

■ *Original Article*

INDICATIONS FOR INDUCTION OF LABOUR: A PROSPECTIVE ANNALYSIS

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Abstract

Setting: Department of Gynaecology & Obstetrics, B P Koirala Institute of Health Sciences, Dharan, Nepal. **Objective:** The study was conducted to find out the different indications of induction of labour as well as cesarean delivery rate, fetal and neonatal morbidity associated with induction of labour. **Methods:** A prospective observational study was conducted at obstetric unit of B.P Koirala Institute of Health Sciences, a tertiary care centre in eastern Nepal .The study enrolled 262 consecutive patients from April2008 to august 2008 recruited to induction of labour according to the standard practiced in the institute. Dinoprostone gel was used as induction agent in all the cases, the patients were monitored in labour according to hospital protocol, cesarean was performed for routine indications .Fetal morbidity was assessed in terms of NICU admissions & 5 min Apgar scores. **Results:** 62% of patients were unbooked. Prolonged pregnancy (62.8%) and hypertensive disorders (18.7%) were the common indications for induction of labour. Cesarean delivery rate was 47.2% and NICU admission was 5.3%. **Conclusion:** Prolonged pregnancy and hypertensive disorders are the common indications for induction of labour. Standard labour management protocol has to be followed to avoid unnecessary cesarean delivery and have a better neonatal outcome.

Keywords: induction of labour, cesarean delivery, post dated pregnancy

Introduction

Induction of labour is an intervention to expedite delivery when there is concern about pregnancy and is usually performed when the benefits to the mother outweigh the risks of continuing the pregnancy¹. Rates of induction of labour vary world wide between 10-30% (USA: 20.6%, Sweden: 10%, Australia 23%, UK: 21%).These figures are on the rise as compared to older data². The decision of labour induction leads to increase in other interventions such as longer hospital stay, significant discomfort ,amniotomy,electronic fetal monitoring, epidural analgesia which leads to increase in complications like intraamniotic infection, cord prolapse,increase

use of oxytocics –hyper stimulation, chances of rupture uterus, increase operative delivery and adverse neonatal outcomes.

Another concern after induction of labour is of appropriate trained staffs to monitor patients ,need of electronic fetal monitoring ,monitoring uterine contractions and hyper stimulation , analgesia , provision of place for emergency cesarean delivery , neonatal intensive care units . Induction is a routine work of our obstetric unit; a formal study was conducted to see the maternal and fetal outcome of induction of labour at our institute.

Methods and subjects

The patients after having a standard indication for induction of labour as per hospital protocols, during the study period were included in the study. (N-260) In all patients dinoprostone gel 0.5 mg intracervical,

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repeated at 6 hourly interval up to max 3 doses was used as induction agent. All patients were monitored in labor room after induction with intermittent auscultation and pre & post induction cardiotocography. Amniotomy was performed after onset of active phase of labour oxytocin augmentation was performed if contractions were inadequate. Cesarean delivery was done for standard indications practiced in the institute. The patients were followed till discharge. Neonatal outcomes in terms of Apgar score at 5 min and NICU / NURSERY admissions were noted.

Results

Table 1 shows the base line characteristics of patients prior to initiation of induction. Majority of patients were unbooked (62.2%), youngest patient was 16 years of age and eldest 38 years of age. Majority of patients were primigravidas while multigravidas formed a minor group.

Table 1: Baseline characteristics

Age (years)	<20: 9.6%	21-30 : 40.2%	>31: 50%
Parity	Primi: 66%	Multipara: 33.2%	
Gestational age(weeks)	<37: 6.1%	37-41: 80.5%	>41: 24%

Among the patients induced 254 (97%) had Bishop's score <6 and 236 (91%) had >2/5th head palpable above brim prior to induction of labour .The induction to delivery interval mean was 832.16 min , with the longest interval of 2160 min and shortest of 115 min, 236(91.3%) of patients had Meconium stained liquor after amniotomy and 236 (91%) had post induction non reactive tocography.

Table 2: Indications of induction of labour

Post dated pregnancy	163 (62.8%)
Hypertensive disorders	48 (18.7%)
Preterm membrane rupture	10 (3%)
Decreased fetal movements	18 (6.4%)
Gestational diabetes mellitus	2 (0.7%)
Rh – negative pregnancy	4 (1.6%)
Polyhydramnios	2 (0.7%)
Oligohydramnios	1 (0.3%)
Intra uterine death at term	2 (0.7%)
Intra uterine growth retardation	2 (0.7%)
Social indication	3 (1%)

Vaginal delivery was achieved in 141 patients, 136 (52.5%) spontaneous and 5(1.8%) had ventouse assisted vaginal delivery, 119(47.2%) had cesarean delivery.

Table 3: Analysis of indications of cesarean

Failed induction	49 (41%)
Meconium stained liquor	25 (21.08%)
Fetal distress	19 (15%)
Arrest disorder	16 (13%)
Prolonged second stage	4 (3.3%)
APH of unknown origin	1 (0.5%)
Cord prolapse	1 (0.5%)
Severe pre-eclampsia	3 (1.8 %)
Breech presentation	1 (0.5%)

Table 4: Neonatal outcomes

5 min Apgar score < 7	3 (1.1%)
NICU/NURSERY admissions	14 (5.3%)
Mean birth weight	2.4 kg

Out of neonates admitted to NICU 4 were admitted for observation for meconium aspiration syndrome, 2 for preterm / low birth weight, 8 for observation for respiratory distress. Only 14 neonates had birth weight <2.5kg.

Discussions

The result of the present study is in accordance with the similar studies published .In the present study 62.8% patients were induced for prolonged pregnancy and 18.7% for hypertensive disorders whereas in the study by Eray Caliskan et .al these figures were 57.5% & 6.6% respectively³. Higher rates of cesarean delivery in the present study could be because of higher population of primipara patients, increased incidence of Meconium stained liquor ,higher non reactive post induction tocography, higher percentage of patients with Bishop's score <7 , all of which have been established as risk factors for cesarean delivery in the previous studies^{4, 5, 6}.

In a similar study by S. Arulkumaran et al⁷ 11 neonates had birth weight >4 kg.

In the study by S. Arulkumaran et al⁷ indications for cesarean was 33.8% for fetal distress, 13.3% for CPD, 42.% for failed induction, 9.8% for others indication which is comparable to the present study.

In one patient cesarean was performed for ante partum hemorrhage of unknown origin, in one patient breech presentation was mistakenly induced as cephalic presentation and later cesarean was performed when breech was diagnosed after amniotomy.

Neonatal Intensive Care Unit (NICU) admission rate of 5.3 % as noted in our study is lower compared to similar other studies which reported it to range from 16%-20%⁸.

Conclusion

According to the study the most common indication was prolonged pregnancy. About half of them had cesarean section. The rate of cesarean section was quite high. Proper selection of the patients with appropriate dating and time for induction would probably reduce the rate.

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