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ORIGINAL ARTICLE

Prevalence of Delivery Through C-Section Followed by the Induction of Labour in Nulliparous Patients Showing Undesirable Bishops Score

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ABSTRACT

Background: Inducing labour means induction of uterine contractions before natural labour, in order to deliver the fetus vaginally. It is done because birth through a C-section is riskier compared to vaginal delivery. For the purpose of induction and management of labour, Prostaglandins are used.

Objective: The present study aims the determination the incidence of delivery by C-section in nulliparous pregnant women showing undesirable bishop's scores.

Study design: A cross-sectional study

Place and Duration: This study was conducted at Timergarah Teaching Hospital Dir Lower Timergarah from January 2021 to January 2022

Methodology: A total of 150 nulliparous women were included in this study. The age of the patients ranged between 18 years to 35 years. All of the patients had singleton pregnancies having a cephalic presentation. The gestational ages of the patients ranged from 37 weeks to 42 weeks. All the patients had unfavourable bishop's score which was equal to or less than 5. The patients showing reactive fetal heart rates were added to the study. None of the patients had any contraindications of vaginal delivery.

Results: The present study included a total of 150 patients and 127 (84.67%) of them were in the age group between 18 years to 25 years. Overall68 (45.33%) of the patients were in the 40th week of pregnancy. The most common indication seen for the induction of labour was post-dated gestation in 70 (46.66%) patients. The incidence of C-section delivery was seen in 42 (28%) patients and the most common indication observed in these patients was the secondary arrest of labour.

Keywords: Nulliparous, Dinoprostone gel, Induction of Labour, Bishop's score

INTRODUCTION

Induction of labour infers to initiate uterine contractions followed by a fine period of gestation, but before the natural onset of labour. This is done by means of medicine, surgery, or a combination of both [1]. It is recommended under various circumstances that include risking the pregnancy by delaying the delivery of the fetus [2]. However, there are certain factors that are kept in consideration to proceed with the induction of labour, such as cervical status, preference of the patient, the profile of the patient, local resources, associated medical conditions as well as the obstetric condition and the level of the healthcare system [3]. The induction of labour can cause some serious damage to the mother as well as to the fetus. The maternal harms include rupture of the uterus and over-stimulation of the uterus. The uterine stimulation can cause distress to the fetus [4]. Keeping in view all the harms of induction of labour, the procedure should be done in a tertiary care hospital or at any health care facility where the well-being mother and fetus can be monitored [5]. Sometimes, the procedure of induction of labour becomes very complicated and indicated an emergency caesarian section delivery [6].

The success of induction of labour is predicted by the status of the cervix before the induction and this is done by Bishop's score [7]. Calculating Bishop's score is a very simple and reliable method. The factors on the basis of which the scoring is done are cervical dilatation, consistency, effacement, station, and position of presenting part [8]. There are many maternal indications of induction of labour such as pre-eclampsia, eclampsia, diabetes mellitus, pulmonary disease, premature rupture of membrane (PROM) and renal disease. Fetal indications of induction of labour are restricted fetal growth, isoimmunisation, chorioamnionitis, fetal demise and oligohydramnios [9]. Some of the contraindications of induction of labour are active genital herpes infection, umbilical cord prolapse, oblique lie, transverse lie, cervical carcinoma and placenta previa [10].

The current study aims the determination the incidence of C-section delivery followed by the induction of labour in women who deliver a baby for the first time but have an undesirable Bishop's score. The induction of labour was done by Dinoprostone gel.

METHODOLOGY

The present study is a cross-sectional study including 150 nulliparous pregnant women. The ages of the patients ranged between 18 years to 35 years. All the participants of the study had singleton pregnancy and cephalic presentation. The gestational ages ranged from 37 weeks to 42 weeks. All the patients had unfavourable Bishop's score which was ≤5. The heart rate of the fetus was reactive and there were no contraindications of vaginal delivery. Patients above the age of 35 years, multiparous, hypersensitive to prostaglandins, and having a positive history of uterine surgery, malpresentation, anemia and abnormal fetal heart rate, were excluded from the study. Common indications of induction of labour observed in the present study were post-dated pregnancy, oligohydramnios, pregnancy-induced hypertension (PIH), restricted growth of the fetus (FGR), gestation diabetes mellitus (GDM), premature rupture of membrane (PROM) and congenital anomalies.

