

# Feto-Maternal Outcomes of Medical Induction of Labour in Post-Dated Pregnancies

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## ABSTRACT

**Objective:** To determine the frequency of feto-maternal outcomes of medical induction of labor in post-dated pregnancies.

**Patients and Methods:** A total number 216 pregnant females with post-dated pregnancy were included in this study. Data regarding baseline study variables such as age, and BMI was collected for each patient. In all patients, medical induction of labor was done. Induction of labor was done using amniotomy, oxytocin or prostaglandins were given as per-local protocol. Feto-maternal outcomes in-terms of perineal lacerations, cesarean section, PPH, APGAR and NICU admission were measured.

**Results:** Mean age of patients included in this study was 29.10±4.78 years. Mean body mass index (BMI) of patients was 25.82±5.04 kg/m<sup>2</sup>. Vaginal delivery was done in 142 (65.74%) and C-section was done in 74 (34.26%) patients. Perineal laceration was occurred in 118 (54.63%) patients, PPH in 06 (2.78%), APGAR score < 7 in 08 (3.70%) and 17 (7.87%) neonates were admitted it NICU.

**Conclusion:** Medical induction of labor in post-dated pregnancies is a valuable option. It is associated with minimal feto-maternal complications in these patients.

**Keywords:** Post-dated pregnancies, feto-maternal outcomes, induction of labour.

## INTRODUCTION

WHO and the International Federation of Gynecology and Obstetrics have standardized the phrases "postdate," "post-term," "post-maturity," and "prolonged pregnancy" to describe pregnancies that continue beyond their expected dates (expected date of delivery). According to the World Health Organization (WHO), a post-term pregnancy (PTP) is one that lasts longer than 294 days, which is equivalent to 42 weeks of gestation.<sup>1</sup> The prevalence of PTP has been estimated to be at around 7 percent.<sup>2</sup>

It is possible to arrive at different estimates of the prevalence of PTP depending on whether the calculation is performed solely on the basis of the patient's medical history and the clinical examination, or whether an early pregnancy ultrasound examination is performed in order to determine the gestational age.<sup>3,4</sup>

After 41 weeks and 0 days have passed, the ACOG suggests that routine induction or expectant management be offered to the patient.<sup>5</sup> In order to reduce the likelihood of adverse health outcomes associated with a protracted pregnancy, the British Guidelines recommend that women with uncomplicated pregnancies be given induction of labor (IOL) between 41 and 42 weeks of pregnancy.<sup>6</sup> In order to reduce the risk of difficulties for the unborn child, the rules in Germany call for the IOL to be offered after 41 weeks and 0 days of pregnancy have passed, and they recommend that it be performed no later than 41 weeks and 3 days.<sup>7</sup>

The aim of proposed study is to determine the feto-maternal outcomes in medical induction of labour in post-dated pregnancies. As still there are concerns either medical induction should be adopted in post-dated pregnancies or not.

## MATERIAL AND METHODS

A total of 216 pregnant females who had post-dated pregnancy were included from August-2021 to March-2022. Females with singleton pregnancy with cephalic presentation, and gestational age ≥42 weeks were included. While females who were planned for caesarean section, known cases of fetal growth restriction, patients with pre-eclampsia or twin pregnancy were excluded.

A written consent was taken from each patient. Data regarding baseline study variables such as age, and BMI was collected for each patient. In all patients, medical induction of labor was done. Induction of labor was done using Amniotomy, oxytocin or prostaglandins were given as per-local protocol. Feto-maternal outcomes were measured in terms of perineal lacerations, post-

partum hemorrhage, APGAR score <7 at 5 minutes, and need for NICU admission.

## RESULTS

Mean age was 29.10±4.78 years. Mean body mass index (BMI) of patients was 25.82±5.04 kg/m<sup>2</sup>. Vaginal delivery was done in 142 (65.74%) and C-section was done in 74 (34.26%) patients.

Regarding complications, Perineal laceration was found in 118 (54.63%) patients. PPH was found in 06 (2.78%) patients. APGAR score < 7 was found in 08 (3.70%) patients (Figure 11). Out of 216, 17 (7.87%) neonates were admitted it NICU.

Table 1. Frequency of Complications.

