Original Article

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Outcome of Medical Induction of Labour in Postdated Pregnancy at IAHS, Chattogram

Nasrin Ferdous[1*] Badrun Nahar[2] Syeda Razia Karim[2] Mafruha Khanam Porag[3]

Abstract

Background: WHO and the International Federation of Gynecology and Obstetrics recognise the words "Post maturity," "Post term," "Postdate" and "Prolonged pregnancy" 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. The purpose of the study is to observe of medical induction of labour in post-dated pregnancy.

Materials and methods: This prospective observational study was conducted in the Department of Obstetrics and Gynecology, IAHS, USTC, Chattogram, Bangladesh, from January to June 2022. 120 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 gxytocin drip and second method was ARM+ oxytocin in drip, some cases induced by using oral prostaglandin and very few cases induced by vaginal prostaglandin.

Results: During the study 21-31 years age group , 60.6% , 41.6% were in oxytonin drip followed by 38.3% were in ARM + Oxytonin drip, 14.1% were in misoprostol in oxytocin drip 30% were failed cases followed by in ARM + Oxytocin drip it was 25%, in misoprostol it was 14.2%. Majority had Spontaneous vaginal delivery followed by 15% had Delivery by Caesarean section and 10% had Delivery with the aid of Forceps, 13.3% had foetal distress and 5% had unfavourable 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 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 after used to terminate most post-dated pregnancies in various hospitals throughout the nation. When a mature a mature cervix and optimal fetal presentation are present, including lobor seems to be safe for both the woman and the baby.

Key words: Labour; Medical induction; Postdated pregnancy.

1. Associate Professor of Obstetrics & Gynaecology
Institute of Applied Health Sciences (IAHS) Chattogram.
2. Assistant Professor of Obstetrics & Gynaecology
Institute of Applied Health Sciences (IAHS) Chattogram.
3. Professor of Obstetrics & Gynaecology
Institute of Applied Health Sciences (IAHS) Chattogram.

***Correspondence: Dr. Nasrin Ferdous**
Cell : 01712 05 65 88
E-mail: nasrinferdous71@gmail.com

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Introduction

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. 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] Although a few studies showed no differences in maternal and fetal outcomes when IOL has been performed expert opinions vary concerning this issue.[4,5] In a recently published review including a meta-analysis of trials analyzing the outcome of IOL in postterm pregnancies the authors concluded that IOL reduces the risk of cesarean sections in case of intact membranes.[6] Others who have published studies concerning this issue, reported about

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increasing cesarean section rates when IOL is performed.[7,8] Additionally, maternal and neonatal outcomes concerning IOL were discussed controversially as well. Most studies showed no differences in maternal outcomes such as laceration or hemorrhage when IOL has been performed.[4,9-11] In another study the authors concluded that the maternal outcome could be impacted by IOL, such as a trend towards decreased postpartum hemorrhage.[5] Different methods of estimating gestational age, such as relyingonly on a patient's medical history and a physical exam or using an early pregnancy ultrasound scan, result in different rates of postterm pregnancy.[12-14] 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.[15] 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%.[16] The best medical method for inducing labor is the intravenous injection of a very diluted oxytocin solution. 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.[17] 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.[18] The latter is linked to increased dangers of endometritis, bleeding, and thromboembolic illness.[19,20] Induction is more common in postdated pregnancies because to the increased danger to both the mother and the unbom 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. The purpose of the study is to observe of medical induction of labour in post-dated pregnancy.

Materials and methods

During the period from January to June 2022, researchers from the Department of Obstetrics and Gynecology at Institute of Applied Health Sciences (IAHS) Chattogram performed this prospective observational study. The research comprised a total of 120 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. The dinoprostone ripening time for the cervix is typically 12 hours, after which oxytocin induction may begin. This induction with prostaglandins should be avoided in individuals with a history of asthma, glaucoma, or myocardial infarction, chorio-amnionitis, or ruptured membranes.[18] 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 collected data, were checked were exported to SPSS windows version 24 for further analysis. Descriptive statistics were carried out using simple frequency tables, proportions and summary measures. The chi-square test and the corresponding probability value are used to determine statistical significance. Necessary permission was take before commence the study from proper authorities.

