Maternal and Neonatal Outcome after Elective Induction at 41 Weeks of Pregnancy

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Abstract

Background: Induction of labour is a well known procedure which is carried out in post date pregnancies, to reduce the maternal and neonatal risks associated with it.

Objectives: To find out the effects of elective labour induction in women at 41+6 weeks of gestation in terms of neonatal and maternal outcome.

Methodology: This quasi-experimental study was conducted in Gynaecology & obstetrics department of Khyber Teaching Hospital Peshawar, which is a tertiary care hospital. A total of 50 patients with singleton pregnancy who had completed 41+6 weeks of gestation, were included in this study. However the patients with risk factors like medical disorders (diabetes, hypertension, asthma, liver disease etc), liquor abnormalities (oligohydramnios, polyhydramnios), twin pregnancy and with previous caesarean sections were excluded from the study. A proforma was designed to collect the descriptive as well as fetal and maternal outcome. Descriptive data included age of the mother, gravidity, parity, gestational amenorrhea and bishop score. Data regarding maternal outcome included mode of delivery and postpartum haemorrhage. Data regarding fetal outcome included weight of the baby, meconium aspiration and NICU admission.

Results: Elective induction of labour was done in 50 patients at 41+6 weeks of gestation. Mean age of patients was found to be 28 years +4.59 SD. Regarding parity 23 (46%) of the patients were primigravida, 25 (50%) patients had parity between 2-5 and two patients (4%) had parity >5. Mean of Bishop score was 5.40 ± 0.881 SD. Regarding mode of delivery 45 (90%) patients delivered vaginally and 5 (10%) delivered through emergency caesarean section. Post partum haemorrhage was observed in 3 (6%) patients. Neonatal outcome was analysed. Average weight of the baby was found to be 2.6 kg, 14% (7) had meconium aspiration; 12% (6) needed admission in NICU

Conclusion: Elective induction at 41 weeks of gestation is safe. Many of the maternal complications (shoulder dystocia, elective LSCS) and neonatal complications (increased rate, MAS, fetal distress during labour and neonatal morbidity ) associated with prolong pregnancy can be avoided.

Key words: Pregnancy, Induction, Post dates, Labour.
Methodology

The study period extended from June 2007 to June 2008 in the academic department of Obstetrics and Gynaecology Unit C Khyber Teaching hospital, Peshawar. A total of 50 patients with singleton pregnancy who had completed 41+6 weeks of gestation, were included in this study. However the patients with risk factors like medical disorders (diabetes, hypertension, asthma, liver disease etc), liquor abnormalities (oligohydramnios, polyhydramnios), twin pregnancy and with previous caesarean sections were excluded from the study.

Data were collected on pre-structured proforma regarding age, parity, gestational age, data of last normal menstrual period, medical history, past history of any surgery, past history of prolonged pregnancy. Obstetrical abdominal examination was carried out to find out the lie, presentation and to record the fetal cardiac activity while pelvic examination was carried out to find out the bishop score for induction of labour. CTG was performed on each patient to exclude fetal distress.

Risks and benefits on induction with prostaglandin were explained to the patients. Risk related to continuation of pregnancy beyond 41 weeks was also explained. Informed written consent was taken from all patients who were willing for induction.

Tablet prostaglandin E2 was selected for induction of labour because of its safety profile. Tablets were repeated after 6 hours if required. A maximum of three tablets were used.

Later on augmentation with oxytocin was done if required. Patient was monitored for uterine contraction and progress of labour through partogram.

Mode of delivery was observed in terms of vaginal delivery and caesarean section. Postpartum haemorrhage was observed in terms of measured blood loss of >500 ml.

Fetal well-being was reassured through intermittent CTG and auscultation of fetal cardiac activity with pinnard. Neonatal outcome was measured in terms of APGAR score, birth weight, brachial plexus injury, meconium aspiration and subsequent admission to neonatal intensive care unit.

