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Original Research Article | **Obstetrics and Gynaecology**

Outcome of Medical Induction of Labour in Postdated Pregnancy

Dr. Khaleda Akter Khanam[1*], Dr. Shohana Shikder[2], Dr. Kamrun Nahar[3], Dr. Md. Quamruzzaman[4], Dr. S. M. Shahnewaj[5], Dr. S. M. Masudur Rahman[6]

[1]Junior Consultant (Gynae & Obs), Upazila Health Complex, Kabirhat, Noakhali, Bangladesh
[2]Junior Consultant (Gynae & Obs), Upazila Health Complex, Araihazar, Narayangonj, Bangladesh
[3]Assistant Professor, (Gynae & Obs), Abdul Malek Ukil Medical College, Noakhali, Bangladesh
[4]Register Surgery, 250 Bed General Hospital, Noakhali, Bangladesh
[5]Senior Consultant (Orthopedic Surgery), 250 Bed District Hospital, Bagerhat, Bangladesh
[6]Assistant Professor, (Microbiology), Khulna Medical College, Khulna, Bangladesh

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***Corresponding author:** Dr. Khaleda Akter Khanam
Junior Consultant (Gynae & Obs), Upazila Health Complex, Kabirhat, Noakhali, Bangladesh

Abstract

Background*:** WHO and the International Federation of Gynecology and Obstetrics recognise the words "post maturity," "post term," "postdate," and "prolongedpregnancy" to describe pregnancies that continue beyond their intended end points (expected date of delivery). As much as 10% of pregnancies become more complicated due to a pregnancy that lasts longer than expected, and this poses risks to both the mother and the unborn child. ***Objective*:** To study of medical induction of labour in post-dated pregnancy. ***Methods: This prospective observational study was conducted in the Department of Obstetrics and Gynecology, Abdul Malek Ukil Medical College, Noakhali, Bangladesh from January to June 2022. 100 patients included in our study. Labour induction in post-dated pregnancy was performed only after appropriate assessment of the mother and foetus. The inclusion criteria were intact membrane, cephalic presentation, singleton pregnancies, low Bishop score in post-dated pregnancies. Absolute contraindications to induction of labour include contracted pelvis, placenta previa, unexplained vaginal bleeding, presentation other than head and previous caesarean section were excluded from the study. This study shows that the main method was oxytocin drip and second method was ARM+oxytocin in drip, some cases induced by using oral prostaglandin and very few cases induced by intra cervical prostaglandin. ***Results*:** During the study 21-31 years age group, 60%. 42% were in oxytocin drip followed by 38% were in ARM + Oxytocin drip, 14% were in misoprostol in oxytocin drip 30% were failed cases followed by in ARM + Oxytocin drip it was 25%, in misoprostol it was 14%. Majority had Spontaneous vaginal delivery followed by 15% had Delivery by Caesarean section and 10% had Delivery with the aid of Forceps. 13% had foetal distress and 5% had unfavorable cervix. 75% were healthy baby and 20% were distress baby. ***Conclusion*:** Successful birth outcomes are strongly correlated with labor starting at the optimal time. An accurate diagnosis of postdatism is crucial. Mothers' worries and issues related to postdatism may be reduced with the help of sound guidance and close observation from healthcare providers. Due to technical constraints in foetal monitoring and oxytocin titration, caesarean section is often used to terminate most post-dated pregnancies in various hospitals throughout the nation. When a mature cervix and optimal fetal presentation are present, inducing labor seems to be safe for both the woman and the baby.

Keywords: Medical induction, labour, postdated pregnancy.

INTRODUCTION

The World Health Organization and the International Federation of Gynecology and Obstetrics all recognize the words "post maturity," "post term," "postdate," and "prolonged pregnancy" to describe pregnancies that go longer than intended (expected date of delivery). Up to 10% of pregnancies become complicated due to a prolonged pregnancy, which increases the danger to both mother and child [1-3]. A postdate pregnancy may be induced by using medical interventions to bring on labor. When the health of the mother or the developing fetus is in jeopardy within the uterus, this is now standard obstetric procedure. At any point after the age of viability, inducing labor becomes an option. The primary issue is developing a cost-effective, user-friendly, and safe method of terminating a pregnancy that has already occurred. Different methods of estimating gestational age, such as relying

