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ORIGINAL ARTICLE

Comparison of Indoor vs Outdoor Induction of Labour in Full Term Uncomplicated Pregnancies

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ABSTRACT

Background: Induction of labour is an obstetric intervention when the continuation of pregnancy seems to be less beneficial than delivery. Cervical ripening increases the rate of success of labour and normal vaginal delivery. Outpatient cervical ripening is a striking option with benefits of increase maternal satisfaction, reduce hospital stay workload on health care resources
Aim: To compare the fetomaternal outcome of indoor vs outdoor induction
Methods: An observational cross sectional study was conducted in MCH PIMS, after taking approval from ethical review board from July 1, 2019 to December 31, 2019. A total of 412 women with singleton pregnancy of cephalic presentation and full term gestation were included. Group A was retained in emergency after induction (outdoor patient) while group B (indoor patient) induction was done in ward. All women followed till delivery and fetomaternal outcome i.e. cesarean section, apgar score <7 at 5 minutes, meconium aspiration syndrome and NICU admission (yes/no) were noted.
Results: In this study, caesarean section was recorded in 44(21.36%) patients with outdoor induction while in 67(32.52%) in women with indoor induction, Apgar score <7 at 5 minutes was recorded in 4(1.94%) vs 15(7.28%) respectively, meconium aspiration syndrome in 6(2.91%) vs 35(16.99%) respectively and NICU admission in 3 (1.46%) versus 23(11.17%) respectively
Conclusion: This study concluded that outdoor induction is better in terms of fetomaternal outcome as compared to indoor induction.
Keywords: Induction of labour, outdoor, cesarean section.

INTRODUCTION

Induction of labour is an obstetric intervention when the continuation of pregnancy seems to be less beneficial than delivery[1,17]. In the last decade, percentage of induction of labour has been progressively increased up to 25%[2,3,4]. However unfavorable cervix requiring induction of labor can take several hours for ripening causing challenges for both clinician and mother[25]. Higher rate of induction of labor can lead to inadequate uterine contraction, failed induction and increase cesarean section rate[16]. Cervical ripening increases the rate of success of labor and delivery.[4] Outpatient cervical ripening is a striking option with benefits of increase maternal satisfaction, reduce hospital stay, reduce workload on health care resources and less financial cost[1].

Prostaglandin E2 (PGE2) and Misoprostol are commonly used pharmacological intervention for induction of labor. The advantages of these drugs are their high effectiveness in patients with an unripen cervix because of the combined pharmacological effect between cervical ripening and its myometrium-stimulating effect Out of these, vaginal Prostaglandin E2 (PGE2) is the preferred method of induction[5]. The rationale of this study was to compare the fetomaternal outcome of indoor vs outdoor induction in local population. The study can be beneficial for both patients and hospitals. Besides the possibly improved outcome of patients, tertiary care hospitals in emerging economies often lack the required resources to cater for the number of incoming patients. By managing low risk patients in outdoor induction, the indoor patient care can be improved due to decreased hospitalization.

MATERIAL AND METHOD

A observational cross sectonal study was conducted in MCH PIMS, after taking approval from ethical review board from July 1, 2019 to December 31, 2019. After taking informed consent women of age 18-40 years were selected. All women with singleton pregnancy of cephalic presentation (confirmed on ultrasound) and full term gestation (gestational age 37-41 weeks) as confirmed by LMP were included. Multiple pregnancies and previous history of C-section. Women with medical conditions such as GDM, PIH, preeclampsia, chronic hypertension, diabetes, cardiac diseases or obstetric complication Oligohydramnios, IUGR were excluded.

Induction of labour was done by placing tablet prostin E2 in posterior fornix of vagina. Pre induction CTG and post induction CTG was done. The induction of the first group was done after admission in ward while the second group was retained in emergency for observation. All women followed till delivery and fetomaternal outcome i.e. cesarean section, apgar score <7 at 5 minutes, meconium aspiration syndrome and NICU admission (yes/no) were noted. This all data including demographic data (age, gestational age, parity, BMI, cesarean section, apgar score <7 at 5 minutes, meconium aspiration syndrome and NICU admission) was recorded on a specially designed proforma. Data was analysed by SPSS version 25.

The objective of the study was to compare the fetomaternal outcome of indoor vs outdoor induction

RESULTS

Age range in this study was from 18 to 40 years with mean age of 29.88±5.42 years. The mean age of women in group A(outdoor patient) was 30.77±4.79 years and in group B (indoor patient) was 29.68±5.71 years. Majority of the patients 213(51.70%) were between 31 to 40 years of age as shown in Table I. Gestational age was from 37-41 weeks with mean gestational age of 39.02±1.24 weeks. The mean gestational age in group A was 38.96±1.24 weeks and in group B was 39.06±1.26 weeks. Majority of the patients 280(67.96%) were between 37 to 39 weeks of gestation as shown in Table II. Mean parity was 3.29±1.13 in group A. Mean parity was 3.22±1.19 in group B.