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Results

In Table I shows age distribution of the patients where most of the patients belong to 21-31 years age group, 66.6%. In Table I shows demographic status of the patients where 41.6% just completed their secondary level of education followed by 43.3% patients husband were farmer, 80% patients married in 13-17 years age and 78% got 1 pregnant by 14-18 years old. Table I shows gravida status of the patients where 65% were primigravida.

Table I Demographic status of the patients

Variables	Number	Percentage
Age		
21-30	80	66.6
31-40	40	33.4
Educational status		
Illiterate	11	9.1%
Primary	11	10.8%
Secondary	50	41.6%
SSC	30	25%
HSC	16	13.3%
Husband occupation		
Businessman	42	35%
Farmer	52	43.3%
Rickshaw Puller	19	15.8
Truck Driver	7	5.9%
Income		
10000-15000 tk monthly	55	45.8%
>150000 monthly	65	54.2%
Age of Marriage		
13-17	96	80%
18-24	24	20%
Living Area		
Rural	78	65%
Urban	42	35%
Gravida status		
Foetaldistress	15	12.5%
Unfavorable cervix	07	5.5%

Table II Methods applied for induction in the post-dated pregnancy

Methods applied for induction in the post-dated pregnancy	Number	Percentage (%)
Oxytocindrip	50	41.6%
ARM+Oxytocindrip	46	38.3%
Misoprostol	17	14.1%

Table II shows Methods applied for induction in the post-dated pregnancy where 41.6% were in oxytocin drip followed by 38.3% were in ARM + Oxytocin drip. 14.1% were in misoprostol.

Table III Total number of case failed after induction, mode of delivery and indications of delivery by caesarean section

Case failed after induction	Number	Percentage (%)
Oxytocin drip	36	30%
ARM-Oxytocindrip	30	25%
Misoprostol	17	14.2%
Dinoprostone	0	0%
Mode of delivery		
Spontaneous vaginal delivery	78	65%
Delivery with the aid of Forceps	12	10%
Delivery with the aid of Vento use	12	10%
Delivery by Caesarean section	18	15%
Indications of Delivery		
Foetal distress	16	13.3%
Unfavorable cervix	6	5%
Hyper stimulation	5	4.1%

Table III 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 14.2%.

Table IV 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. Shows Indications of delivery by Caesarean section where 13.3% had foetal distress and 4.1% had unfavorable cervix.

Table IV Foetal outcome in the post-dated pregnancy after induction

Foetal outcome in the post-dated pregnancy after induction	Number	Percentage (%)
Healthy baby	90	75%
Distress baby	24	20%
Stillbirth (IUD)	6	5%

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

Discussion

Some women find their vagina is sore after prostaglandin gel or tape or they might experience nausea, vomiting or diarrhoea. These side effects are rare and there is no evidence that induction using prostaglandin is any more painful than a natural labour. Overall, the prevalence of success

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of induction of labor was 65% [95% CI (61.5, 68.5)]. Pre-eclampsia/eclampsia was found to be the most common indication for induction of labor (46.70%) followed by pre-labor rupture of fetal membrane (33.5%). According to gestational age, labor induction was successful in 16.7%, 50.0% and 62.8% of patients at 24 to 31, 32 to 33, and 34 to 36 weeks, showing a stepwise increase (p=0.006). 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 Boulvain, M. et al, with the exception that the majority of patients in both groups were between the ages of 20 and 30.[21] 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.[22] 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 Jahan, S. study, and 45% in my own study, it is gradually dropping by 45% in multigravida.[23] Misoprostol had the lowest success rate (14.2%) 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.[22] However, Hassan, Z. et al. 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.[24] 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 Gülmezoglu, A. M. et al. research, but only 26.15 percent of women.[25] Almost all (85%) mothers gave birth vaginally, whereas 15% gave birth through caesarean section, and 10% used forceps. According to research by Gülmezoglu, A. M. et al. uterine inactivity is the leading reason for cesarean sections in over half of all cases (47.06 percent).[25] 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 4.1% 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.

Limitation

Time constrain as well as single centre study.

Conclusion

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. 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.

Recommendation

Women with straight forward 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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Contribution of authors

NF-conception, design, acquisition of data, data analysis, drafting & final approval.

BN-Acquisition of data, interpretation, drafting, critical revision & final approval.

SRK-Acquisition of data, data analysis, interpretation of data, drafting, & final approval.

MKP-conception, design, interpretation of data, critical revision & final approval.

Disclosure
All the authors declared no conflict of interest.

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