or instrumental delivery.<sup>12</sup>

Another important aspect of the obstetric outcome in postdated pregnancies is the risk of stillbirth. Historically, postdated pregnancies were thought to carry an increased risk of stillbirth. However, recent population-based studies have suggested that the overall risk of stillbirth in postdated pregnancies is relatively low and that careful monitoring and timely intervention can further reduce this risk. Close surveillance, including fetal movement counting and non-stress tests, can help identify signs of fetal compromise and prompt appropriate action.

It is worth noting that while advances in obstetric care have contributed to improved outcomes in postdated pregnancies, there is still a need for further research to better understand the long-term outcomes and potential risks associated with prolonged gestation.

The understanding of obstetric outcomes in postdated pregnancies has evolved over time. Although there are still concerns and increased risks associated with prolonged gestation, advancements in prenatal monitoring, accurate gestational age assessment, and timely interventions have helped mitigate some of these risks. Close surveillance, appropriate timing of induction, and individualized care remain essential in optimizing obstetric outcomes in postdated pregnancies. Continued research in this field will further enhance our understanding and management strategies, ultimately improving outcomes for both mothers and babies.

One randomized controlled trial compared expectant management versus induction of labor in post-term nulliparous women. In our study, 4% had postpartum haemorrhage. Followed by 3% had perineal tear and 1% had cervical tear. The study found no significant difference in adverse perinatal outcomes between the two groups, suggesting that expectant management may be a safe option in selected cases.<sup>12</sup>

Whereas other population-based study analyzed a large cohort of post-term pregnancies and found that the risk of adverse outcomes, including stillbirth and neonatal morbidity, increased after 42 weeks of gestation. The findings emphasized the importance of careful monitoring and timely intervention in post-term pregnancies.<sup>13</sup>

This population-based study compared induced labor with expectant management in term pregnancies, including post-term pregnancies. The results demonstrated that induction of labor was associated with a lower risk of perinatal mortality and lower rates of neonatal complications, supporting the potential benefits of induction in post-term pregnancies.

Another prospective cohort study aimed to develop a stillbirth risk prediction model for post-term pregnancies. The findings identified several risk factors, such as maternal age, body mass index, and fetal growth restriction, that could aid in identifying high-risk cases and informing clinical decision-making.<sup>14</sup>

## Conclusion

Early labor onset is a predictor of positive perinatal outcomes. It is crucial to confirm a postdate diagnosis. Maternal anxiety and side effects from postdate therapy may be lessened with proper supervision and consistent monitoring. Due to the limitations of the foetal monitoring system and oxytocin titration, caesarean section is routinely used to terminate the majority of post-dated pregnancies at numerous facilities throughout the country. The rate of caesarean sections might be reduced with the introduction of state-of-the-art infusion and foetal monitoring systems, such as the automated infusion pump, cardiotocography, foetal scalp blood pH study, etc. If the woman's cervix has developed and the baby is properly positioned in the birth canal, inducing labor poses little risk to either the mother or the baby. Induction of labor is recommended for women with uncomplicated pregnancies, whereas consideration of LSCS is warranted for those with complications. Correct evaluation of risk factors and identification of a full-term pregnancy may help reduce the likelihood of a negative outcome.

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