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OUTCOME OF MEDICAL INDUCTION OF LABOUR IN POST-DATED PREGNANCY

Md. Alauddin[1], Mst. Marfia khatun[2], Sadia Sultana Mollika[3], Farhana Sharmin[4]
1. Senior Consultant (Gynaecology), 250 Bedded Sadar Hospital, Jhenaidah, Bangladesh
2. Junior Consultant (Gynaecology), 250 Bedded Sadar Hospital, Jhenaidah, Bangladesh
3. Medical Officer (Gynae), 250 Bedded Sadar Hospital, Jhenaidah, Bangladesh
4. Medical Officer (Gynae), 250 Bedded Sadar Hospital, Jhenaidah, Bangladesh

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ABSTRACT

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Introduction: Post maturity, post-term, Postdate, and prolonged pregnancy is accepted terms by WHO and the International Federation are of Gynecology and Obstetrics to describe pregnancy beyond dates (expected date of delivery). Prolongation of pregnancy complicates up to 10% of all pregnancies and carries increased risk to mother and foetus. **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, 250 Bedded Sadar Hospital, Jhenaidah, Bangladesh from January to June 2022. Fifty (50) 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:** Total 50 patients included in our study. Among than 32 patients were primigravida and 18 patients were multigravida. They were 18-38 years of age range. 20 patients (40%) were induced by only oxytocin drip and second method was ARM+oxytocin drip applied on 20 patients, some cases-7 patients (20%) were induced by using oral prostaglandin and very few cases-3 patients (10%) were induced by intra cervical prostaglandin. Only oxytocin drip and failure rate was 30%, combined ARM and oxytocin drip applied on 20 patient and failure rate was 20%. 1 patient were induced by using oral prostaglandin and failure rate was 14.2% and very few cases-3 patients were induced by intra cervical prostaglandin and

failure rate was 0.0% Among spontaneous vaginal delivery was 70 %, 14% assisted vaginal delivery. Among them Forceps covers 6% and Ventouse covers 8%. 12% Caesarean section was done for foetal distress, 4% for cervical distocia and 4% for hyper stimulation. Among them healthy baby was born 70%. 26% distress baby and 4% Still birth. **Conclusion**: The timely onset of labour is an important determinant of perinatal outcome. Confirmation of diagnosis of postdatism is very important. In management of postdatism a careful advice and proper monitoring can alleviate maternal anxiety and untoward complications. It is a routine practice in many centers of our country to terminate most of the post-dated pregnancy by caesarean section due to limitations of foetal monitoring system and oxytocin titration Induction of labour in the presence of a ripe cervix and favorable fetal presentation appears to carry little risk to mother or foetus.

Corresponding author
Dr. Md. Alauddin *

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INTRODUCTION

Post maturity, post-term, Postdate, and prolonged pregnancy is accepted terms by WHO and the International Federation are of gynecology and obstetrics to describe pregnancy beyond dates (expected date of delivery). Prolongation of pregnancy complicates up to 10% of all pregnancies and carries increased risk to mother and foetus [1,2,3]. Induction of labour in the post-dated pregnancy is the process of initiating labour by artificial means. Now a day, this is an established obstetric practice when expectant mother herself or her foetus may face dangers within the uterus. Induction of labour should be considered any time after the age of viability. The principal concern is how to provide the most effective, easy to use, safest and less expensive way to terminate the post-dated pregnancy. The incidence of post term pregnancy varies depending on whether the calculation is based on the history and clinical examination alone, or whether early pregnancy ultrasound examination is used to estimate gestational age [4,5,6]. The success of induction in post-dated pregnancy depends on the consistency, compliance and configuration of the cervix. Careful evaluation of the cervix is highly recommended before induction. When labour is induced in a low Bishop's score in post-dated pregnancies is associated with higher than normal incidence of failure of induction, prolonged labour, instrumental delivery and Caesarean section [7]. Estimation of gestational age is the foundation for diagnosis and subsequent management of post-dated pregnancy. Primary method is by dating by LMP, with angles rule according to which incidence of labour at or after 42 weeks is 14% [8]. Intravenous administration of a very dilute solution of oxytocin is the most effective medical means of inducing labour oxytocin exaggerates the inherent rhl4hmic pattern of uterine motility. Dinoprostone applied locally can increase cervical compliance and dilatation. Amniotomy may be an effective way to induce labour in carefully selected cases with high Bishop Scores. Release of amniotic fluid shortens the muscle bundles of the myometrium; the strength and duration of the contractions are thereby increased and a more rapid contraction sequence follows. Advantages of misoprostol may be the cost effectiveness, ease of administration and well tolerability, and most notably, its dual action in cervical ripening and labour induction [9]. Complications to both mother and foetus are seen in post-dated pregnancies. It has been reported that in a pregnancy which has crossed the expected date of delivery; there is an

