Original Article

Induction of labour in prolonged pregnancy and its outcome

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Abstract

A prospective study was done in the Department of Obstetric and Gynecology, Dhaka Medical College Hospital, Dhaka from the January 2007 to June 2007. For the study 50 patients with uncomplicated prolonged pregnancy admitted during the study period were selected fulfilling the inclusion and the exclusion criteria. The study was conducted to evaluate the outcome of induction in prolonged pregnancy. From this study it was found that routine induction of labour at 41 to 42 weeks may be beneficial rather than continuing the pregnancy to have spontaneous labour which may increase the per perinatal mortality and morbidity.

It was also found that due to routine induction of labour in prolonged pregnancy, vaginal delivery rate is more than caesarean section in multigravida than primigravida. Regarding the cause of failure of induction of labour it was found that the main causes are foetal distress and abnormal uterine action. The present study has proved that the use of Prostaglandin for cervical ripening, the delivery outcome can be improved. The study also showed that indiction of labour is not associated with any major intraprtum and postpartum foetal and maternal complication.

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Introduction

Induction of labour is an obstetric procedure in which termination of pregnancy is done at or after the viable age of gestation by the use of some interventional method (Medical, Surgical of combined), with the purpose of initiation of labour and vaginal delivery and such intervention is done to serve the interest of either the mother of baby or both[1]. The term "prolonged pregnancy" is associated with many confusing terminology. Prolonged pregnancy is defined as pregnancy that has reached 42 weeks of completed gestation from the first day of the LMP or 40 weeks gestation from the conception[2].

Prolonged pregnancy beyond 40 weeks, occurs in every 10 pregnancy[1]. But the incidence is reduced when the diagnosis is made accurately by use of early USG rather than from LMP alone[1]. Correct diagnosis of prolonged pregnancy is very important as the outcome of induction of labour in prolonged pregnancy is significantly worse in women with uncertain dates than those with certain dates. Prolonged pregnancy is associated with many dangers such as placental insufficiency, foetal hypoxia, IUD and other complications associated with post maturity and dismaturity. The risks are lower in uncompleted prolonged pregnancy within 42 weeks. But beyond this period the risk increases every day. Any pregnancy that is beyond 41 weeks of confirmed gestational age, foetal wellbeing must be assessed[3]. Randomized trial compare a policy of routine induction at of before 40 weeks of gestation reveal on evidence of any major benefit of routine induction[4]. So, ideally, induction of labour should be done at or around 42 weeks in uncomplicated prolonged pregnancy and earlier when pregnancy is associated with any complicating factor such as PET, APH. In this study, the outcome of induction of labour in prolonged pregnancy (at and around 41-42 weeks) performed in department of Obs. and Gynae of Dhaka Medical College and Hospital, Dhaka has been evaluated.

Meterials and Methods

This study was carried out in the department of Obstetrics and Gynecology of Dhaka Medical College Hospital, Dhaka.

This prospective study was conduct ed during the period from 1st January 2007 to 30th June 2007.

Fifty cases of uncomplicated prolonged pregnancy were selected.

All cases of prolonged pregnancy fulfilling the inclusion and exclusion criteria during the study period who was subject to varies methods of induction of labour. Cases were selected with uncomplicated prolonged pregnancy, of detailed history was taken from each patients, were examined thoroughly and related major information were recorded in the questionnaire. Assessment of foetalwell being was done by clinical assessment and CTG, BPP in some cases as necessary. Bishop's scoring was done to assess the cervical condition. Selected patients were fully informed about the procedure and possible outcome of induction and informed consent was taken.

In most of the cases combined medical and surgical induction according to Bishop's score and engagement of head was given rather than using single method. All the cases were monitored by close and careful clinical observation and, partograph was maintained in each case to ensure the correct discipline of action. The type of delivery and the condition of the baby were recorded in details.

Collected data were compiled and appropriate statistical analysis were done by simple statistical analytic method.

Result

The observations and results of this study are shown in the forms of tables:-Table -1: Age distribution of the patients (n=50)

Age	Number	Percentage
15 to < 25	10	20
>25 to 35	25	50
>35 years	15	30

Table -1: The cases were between the ages of 15 to 35 years. Most of the patients were between > 25 to 30 years (50%) and the least number of patients were 15 to 25 years (20%).

Table -2: Duration of pregnancy in the patients (n=50)

Duration(Pregnancy)	Number	Percentage
40 weeks completed	23	46
41 weeks completed	18	36
42 weeks completed	9	18

The table-2 shows 23(46%) patients of the study group were presented with 40 weeks completed pregnancy, whereas 18 (36%) with 41 weeks completed pregnancy and 9 (18%) with 42 weeks completed pregnancy.

Table -3: Methods of induction (n=50)

Methods of induction	Number	Percentage
Oxytocin drip followed by ARM	17	34
ARM followed by oxytocin drip	10	20
Prostaglandin followed by oxytocin drip and ARM	23	46

Table-3 shows that in 17 (34%) patients labour were induced with oxytocin drip followed by ARM, 10 (20%) patients labour induced with ARM followed by oxytocin drip and 23 (46%) patients labour were induced with Prostaglandin followed by oxytocin drip and ARM.

Table-4: Mode of delivery of the patients (n=50)

Mode of delivery	Number	Percentage
Vaginal delivery	30	60
* NVD	24	48
* Vacuum extraction	5	10
* Forceps delivery	1	2
Caesarean Section	20	40

Table-4 shows 30 (60%) patients were delivered vaginally (both normal and assisted vaginal delivery) whereas 20 (40%) needed caesarean section.