only on a patient's medical history and a physical exam, or using an early pregnancy ultrasound scan, result in different rates of postterm pregnancy [4-6]. The cervix's consistency, compliance, and conformation all play a role in whether or not induction is successful in a late-term pregnancy. It is very advised that the cervix be carefully examined before to induction. Birth complications are more common in post-dated pregnancies with a low Bishop's score, including ineffective induction, extended labor, instrumental delivery, and caesarean section [7]. Post-dated pregnancy can only be diagnosed and treated once a reasonable estimate of the gestational age has been made. Using the angles rule, the percentage of pregnancies that result in a delivery at or after 42 weeks is 14% [8]. The best medical method for inducing labor is the intravenous injection of a very diluted oxytocin solution. The rhl4hmic pattern of uterine motility is amplified by oxytocin. Cervical compliance and dilatation may be improved by local dinoprostone application. In certain patients with high Bishop Scores, amniotomy may be an efficient method of inducing labor. Myometrial contractions are stronger and last longer once amniotic fluid is released, and the contraction cascade is accelerated. Misoprostol has a number of potential benefits, including its low cost, low risk of side effects, and dual action in cervical ripening and labor induction [9]. Post-date pregnancies are associated with an increased risk of complications for the mother and the developing baby. Pregnancies that go beyond the due date are associated with an increased risk of complications for both mother and child, including oligohydramnios, meconium-stained amniotic fluid, macrosomia, fetal post maturity syndrome, and cesarean birth. The increased risk of perinatal morbidity and death associated with a prolonged pregnancy has always been recognized [10]. The dangers to the mother from a late pregnancy are often overlooked. The rate of cesarean section doubles (9-14% vs. 7% at term) and the rate of labor dystocia increases (9-12% vs. 2-7% at term), while the rate of severe perineal injury (3rd and 4th degree perineal lacerations) due to macrosomia increases (3.3% vs. 2.6% at term) and operative vaginal delivery also rises. The latter is linked to increased dangers of endometritis, bleeding, and thromboembolic illness [13, 14]. Induction is more common in postdated pregnancies because to the increased danger to both the mother and the unborn child. There are a number of guidelines for caring for a pregnant woman after her due date has passed, but no one approach is universally accepted as the best practice.

OBJECTIVE

To asses outcome of medical induction of labour in postdated pregnancy.

METHOD

From January to June 2022, researchers from the Department of Obstetrics and Gynecology at Abdul Malek Ukil Medical College, Noakhali, Bangladesh, performed this prospective observational study. The research comprised a total of 100 patients. After carefully evaluating the woman and fetus, doctors induced labor after the due date had passed. Intact membrane, cephalic presentation, singleton gestations, and a low Bishop score in post-dated pregnancies were all requirements for admission. Women with absolute contraindications to induction of labor such as a constricted pelvis, placenta previa, abnormal vaginal hemorrhage, a fetal position other than head-down, or a prior caesarean section were not included in the analysis. In late pregnancies, the cervix was formally scored using Bishop's grading system before induction. The first group had the oxytocin drip technique used exclusively. Individualization of dosing is required. Delivery and maintenance of labor may be aided by administering oxytocin, the dosage of which is established by a biologic test and tailored to the individual patient. When using this procedure, constant monitoring by trained staff is essential. The recommended starting dose of oxytocin is 1 ml (10 units oxytocin to I L of 5% dextrose in water [1 mU/ mL]), with further increases of oxytocin by 2 mU at 15-minute intervals. No further oxytocin should be given until the external monitor shows that contractions last between 40 and 60 seconds every 2.5 to 4 minutes. When signs of over stimulation or fetal discomfort are detected, oxytocin infusion is stopped. You may take misoprostol orally or vaginally every 4-6 hours for a total of four doses, with the 100 pg pills being effective but the 200 pg tablets being more long-lasting. Dinoprostone is prefilled into a single-use syringe with 0.5 mg of PGE2 in 2.5 mL of a colloidal silicon dioxide in triacetin gel with a high viscosity. The dinoprostone ripening time for the cervix is typically 12 hours, after which oxytocin induction may begin. Induction with prostaglandins should be avoided in individuals with a history of asthma, glaucoma, or myocardial infarction, chorio-amnionitis, or ruptured membranes [10]. We kept an eye on the fetus and its heart rate to look for signs of over stimulation. Following a further 4-hour wait, the cervical score was reevaluated. No more dosage was given during active labor. However, the dosage was repeated every 6 hours if the cervix was still not mature after the first 6 hours. Once the patient entered active labor, the partograph continued to be used. The chi-square test and the corresponding probability value are used to determine statistical significance.

