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Original Article

To Compare Various Modalities of Induction of Labour and Its Feto-Maternal Outcomes at a Tertiary Care Hospital

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ABSTRACT

Background: Induction of labour is an iatrogenic initiation of uterine contractions in a pregnant woman after the age of fetal viability, who is not in labour to help her achieve a vaginal birth. The present study was conducted to compare various modalities of induction of labour and its feto-maternal outcomes.

Materials and Methods: This was a prospective observational study carried out on 110 pregnant mothers requiring induction of labour and fulfilling the inclusion criteria was selected. History was recorded and analyzed. Fetal monitoring was done.

Results: In the present study 110 pregnant mothers requiring induction of labour and fulfilling the inclusion criteria were selected. 59.09% of the mothers had spontaneous vaginal delivery (SVD) whereas 40.91% of the mothers had to undergo Lower segment Caesarean Section (LSCS). Out of vaginally delivered babies, 15.38% were admitted to Neonatal Intensive Care Unit (NICU). Out of the 45 mothers that underwent LSCS, 31.11% were admitted to NICU. This depicts that there were more complications in the babies who required LSCS. Induction of Labour was done with Dinoprostone gel in 36.92% cases of SVD and 57.77% cases of LSCS.

Conclusion: The present study concluded that in maximum cases induction of Labour was done with Dinoprostone gel in 36.92% cases of SVD and 57.77% cases of LSCS.

KEYWORDS: Fetal Outcome, Induction of Labour, Maternal Outcome.

INTRODUCTION

Induction of labour is gradually increasing worldwide, irrespective of the indications and now, it is carried out in a quarter of pregnancies in the developed countries.[1,2] Induction of labour is an iatrogenic initiation of uterine contractions in a pregnant woman after the age of fetal viability, who is not in labour to help her achieve a vaginal birth. This is done when risk of continuing the pregnancy either for the mother or for the fetus, exceeds the risk associated with induced labour and delivery. WHO recommends that induction should be performed with a clear medical indication and when expected benefits outweigh potential harms.[3]

The rate of induction varies by location as well as institution. According to an analytical study, it is generally less common in lower-income (4.4%-Africa and 12.1%-Asia) than higher-income countries (approx. 20%in UK and USA), except Sri Lanka (35.5%) and India (32%).[4] In US it has increased from 9.5% in 1990 to 22.1% in 2004.[5]

When carried out with success, induction often results in delivery through the vagina, but at times it does not go according to plan with the following potential risks like cesarean section birth. An increase in the rate of operative vaginal delivery with excessive activity of the uterus and abnormal patterns of the fetal heart rate and improper estimation of delivery rate may result in preterm delivery of the infants and possible cord.[6-8] The present study was conducted to compare various modalities of induction of labour and its feto-maternal outcomes.

MATERIALS AND METHODS

This was a prospective observational study carried out in Department of Obstetrics and Gynaecology, ESI Post Graduate Institute of Medical Science and Research, Andheri (E), Mumbai, Maharashtra (India) on 110 pregnant mothers requiring induction of labour and fulfilling the inclusion criteria were selected. All the pre-requisite before induction of labour was done. General history, obstetrical, pelvic assessment, vaginal examination to record modified Bishop score, basic investigations and recent obstetric ultrasound was recorded and analyzed. Fetal monitoring was done; except for those with confirmed Intrauterine fetal demise (IUFD) cases. Materials used were Dinoprostone gel 0.5mg (repeated up to 3 doses, 6 hourly), Misoprostol (25 mcg vaginally; 4 hourly up to maximum 5 doses), Oxytocin (standard low dose), Early Amniotomy (<4cm dilatation) and Mechanical Dilatation with Foley's Catheter. A general rule with a Modified Bishop score of ≤5, induction with prostaglandins or mechanical dilatation were done. Oxytocin and amniotomy was preferred with a more favourable cervix. As this was a purely observational study, all agents single or in combination were included and the results were analyzed. Monitoring & progress of labour was done with the help of WHO modified Partograph and cardiotocography (CTG). If patient had inadequate uterine contractions, then augmentation was done with oxytocin, which was not included as a part of induction of labour.

Table 1: Shows outcome of baby in association with mode of delivery

Outcome of baby	SVD(N=65)	LSCS(N=45)
Handed Over to Mother	48(73.84%)	31(68.88%)
NICU	10(15.38%)	14(31.11%)
IUFD	7(10.76%)	0(0%)

Table 2: Shows mode of delivery in relation to the single or combination of the method used

Methods used	Mode of delivery in percentage	
	SVD (%)	LSCS (%)
Dinoprostone gel	24(36.92%)	26(57.77%)
Misoprostol	18(18.46%)	10(22.22%)
Oxytocin	2(3.07%)	0(0%)
ARM	1(1.53%)	0(0%)
Dinoprostone gel & Misoprostol	5(7.69%)	6(13.33%)
Dinoprostone gel & Oxytocin	2(3.07%)	0(0%)
Dinoprostone gel & ARM	8(12.30%)	1(2.22%)
Dinoprostone gel & Mechanical Dilatation	1(1.53%)	0(0%)
Misoprostol & ARM	2(3.07%)	1(2.22%)
Misoprostol & Mechanical Dilatation	1(1.53%)	0(0%)
Oxytocin & ARM	1(1.53%)	1(2.22%)

RESULTS

In the present study 110 pregnant mothers requiring induction of labour and fulfilling the inclusion criteria were selected. 59.09% of the mothers had spontaneous vaginal delivery (SVD) whereas 40.91% of the mothers had to undergo Lower segment Caesarean Section (LSCS). Out of vaginally delivered babies, 15.38% were admitted to Neonatal Intensive Care Unit (NICU). Out of the 45 mothers that underwent LSCS, 31.11% were admitted to NICU. This depicts that there were more complications in the babies who required LSCS. Induction of Labour was done with Dinoprostone gel in 36.92% cases of SVD and 57.77% cases of LSCS.

DISCUSSION

Elective induction is induction of labour in absence of acceptable fetal or maternal indication. After 41 weeks of gestation, it is associated with a small reduction in perinatal deaths and meconium aspiration syndrome.4 However, elective induction should not be performed before 39 weeks gestation, as perinatal outcomes are less favourable.[9]

In the present study 110 pregnant mothers requiring induction of labour and fulfilling the inclusion criteria were selected. 59.09% of the mothers had spontaneous vaginal delivery (SVD) whereas 40.91% of the mothers had to undergo Lower segment Caesarean Section

(LSCS). Out of vaginally delivered babies, 15.38% were admitted to Neonatal Intensive Care Unit (NICU). Out of the 45 mothers that underwent LSCS, 31.11% were admitted to NICU. This depicts that there were more complications in the babies who required LSCS. Induction of Labour was done with Dinoprostone gel in 36.92% cases of SVD and 57.77% cases of LSCS.

In a study done by Rajiv M9 (2011), using dinoprostone for cervical priming followed by vaginal misoprostol not only hastened the progress of labor, with a greater percentage of women delivering vaginally and consequent reduction in caesarean section rate, but also reduced the adverse effects encountered with misoprostol when used alone, namely, tachysystole, uterine hyperstimulation and fetal heart abnormalities.[10]

A study done by S M Cooley, in total 80.5% had a spontaneous vaginal delivery after amniotomy with or without oxytocin.[11]

CONCLUSION

The present study concluded that in maximum cases induction of Labour was done with Dinoprostone gel in 36.92% cases of SVD and 57.77% cases of LSCS.

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