In this study, caesarean section was recorded in 44 (21.36%) in patients with outdoor induction while in 67 (32.52%) in women with indoor induction (p-value = 0.003), apgar score <7 at 5 minutes was recorded in 4(1.94%) versus 15(7.28%%) respectively (p-value = 0.010), meconium aspiration syndrome in 6(2.91%) vs 35(16.99%) respectively (p-value=0.0001) and NICU

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admission in 03 (1.46%) versus 23(11.17%) respectively (p-value = 0.0001) as shown in Table III.

Table-I: Age distribution for both groups (n=412).

Age (years)	Group A (n=206) Out door patient		Group B (n=206) In door patient		Total (n=412)	
	No. of patients	%age	No. of patients	%age	No. of patients	%age
18-30	105	50.97	94	45.63	199	48.30
31-40	101	49.03	112	54.37	213	51.70
Mean ± SD	30.77 ± 4.79		29.68 ± 5.71		29.88 ± 5.42	

Table-II: Distribution of patients according to Gestational age in both groups.

Gestational Age (weeks)	Group A (n=206) Outdoor patient		Group B (n=206) Indoor patient		Total (n=412)	
	No. of patients	%age	No. of patients	%age	No. of patients	%age
37-39 weeks	142	68.93	138	66.99	280	67.96
40-41 weeks	64	31.07	68	33.01	132	32.04
Mean ± SD	38.96 ± 1.24		39.06 ± 1.26		39.02 ± 1.24	

Table-III: Comparison of the fetomaternal outcome of indoor vs outdoor induction.

Outcome	Group A (n=206)		Group B (n=206)		p-value
	Yes	No	Yes	No	
Cesarean section	44 (21.36%)	162 (38.64%)	67 (32.52%)	139 (67.48%)	0.003
APGAR score <7 at 5 minutes	04 (1.94%)	202 (98.06%)	15 (7.28%)	191 (92.72%)	0.010
Meconium aspiration syndrome	06 (2.91%)	200 (97.09%)	35 (16.99%)	171 (83.01%)	0.0001
NICU admission	03 (1.46%)	203 (98.54%)	23 (11.17%)	183 (88.83%)	0.0001

DISCUSSION

Commonest obstetric intervention is induction of labour in term pregnancies. Its incidence is approximately 25% in developed countries. Cervical preparation is use for unfavorable cervix[3]. Both mechanical method (intracervical catheter either single or double balloon) and chemical method (PGE1 and PGE2) for cervical preparation are available[6]. Mechanical methods causing localised inflammation along with cervical dilatation, while prostaglandin preparations use to promote both cervical remodelling and uterine activity[5].

I have conducted this study to compare the fetomaternal outcome of indoor vs outdoor induction. In my study, caesarean section was recorded in 44(21.36%) in patients with outdoor induction while in 67(32.52%) in women with indoor induction (p-value=0.003), Apgar score <7 at 5 minutes was recorded in 4(1.94%) versus 15(7.28%) respectively (p-value=0.010), meconium aspiration syndrome in 6(2.91%) vs 35(16.99%) respectively (p-value = 0.0001) and NICU admission in 3(1.46%) versus 23 (11.17%) respectively (p-value = 0.0001). Limited data is available to estimate the efficacy and potential hazards of outpatient induction of labour[7]. Meta analysis of RCT showed that outpatient induction of labor has reduced cesarean delivery rates and short hospital stay[1,8].

In another study, more than half of the randomized women labored spontaneously, and did not require ripening. Comparing with our study, women who received ripening of cervix in outpatient induction had longer length of labor. These women had more frequent non-reassuring CTG and hyper stimulation. Less than 50% of the women going home and stayed at home overnight[9].

Maternal and newborn safety outcome was reported by seven studies[10-14] adverse outcomes were rarely reported. Few research studies were underpowered and results were inconclusive in reporting perinatal morbidity and mortality in outdoor patients and indoor patients groups. According to Wilkinson et al[9] hypoxic ischemic encephalopathy (HIE) was reported in 3 patients out of 215 women which belonged to outpatient induction of labor group while 2 women had HIE out of 210 women managed as inpatients. There was one patient who had perinatal death which initially belonged to OPIOL group but eventually went into spontaneous labor. Three adverse neonatal outcomes reported by Stock et al[11] women (n=907) who underwent OPIOL. One case was neonatal death, second case of HIE and third case with meconium aspiration. According to Biem et al[10], one case of meconium aspiration, a uterine rupture and a hysterectomy for postpartum hemorrhage amongst 150 women who managed as in door patients. No other serious adverse events were reported by the other studies[13].

No significant differences were found between OPIOL and inpatient management in terms of admission to neonatal unit and the incidence of low Apgar at 5 minutes of age, which ranged between 0 to 3.3%.[14] Differences in neonatal unit admission criteria, outcome definition and post-operative practices around neonatal care made comparison of this outcome difficult and admission rates ranged between 0.5% and 18%[14]. Similarly another study stated that the women's satisfaction were assessed but the results were not reported this might be the questionnaire didn't have validated scoring system[15].

CONCLUSION

This study concluded that outdoor induction is better in terms of fetomaternal outcome as compared to indoor induction. So, we recommend that outdoor induction should be used in low risk patients for decreasing the burden on indoor patients as well as for improving the fetomaternal outcome.

Conflict of interest: Nil

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