All the participants were briefed about the process and purpose of the study and written informed consent was taken from all of them. A proforma was filled out by the participants in order to obtain demographic data such as weight, age, height, and body mass index (BMI). A detailed history was taken from all of the patients followed by a thorough clinical examination including a per-abdominal examination. Non-stress test was performed on the participants for the assessment of fetal health. In addition to that, baseline laboratory investigations were done. A digital per-vaginal examination was performed to record Bishop's Score. On the basis of the score, the decision regarding the induction of labour was taken. The induction was done in the patients with ≤5 Bishop's Score and it was done using Dinoprostone gel. The first examination of the patients was done six hours after the instillation of gel and any change in the Bishop's score was observed. A second dose is given to the patients that had not responded to the first dose. A maximum of three doses could be instilled according

to the guidelines. Data was gathered and analyzed in IBM SPSS version 26.

RESULTS

Out of 150 patients 94 (62.67%) participants were booked patients while 56 (37.33%) were unbooked. 127 (84.67%) participants were in the age group between 18 years to 25 years. 18 (12%) patients were in the age group between 26 years to 30 years. The mean age of the participants was 24.3±7.4 years. A total of 68 (45.33%) of the patients were in the 40th week of pregnancy. Overall33 (22%) patients were in their 39th week of pregnancy. Obstetrics and demographic data have been shown in table 1. Out of 150 patients, most of the patients had a Bishop's score of 4 seen in 50 (33.33%) followed by a Bishop's score of 3 in 48 (32%) patients and 5 in 40 (26.67%) patients. It was 2 in 12 (8%) patients. The commonest indication of labour induction was Post-date pregnancy in 70 (46.67%) patients. One dose of Dinoprostone gel sufficed for 115 (76.67%) patients. Table 3 shows the distribution of participants as per the mode of delivery (MOD). Table 3 indicates that 42 (28%) patients had to undergo C-sections, while 108 (72%) were delivered by normal vaginal delivery.

Table 1: Demographic and baseline data of all the participants (n=150)

Parameters	Frequency	Percentage
Age (Years)		
18-25	127	84.67
26-30	18	12
More than 30	5	3.33
Residence of the patients		
Rural	91	60.67
Urban	59	39.33
Gestational duration (weeks)		
37		
38	18	12
39	31	20.67
40	33	22
	68	45.33

Table 2: Induction characteristics of all the participants

Parameters	Frequency	Percentage
Bishop's score		
2	12	8
3	48	32
4	50	33.33
5	40	26.67
Indication of induction		
Post-date pregnancy	70	46.67
PROM	18	12
PIH	35	23.33
GDM	5	3.33
Oligohydramnios	16	10.67
FGR	4	2.67
Congenital anomaly	2	1.33
Duration of induction		
1-12 hours	81	54
13-24 hours	69	46
Dose of Dinoprostone given		
1	115	76.67
2	28	18.67
3	7	4.67

Table 3: Participants distribution as per the MOD

Parameter	Frequency	Percentage
MOD		
C-section delivery	42	28
Normal vaginal delivery	108	72
Indications of C-section delivery		
Secondary arrest		
Fetal distress	67	44.67
DTA	50	33.33
FIOL	18	12
	15	10

DISCUSSION

The mean age of the patients in the present study is 24.3±7.4 years. The youngest participant in the present study was 18 years old and the oldest participant was 33 years old. Most patients were in the age group of 18 years to 25 years. Similar limit of age has been seen in the study of Mehta et al [11]. In the present study, 150 participants were considered and 84.6% were below 25 years of age. In the study of Son et al, a total of 276 patients were included with a mean age of 30.01 years [12].

The drug used for the induction of labour in the present study was Dinoprostone gel. The drugs of the same group are preferred over oxytocin because of various reasons. Acharya et al conducted a study to compare the result of induction of labour by misoprostol and oxytocin. They concluded that misoprostol is used more frequently than oxytocin, however, the onset is more rapid by oxytocin. They also stated that both drugs have similar side effects [13].