Table-5: Neonatal condition at birth (n=50)

Neonatal Condition		Number	Percent
Foetal outcome	Healty baby 8 16	40	80
	Asphyxiated baby	8	16
	Still birth	0	0
	Other complications	2	4

Table-5 shows 40 (80%) babies were born healthy at birth, 8 babies were born with birth asphyxia with no perinatal mortality.

Table -6: Maternal Complications (intrapartum/postpartum) (n=50)

Maternal Complications	Number	Percentage
Abnormal uterine action	8	16
Cervical tear	2	4
Postpartum haemorrhage	2	4
Manual removal of placenta	0	0
Blood transfusion needed	2	4
Other complications	0	0
No complications	36	72
Total	50	100

Table-6 shows majority of patients 36 (72%) were delivered with no intrapartum and postpartum complications. Only 8 (16%) patients developed abnormal uterine action, cervical tear in 2(4%) and postpartum haemorrhage 2 (4%). Blood transfusion needed only for 2 (4%) patients.

Discussion

A well designed prospective study was done to evaluate the outcome of induction of labour in prolonged pregnancy in the department of Obs and Gynae, Dhaka Medical College Hospital, Dhaka from January 2007 to June 2007, for the study 50 patients with uncomplicated prolonged pregnancy admitted during the study period were selected fulfilling the inclusion and the exclusion criteria.

The aim of induction of labour in prolonged pregnancy is to reduce the prenatal mortality without increasing the maternal and perinatal morbidity. The study was conducted to evaluate the outcome of induction is prolonged pregnancy, whether routine induction of labour increases the rate of caesarian section, to caesarian section, to find out the cause of failure of induction and complication of induction in prolonged pregnancy. Perinatal mortality and morbidity is increased in pregnancies over 40 weeks, but can be reduced by the induction of labour.[5]

In this study majority the patients 25 (50%) were between 25-35 years (Table-I)/ Majority of the prolonged pregnancy cases were confirmed by USG, so the chance of misdate was low. Routine induction was done to all uncomplicated prolonged pregnancy most of which were before 42 weeks (46% at 40 completed weeks and 36% in 4l completed weeks).

The study showed better outcome in patients with favorable cervix, but in case of unfavorable cervix the outcome is better than some previous studies due to use of prostaglandins for cervical ripening. A similar study done by Jahan, 1990[6], showed that 63% patients with unfavorable cervix required Caesarea section after induction of labour and their study no prostaglandins was used for cervical ripening whereas in this study, because of prostaglandins was used for cervical ripening whereas in this study, because of prostaglandins, the percentage of caesarean section was only 45.45% and vaginal delivery in unfavorable cervix was 54.55% (table-V). One of the controversial issues' regarding management of prolonged pregnancy is whether routine induction of labour in prolonged pregnancy increases the rate of caesarean section? Most of the obstetrician in developed countries favour conservative management (no induction) and they claims that induction increases the caesarean section rate (Gibb et al 1982; cairo 1980; Anngensen et at 1987).

But the idea has been changed. A study done by 0 oiaide, FE Okonofua V 2001,[7] showed that there was on significant difference in caesarean section rate 36 (18%) in induction group compared with 28 (14%) in spontaneous labour with prolonged pregnancy. So the policy of routine induction at of around 41-42 weeks may be advocated in developing countries, in view of the uncertainty of further prolongation of pregnancy beyond 42 complicated weeks. Recent data (Rana et al)[8] also suggest that the risk of caesarean delivery after induction is lower than reported, possibly because of improvements in methods for cervical ripening. The study showed that due to routine induction of labour in pregnancy, vaginal delivery rate was more in multigravida (90%), less in primigravida and (40%) and caesarean section was less in multigravida (10%), more in primigravida (60%).

If we analyze the cause of induction failure in our study we found that 55% caesarean section were due to foetal distress and 45% were due to failure to progress as a result of abnormal uterine action, but according to several studies these indication of caesarean section are not potentially related to induction of labour. Study done by Emma Parry 1998[9] showed that the incidence of caesarean section for foetal distress is same in both induced and control group. Alexander, 2001[10] showed that risk factors intrinsic to the patient (nulliparity), cervical scoring, misdating) rather than labour induction itself.

If foetal our come is considered in relation to gestational age, the study showed that the adverse outcome of post term pregnancy includes a substantial increase in perinatal morbidity. Birth asphyxia of fetal hypoxia (meconium staining) was 2% in 40 completed weeks, 0% in 41 completed weeks and 12% in 42 completed weeks (table-VI). in the study by Treger 2002[11] rate of meconium stained amniotic fluid, abnormal foetal heart rate, macrosomia were found to be significantly higher with increasing gestational age. So we can say that routine induction of labour in prolonged pregnancy before 42 weeks is justified in our country.

In view of the increased risk of obstetric and perinantal complications prolonged pregnancy and the lack of consensus regarding clinical routine for foetal surveillance and labour induction, the aim of this prospective study was to evaluate the obstetric and perinantal outcome of routine induction of labour in prolonged pregnancy in the context of Bangladesh. In a developing country like Bangladesh because of inadequate antenatal foetal surveillance facilities and poor patient compliance routine induction of labour at earlier than 42 weeks risk in prolonged pregnancy may be justified.

In search of causes of induction failure it was found that if the intrinsic factors related to patient by proper dating of pregnancy are avoided, if cervical ripening by prostaglandins is done and with the identification of the foetus at risk before labour induction, an excellent outcome by active management of prolonged pregnancy can be achieved. Throughout the study, it has been seen that though the procedure of induction was traditional and the monitoring system was limited, the safe outcome of baby was approximately 100% with no perinantal death and maternal complication and incidence of instrumental delivery was negligible.

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