increased risk of oligohydramnios, meconium stained amniotic fluid, macrosomia, fetal post maturity syndrome, and cesarean delivery, all of which condition jeopardize the baby as well as the mother. Prolonged pregnancy has always been regarded as a high-risk condition because perinatal morbidity and mortality is known to rise [10]. The maternal risks of post-dated pregnancy are often underappreciated. These include an increase in labor dystocia (9-12% versus 2-7% at term), an increase in severe perineal injury (3rd and 4th degree perineal lacerations) related to macrosomia (3.3% versus 2.6% at term) and operative vaginal delivery, and a doubling in the rate of cesarean delivery (14% versus 7% at term) [11,12]. The latter is associated with higher risks of complications such as endometritis, hemorrhage, and thromboembolic disease [13,14]. As there is fetal and maternal risk associated with postdated pregnancy, need of induction is more with post-dated pregnancy. There are several recommendations for the postdate pregnancy management, but no protocol is considered as gold standard, so management varies from hospital to hospital and country to country.

MATERIAL AND METHODS

This prospective observational study was conducted in the Department of Obstetrics and Gynecology, 250 Bedded Sadar Hospital, Jhenaidah, Bangladesh from January to June 2022. Fifty (50) 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. A formal scoring of the cervix was done by Bishop's scoring system before induction in post-dated pregnancies. In the first group only oxytocin drip method was introduced.

The dosage must be individualized. The administration of oxytocin is determining with a biologic assay; the smallest possible effective dose must be determined for each patient and then used to initiate and maintain labour, Constant observation by qualified attendants is required when this method is used. In most cases it is sufficient to add 1ml of oxytocin (10 units oxytocin to I L of 5% dextrose in water [1 mU/ mL], and increase oxytocin in 2-mU increments at 15-minute intervals. When contractions lasting 40- 60 seconds (per the extemal monitor) occur at 2.5 to 4-minute intervals, the oxytocin dose should be increased no further. Oxytocin infusion is discontinued whenever hyper stimulation or fetal distress is identified. Misoprostol is manufactured in 100-pg and 200-pg tablets that can be administered orally and vaginally every 4-6 hours for a maximum of four doses. Dinoprostone comes pre-packaged in a single dose syringe containing 0.5 mg of PGE2 it 2.5 mL of a viscous gel of colloidal silicon dioxide in triacetin. With dinoprostone, usually 12 hours should be allowed for cervical ripening, after which oxytocin induction should be started. PGE2 should not be used in patients with a history of asthma; glaucoma, or myocardial infarction, chorio-amnionitis, ruptured membranes are relative contraindications to the use of prostaglandins for induction [10].

Close monitoring of foetal heart rate and observation was done to detect hyper stimulation. Cervical score was reassessed after 4 hours. If labour was progressing, then no more doses were given and labour was observed. But if cervix was not ripe after 6 hours, the dose was repeated 6 hourly. Partograph was maintained once the patient went into active labour. Chi square test and p value is used as a measure to find out Statistical significance.

RESULTS

Table-1: The post-dated pregnancy patients at induction (N=50)

Number of patients	Total-50	Percentage
Primigravida	32	64
Multigravida	18	36
Age (years)	Range 18-38 year	Mean 24.69 years

Table-1 in this study induction was trailed on 50 patients. Among than 32 patients were primigravida and 18 patients were multigravida. They were 18-38 years of age range.

Table-2: Methods applied for induction in the post-dated pregnancy (N=50)

Methods	Number of patient	Percentage
Oxytocin drip	20	40
ARM + Oxytocin drip	20	40
Misoprostol	7	14
Dinoprostone	3	6

Table-2 shows that 20 patients (40%) were induced by only oxytocin drip and second method was ARM+oxytocin drip applied on 20 patients, some cases-7 patients (20%) were induced by using oral prostaglandin and very few cases- 3 patients (10%) were induced by intra cervical prostaglandin.

Table-3: Total number of case failed after induction in the post-dated pregnancy (N=50)

Methods	Total number of patients	Total number of failed induction	Percentage of failed induction
0xylocin drip	20	6	30.0
drip	20	4	20.0
Misoprostol	7	1	14.2
Dinoprostone	3	0	0.0

Table-3 shows that 20 patients were induced by only oxytocin drip and failure rate was 30%, combined ARM and oxytocin drip applied on 20 patient and failure rate was 20%. 1 patient were induced by using oral prostaglandin and failure rate was 14.2% and very few cases- 3 patients were induced by intra cervical prostaglandin and failure rate was 00%.