RESULTS

In Table-1 shows age distribution of the patients where most of the patients belong to 21-31 years age group, 60%. The following table is given below in detail:

Table-1: Age distribution of the patients

Age	Percent
21-31 years	60
32-42 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 and 78% got 1st pregnant by 14-18 years old. The following table is given below in detail:

Table-2: Demographic status of the patients

Educational status	Percentage (%)
Illiterate	9%
Primary	11%
Secondary	42%
SSC	25%
HSC	13%
Husband occupation	
Businessman	35%
Farmer	43%
Rickshaw puller	16.7%
Track driver	6.3%
Income	
10000-15000tk monthly	45.8 %
>150000 monthly	54.2%
Age of marriage	
13-17 years	80%
18-25 years	20%
Living area	
Rural	65%
Urban	35%

Figure-1 shows gravida status of the patients where 65% were primigravida.

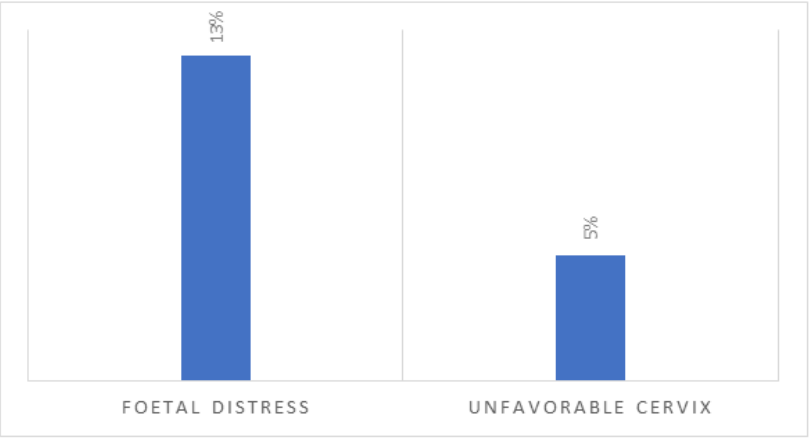

Figure-1: Gravida status of the patients

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 case 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 case failed after induction in the post-dated pregnancy

Methods	Percentage (%)
Oxytocin drip	30%
ARM + Oxytocin drip	25%
Misoprostol	14%
Dinoprostone	0%

Table-5 shows Mode of delivery after induction in post-dated pregnancy where majority had Spontaneous vaginal delivery followed by 15% 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

Mode of delivery	Percentage (%)
Spontaneous vaginal delivery	**65%**
Delivery with the aid of Forceps	**10%**
Delivery with the aid of Ventouse	**10%**
Delivery by Caesarean section	**15%**