The collected data were analyzed using SPSS version 15 computer software package. Descriptive statistics were used for variables such as age of mothers, parity, mode of delivery bishop score, mode of delivery, baby birth weight, meconium aspiration and NICU admission. Frequencies along with their percentages mean values and standard deviations were calculated.

Results

All the patients who fulfilled inclusion criteria were induced with vaginal prostaglandin E2. Of 5.40 and SD±0.881. Regarding parity 23(46%) of the patients were primigravida, Twenty five (50%) patients had parity between 2-5 and two patients (4%) had parity >5.

As shown in figure 2, 45 (90%) patients delivered vaginally and 5 (10%) delivered through emergency caesarean section. Out of 45 patients who delivered vaginally 2 (4%) had forceps delivery and 1 (2%) had vacuum vaginal delivery. Post partum haemorrhage was observed in 3 (6%) patients.

Regarding the fetal outcome, mean weight of the baby was 3.4 kg ± 0.224 SD.

Fetal outcome was analyzed in term of meconium aspiration and number of neonates who needed admission in hospital. Out of 50 babies, 43 (86%) had no meconium aspiration whereas 7 (14%) had meconium aspiration, and out of these 7 babies, 6 (12%) needed admission in NICU; the 1 baby did not require admission to NICU and was transferred to the mother after observation.

Discussion

On reviewing the national as well as international literature for the effect of labour induction at 41 weeks of gestation, we found comparative studies where elective induction versus expectant management in patients into prolonged pregnancy was studied.

In our study, we did elective induction in women who presented at 41 completed weeks of gestation; In these
patients, obstetric and neonatal outcomes were observed. In this study 50 patients were induced; 7 (14%) patients have LSCS.

Otoide and Okonofu, conducted study in a Nigerian tertiary care hospital in which they evaluated the effect of routine induction of labour at 41-42 weeks of gestation. They found that there was no significant increase in caesarean section rate. It was 18% in induced group.

Jalil et al conducted a study in postgraduate medical institute Lahore, where she found that caesarean section rate was 52% in nulliparous and 22% amongst multiparous women. This is consistent with our findings. In the present study, out of 7 LSCSs, 6 LSCSs were in nullipara, whereas one of the caesarean sections was in a multiparous woman.

In our study caesarean section rate was 14% amongst 50 patients; 7 had LSCS, and in them 6 patients were primigravida with poor bishop score and 1 multigravida had LSCS. We observed that multigravida do not have increased risk of caesarean section after elective induction. Results of the present study are comparable with the result of study done by Heim e al, who studied the effects of elective induction of labour in multiparas women. They studied three hundred and four case control pairs where multiparous were matched with multiparas who were managed expectantly. They found 3.6% in elective induction group had caesarean section.

Hemus MA A studied the neonatal outcome in their study; out of 337, 21.4% had meconium stained amniotic fluid whereas 38% had this feature in the expectant management group. In this study 9% of the babies were admitted in NICU elective induction group, whereas 9% had shoulder dystocia in elective induction group in post term pregnancies.

In the present study where elective induction was done at 41 weeks, 14% had meconium stained amniotic fluid and 4% needed admission in NICU. No baby had shoulder dystocia. Both meconium stained amniotic fluid and shoulder dystocia are the markers for neonatal mortality and morbidity.

In our study, 4% had forceps delivery, 2% had vacuum delivery, two primigravida had outlet forceps delivery, one multigravida had forceps delivery and one multipara woman had vacuum delivery.

Four studies (one RCT and three observational) evaluated the association between elective induction and postpartum hemorrhage and found no association. Given the minimal amount of data and the lack of statistical power to examine this question, there is insufficient evidence to assess the association of maternal blood loss and elective induction of labour.

Conclusions

We conclude that elective induction at 41 weeks of gestation is safe and effective option. Many of the risks associated with prolonged pregnancy such as fetal macrosomia, intrauterine fetal death, meconium aspiration, shoulder dystocia, brachial plexus injury can be avoided. It is a safe option with no increase in adverse neonatal and maternal outcome. Induction itself did not increase the rate of caesarean section. Mode of delivery was primarily affected by bishop score, parity and fetal condition.

References