Table-4: Mode of delivery after induction in post-dated pregnancy (N=50)

Mode of delivery	Total number	Percentage
Spontaneous vaginal delivery	35	70
Delivery with the aid of Forceps	3	6
Delivery with the aid of Ventouse	4	8
Delivery by Caesarean section	8	16

Table-4 shows that spontaneous vaginal delivery was 70%, 14% assisted vaginal delivery. Among them forceps cover 6% and ventouse covers 8%. 16% patients were delivered by Caesarean section.

Table-5: Indications of delivery by Caesarean section (N=8)

Indications	Number of patients	Percentage
Foetal distress	6	12
Unfavorable Cervix	2	4
Hyper stimulation	2	4

Table-5 shows that 12% caesarean section was done for foetal distress, 4% for cervical distocia and 4% for hyper stimulation.

Table-6: Foetal outcome in the post-dated pregnancy after induction (N=50)

Foetal outcome	**Total baby born**	**Percentage**
Healthy baby	35	70
Distress baby	13	26
Still birth (IUD)	2	4

Table-6 shows that Foetal outcome is good. Among them healthy baby was born 70%. 26% distress baby and 4% Still birth.

DISCUSSION

In this study, 50 post-dated pregnancy patients were selected by simple randomization. This study shows that the main method was oxytocin drip and second method was ARM+oxytocin drip, some cases induced by using oral prostaglandin and very few cases induced by intra cervical prostaglandin. Though prostaglandins are very effective in induction of labour in post-dated pregnancy, still today most obstetricians believe that for routine induction of labour amniotomy and intravenous oxytocin is the method of choice, the efficacy and safety of which is well known. In our study majority of patients were below 30 years of age. The mean age was 24.69 years. The youngest one is 18 years and highest aged patient was 38 years. Early teens or elderly mothers are very fewer in number in this study. It is completely an urban picture but particularly in the rural areas early teen mothers and grand multipara are a major part of reproductive mothers. Alexander J et al, found similar results with most of the patients were between 20-30 years of age group and mean gestational age in group 1- 24.4±5.3 years and in group 2, 24±5.3 years [12]. Women who are of advance maternal age are at greater risk of still birth throughout gestation, the greatest risk period is 37 to 41 weeks [15]. In the comparison study it is seen that the induction rate in primigravida is gradually increasing. But in multigravida it is gradually decreasing 60%, in Dr. S. Jahan's study, 50% in Dr. Md. Zafirul Hassan's study and 45% in my study [11]. 20 patients 40% were induced by only oxytocin drip and failure rate was 30%, combined ARM and oxytocin drip applied on 20 patient and failure rate was 20%. From this study, it was found that efficacy of combined ARM and oxytocin drip method is superior then the only oxytocin drip method. Therefore, combined ARM and oxytocin drip method can be used for induction of labour in postdated pregnancy and this combined method is effective if the cervix is favorable [15]. But Shepherd et al [16] have found local prostaglandin as simple, safe and highly acceptable to the patient and there has been a great reduction in the incidence of caesarean section due to failed induction. In this study spontaneous vaginal delivery was 70%, 14% assisted vaginal delivery. Among them Forceps covers 6% and Ventouse covers 8%. But in Dr Md. Zafirul Hassan's study caesarean section was carried out on 26.15% [17]. Among them 12% Caesarean section was done for foetal distress, 4% for cervical distocia and 4% for hyper stimulation. Caesarean section for foetal distress is more in this study due to foetal distress diagnosed only clinical in absence of other facilities. In Dr Md. Zafnl Hassan's [17] study uterine inertia is the major (47.06%)

cause for caesarean section. It is fact that the patient with cervical dystocia were likely to have prolonged labour and with all its potential squeal. So the incidence of caesarean section is also increased. Regarding foetal outcome, the overall result is good. Among them healthy baby was born 70%. 26% distress babies which were well after resuscitation in usual manner and after 5 minute Apgar Scote was about 10 in all cases and 4% macerated still birth due to intrauterine foetal death (IUD). One recent systematic review showed that a policy of labour induction for women with post-dated pregnancy compared with expectant management is associated with fewer perinatal deaths and fewer caesarean sections [18].

CONCLUSION

The timely onset of labour is an important determinant of perinatal outcome. Confirmation of diagnosis of postdatism is very important. In management of postdatism a careful advice and proper monitoring can alleviate maternal anxiety and untoward complications. It is a routine practice in many centers of our country to terminate most of the post-dated pregnancy by caesarean section due to limitations of foetal monitoring system and oxytocin titration. If we would have modem facilities regarding infusion and foetal monitoring system like automatic infusion pump, cardiotocography, foetal scalp blood pH study etc. Then caesarean section rate could be reduced. Induction of labour in the presence of a ripe cervix and favorable foetal presentation appears to carry little risk to mother or foetus. Women with uncomplicated pregnancies should be offered induction of labour, while women with any complicating factors LSCS should be considered. The adverse outcome can be reduced by making accurate gestational age and diagnosis of post term gestation as well as recognition and management of risk factors.

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