Davey et al conducted a study in which they studied the incidence of C-sections followed by failed induction of labour. They collected data from more than 42000 patients to carry out their study. They inferred that 10 percent of patients had been induced without any particular reason. They concluded that induction of labour in primiparous women with no indication of labour, comes with double the risk of following an emergency C-section as compared to spontaneous labour. According to their study, 26% of patients had to undergo a C-section followed by induction of labour [14]. These results are similar to our study as 28% of patients in our study had been delivered by a C-section after inducing labour.

CONCLUSION

The incidence of the caesarian section was 28% in the present study, where the pregnant women were nulliparous. Poor Bishop's score leads to the induction of labour. The most common indication of induction of labour was post-dated pregnancy. The most common indication of C-section after induction of labour was the secondary arrest of labour.

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REFERENCES

1. Jozwiak M, Bloemenkamp KW, Kelly AJ, Mol BW, Irion O, Boulvain M. Mechanical methods for induction of labour. Cochrane Database of Systematic Reviews. 2012(3).
2. Mozurkewich EL, Chilimigras JL, Berman DR, Perni UC, Romero VC, King VJ, Keeton KL. Methods of induction of labour: a systematic review. BMC pregnancy and childbirth. 2011 Dec; 11:1-9.
3. Smith CA, Crowther CA, Grant SJ. Acupuncture for induction of labour. Cochrane Database of Systematic Reviews. 2013(8).
4. Leduc D, Biringer A, Lee L, Dy J, Corbett T, Duperron L, Lange I, Muise S, Parish B, Regush L, Wilson K. Induction of labour. Journal of Obstetrics and Gynaecology Canada. 2013 Sep 1; 35(9):840-57.
5. Gülmezoglu AM, Crowther CA, Middleton P, Heatley E. Induction of labour for improving birth outcomes for women at or beyond term. Cochrane database of systematic reviews. 2012(6).
6. Hofmeyr GJ, Gülmezoglu AM, Pileggi C. Vaginal misoprostol for cervical ripening and induction of labour. Cochrane Database of Systematic Reviews. 2010(10).
7. Kolkman DG, Verhoeven CJ, Brinkhorst SJ, Van Der Post JA, Pajkrt E, Opmeer BC, Mol BW. The Bishop score as a predictor of labor induction success: a systematic review. American journal of perinatology. 2013 Sep; 30(08):625-30.
8. Laughon SK, Zhang J, Troendle J, Sun L, Reddy UM. Using a simplified Bishop score to predict vaginal delivery. Obstetrics and Gynecology. 2011 Apr; 117(4):805.
9. Middleton P, Shepherd E, Morris J, Crowther CA, Gomersall JC. Induction of labour at or beyond 37 weeks gestation. Cochrane Database of Systematic Reviews. 2020(7).
10. McCarthy FP, Kenny LC. Induction of labour. Obstetrics, Gynaecology & Reproductive Medicine. 2014 Jan 1; 24(1):9-15.
11. Mehta K, Kuma D, Fathepuriya DS, Verma L. Incidence of Cesarean Delivery after Induction of Labour with Dinoprostone Gel at Term in Nulliparous Women with Unfavourable Bishop Score. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2017 Apr 1; 6(4):1253-8.
12. Son GH, Kim JH, Kwon JY, Kim YH, Park YW. Risk factors for cesarean delivery after induction of labor in nulliparous women with an unfavorable cervix at or beyond 41 weeks of gestation. Gynecologic and obstetric investigation. 2013; 76(4):254-9.
13. Acharya T, Devkota R, Bhattarai B, Acharya R. Outcome of misoprostol and oxytocin in the induction of labour. SAGE open medicine. 2017 Mar 21; 5:2050312117700809.
14. Davey MA, King J. Caesarean section following induction of labour in uncomplicated first births-a population-based cross-sectional analysis of 42,950 births. BMC pregnancy and childbirth. 2016 Dec; 16:1-9.