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

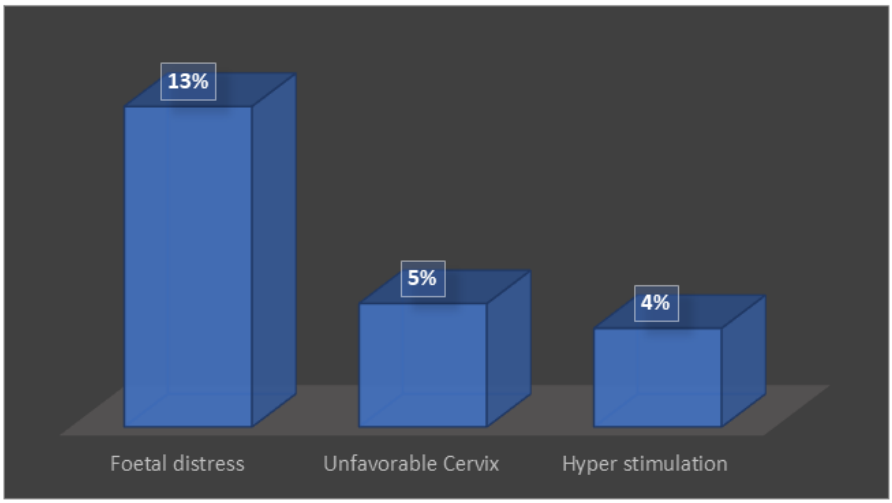

Figure-2: Indications of delivery by Caesarean section

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

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

DISCUSSION

Based on the results of this research, oxytocin drip was the most common approach, followed by ARM+oxytocin drip, oral prostaglandin, and intracervical prostaglandin. Even though prostaglandins are quite efficient in inducing labor in a late pregnancy, most obstetricians still think that amniotomy and intravenous oxytocin is the procedure of choice for regular induction of labor due to its effectiveness and safety. The vast majority of participants in our research were under the age of 30. This group had a mean age of 24.69 years. They ranged in age from 21 to 42. This is almost entirely an urban phenomenon, however early adolescent moms and grand multiparas account for a disproportionate share of the reproductive mothers in

rural places. Similar findings were reported by Alexander J *et al*., [12], with the exception that the majority of patients in both groups were between the ages of 20 and 30. The mean gestational age for groups 1 and 2 was 24.45.3 years. Stillbirth is more common in women whose maternal age is advanced, and the risk is highest between weeks 37 and 41 of pregnancy [15]. Primigravida induction rates have been shown to be on the rise across all comparator groups. While it progressively decreases by 60% in Dr. S. Jahan's research, 50% in Dr. Md. Zafirul Hassan's study, and 45% in my own study [11], it is gradually dropping by 45% in multigravida.

Misoprostol had the lowest success rate (14%) compared to the other three methods (30%): oxytocin drip, ARM Plus oxytocin drip, and misoprostol alone. According to the results of this research, using both oxytocin and ARM together is more effective than using oxytocin alone. Therefore, if the cervix is favorable, the combined ARM and oxytocin drip approach may be employed to induce labor in a postdated pregnancy [15]. However, Shepherd *et al*., [16] discovered that local prostaglandin is easy, safe, and very agreeable to the patient, leading to a significant drop in the rate of caesarean sections performed because of unsuccessful inductions. Seventy percent of these women gave birth naturally while fourteen percent required medical assistance. Forceps accounts for 6%, whereas Ventouse accounts for 8%. A caesarean section was performed in Dr. Md. Zafirul Hassan's research, but only 26.15 percent of women [17]. Almost all (85%) mothers gave birth vaginally, whereas 15% gave birth through caesarean section, and 10% used forceps. According to research by Md. Zafnl Hassan [17], uterine inactivity is the leading reason for cesarean sections in over half of all cases (47.06 percent). It's a known truth that the patient with cervical dystocia would have a much longer labor, complete with all the squealing that may have happened. Therefore, there is a corresponding rise in the number of cesarean sections. The outcome for the fetus was positive in general. There were 70% successful deliveries of healthy newborns. After 5 minutes of standard resuscitation, 26% of newborns in distress were found to be doing well. In most instances, the Apgar Score was about 10, and 4% of births ended in a stillbirth owing to intrauterine foetal death (IUD). Labor induction for women with post-dated pregnancies has been linked to lower rates of perinatal mortality and cesarean section, according to a recent systematic analysis [18].

CONCLUSION

The prompt commencement of labour is a key factor of perinatal outcome. Confirmation of diagnosis of postdatism is highly critical. In treatment of postdatism a thorough guidance and regular monitoring may minimize maternal concern and adverse effects. It is a normal practice in several centers in our nation to terminate most of the post-dated pregnancy by caesarean section due to limits of foetal monitoring system and oxytocin titration. If we would have contemporary facilities regarding infusion and foetal monitoring system like automated infusion pump, cardiotocography, foetal scalp blood pH study etc. Then caesarean section incidence might be lowered. Induction of labour in the context of a mature cervix and good foetal presentation seems to offer minimal danger to mother or foetus. Women with straightforward pregnancies should be given induction of labour, whereas women with any complicating conditions LSCS should be explored. The bad result may be decreased by making correct gestational age and diagnosis of beyond term gestation as well as assessment and treatment of risk factors.

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