Perineal laceration	118 (54.63%)
Post-partum Hemorrhage (PPH)	06 (2.78%)
APGAR <7	08 (3.70%)
Admission in NICU	17 (7.87%)

## DISCUSSION

Pregnancy that lasts longer than 42 weeks or 294 days from the first day of the woman's last menstrual period is referred to as post-term pregnancy, also known as protracted pregnancy. An increased risk of newborn morbidity and mortality is associated with this particular pregnancy type.<sup>8</sup> As a result, post-term pregnancy is regarded as a high-risk condition that necessitates specialized monitoring and eventual labor induction. A relatively small number of unidentified growth-restricted fetuses who are at risk for a poor postnatal outcome are mostly to blame for this.<sup>9,10</sup>

Because to assessments of gestational age based on first trimester ultrasound, the incidence of post-term pregnancy has dropped to between 3 and 5 percent or even lower in the modern time.<sup>11</sup> It is generally accepted, notwithstanding the lack of clarity in the relevant research, that the risk of a negative perinatal outcome rises gradually rather than suddenly beginning at 42 weeks of gestation rather than earlier in the pregnancy.<sup>12</sup> A policy of labor induction at or beyond 41 completed weeks is associated with significantly fewer perinatal deaths, according to the findings of a Cochrane review on labor induction for improving birth outcomes. This is true despite the fact that the risk of perinatal death is relatively low in absolute terms (22 trials, 9383 participants, RR 0.31 [95 percent CI 0.12-0.88]).<sup>12</sup> This study came to the conclusion that inducing labor does not increase the chance of having a caesarean section in pregnant women who have reached 41 or 42 full weeks of their pregnancy.<sup>13</sup> Only a small fraction of the trials that were considered had an intervention group that

began having contractions at 41 weeks of gestation or later. Previous research do not indicate whether or not labor was always induced at 41 weeks of gestation. In addition, expectant management in the control groups continued for a considerable amount of time beyond 42 weeks in the majority of the trials.<sup>14</sup> Recent observational studies have also shown that, in comparison to labor that occurs on its own, inducing labor artificially increases the risk of complications for both the mother and the baby to the same degree as does inducing labor for a medical reason.<sup>15</sup> A recent meta-analysis demonstrated that inducing labor on the basis of maternal or fetal indication in women with intact membranes lowers the risk of having a caesarean section. However, the study did not answer the question of whether inducing labor at 41 weeks in obstetrically low risk women gives better perinatal outcomes and maternal outcomes than expectant management until 42 weeks.<sup>16</sup>

As a result of the uncertainty that surrounds the treatment of (imminent) post-term pregnancy, which results in practice heterogeneity, there is no consensus regarding the optimal timing to induce labor. In the Netherlands, the policy for low-risk pregnancies at or past the 41st week of pregnancy varies from expectant management up to 42 weeks without additional surveillance to cardiotocography (CTG) and ultrasound surveillance once or twice a week in secondary care from 41 weeks on, and labor induction at 42 weeks, or labor induction beginning at 41 weeks. One of these options is known as expectant management up to 42 weeks without additional surveillance.<sup>17</sup>

The purpose of this study was to investigate the fetomaternal outcomes of post-dated pregnancies in patients who had elective labor induced. The current study included 216 different ladies, all of whom were female, and the average age of these women was 28 years old. Kandalgaonkar et al. obtained findings that were comparable to these. Paliulyt V et al. conducted research on the age distribution of pregnant women after 41 weeks of gestation and found that there was no association between age and pregnancy.<sup>18</sup>

A study by Thangarajah et al. determined the fetomaternal outcomes in post-dated pregnancies in whom medical induction of labor was done, they reported cesarean section rate of 33.8%, perineal lacerations in 61.7% patients, post-partum hemorrhage in 2.8% patients, APGAR score <7 in 2.3% patients, and need for NICU admissions in 6.8% neonates.<sup>19</sup>

In this particular study, there was a rate of cesarean birth of 34%. Our findings are consistent with those that were reported by Kandalgaonkar et al., who found that the majority of patients (78.12 percent) gave birth through vaginal delivery. Of those patients, 45 (46.9 percent) gave birth spontaneously, and 35 (36.5 percent) gave birth vaginally after a successful induction.<sup>18</sup>

According to research carried out by Caughey AB et al., the majority of patients (68 percent) gave birth via spontaneous vaginal delivery, while the remaining patients required either instrumental delivery (17 percent) or primary caesarean section (14 percent). According to the findings of a study by Shinge N and colleagues, the majority of patients (53.7 percent) delivered their babies through spontaneous vaginal delivery, while 9.5 percent of patients required instrumental delivery, and 37 percent of patients required caesarean section as their mode of delivery.<sup>20,21</sup>

Because of the increased risk of morbidity for both the mother and the baby that comes with a protracted pregnancy, it is imperative that pregnancies not be permitted to go past their due dates. The patient has to get counseling regarding the possibility of having a longer gestational age. In order to reduce the risk of unfavorable newborn outcomes, induction of labor should be administered to these mothers before they reach 42 weeks of gestation. The variables smoking, obesity, diabetes, syphilis, and difficult labor were not included in our research since we did not

have enough information on them. These factors are known to be connected with fetal and neonatal mortality. Additional research that takes into account the aforementioned considerations will be helpful to policymakers.

## CONCLUSION

Medical induction of labor in post-dated pregnancies is a valuable option. It is associated with minimal fetomaternal complications in these patients.

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