Original Article

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Maternal and Neonatal Outcome in Postdated Women Undergoing Induction of Labour Versus Spontaneous Labour

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Abstract

Background: To compare maternal and neonatal outcome in postdated women undergoing induction of labour versus spontaneous labour. **Subjects and Methods:** One hundred two females age ranged 18- 46 years of age were selected. Patients were divided into 2 groups of 51 each. Group I were those who had spontaneous labour and group II had induction of labour. Gestational age was assessed by ultrasonography in the first trimester of pregnancy. **Results:** Mode of delivery was vaginal in 30 in group I and 17 in group II, instrumental in 18 and 4 and LSCS in 3 and 30 in group I and II respectively. Indication for LSCS was non- progression of labour in 36 and 45, cord prolapse in 7 and 1, foetal distress in 8 and 3 and meconium-stained amniotic fluid in 0 and 2 in group I and II respectively. Maternal complications found to be post-partum haemorrhage seen in 4 and 10, perineal tear in 2 and 4 and sepsis in 3 and 5. Neonatal complications were respiratory distress in 3 and 3, meconium aspiration in 1 and 4 and hyperbilirubinemia in 2 and 0 in group I and II respectively. **Conclusion:** Induction should not be considered as a routine elective procedure. It should be carried out only when necessary.

Keywords: Amniotic Fluid, Spontaneous Labour, Elective Procedure, Meconium Aspiration.

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Introduction

Ensuring safety of the mother along with the delivery of a healthy baby is the ultimate objective of all obstetricians. Reduction in maternal and infant mortality also finds a mention in the Sustainable Development Goals of India.[1] More than 500 women die annually due to labour-related complications and about 4 million foetuses are stillborn annually in developing countries.[2] As per the SRS statistical report 2018, perinatal mortality rate is at an alarming 22 per 1000 live births. Labour induction is increasingly becoming one of the most common obstetric interventions in these cases. The prevalence of induction is up to 22% in India.[3]

There are many accepted absolute and relative medical and obstetric indications for labor induction.[4] Indications for induction of labor have included preeclampsia/ eclampsia and other hypertensive disorders, maternal diabetes mellitus, premature rupture of membranes, chorioamnionitis, intrauterine fetal growth restriction, oligohydramnios, isoimmunization, fetal demise, and post-term pregnancy. Elective induction of labor refers to the initiation of labor for the convenience of patient and physician, in an individual with a term pregnancy who is free of medical or obstetric indications.[5]

The effect of induction of labour on the duration of labour, feto-maternal outcomes and complications of labour has been equivocal.[6] While some studies suggest that induction of labour increases the risk of complications such as postpartum haemorrhage (PPH) due to uterine over-activity or atony post-partum from uterine fatigue, others have observed increased caesarean section rate on account of foetal distress.[7] Considering this, the present study was conducted with the aim to compare maternal and neonatal outcome in postdated women undergoing induction of labour versus spontaneous labour.

Subjects and Methods

Total of one hundred two female age ranged 18- 46 years of age were selected among those visiting the department of obstetrics and gynaecology. The present prospective study was done at tertiary care teaching hospital from March 2016 to February 2017.

Demographic data was recorded. Patients were divided into 2 groups of 51 each. Group I were those who had spontaneous labour and group II had induction of labour. Gestational age was assessed by ultrasonography in the first trimester of

pregnancy. Intrauterine foetal heart rate, uterine activity and maternal vital signs were regularly monitored. Induction was done using PGE2 intracervical gel 0.5 mg within 24 h of admission but not before 40 weeks+0 days. After recording all the parameters, statistical analysis was carried out using Mann Whitney U test. Level of significance was set below 0.05.

Results

Mode of delivery was vaginal in 30 in group I and 17 in group II, instrumental in 18 and 4 and LSCS in 3 and 30 in group I and II respectively. Indication for LSCS was non- progression of labour in 36 and 45, cord prolapse in 7 and 1, foetal distress in 8 and 3 and meconium-stained amniotic fluid in 0 and 2 in group I and II respectively. A significant difference was observed (P< 0.05) [Table 1, Figure 1].

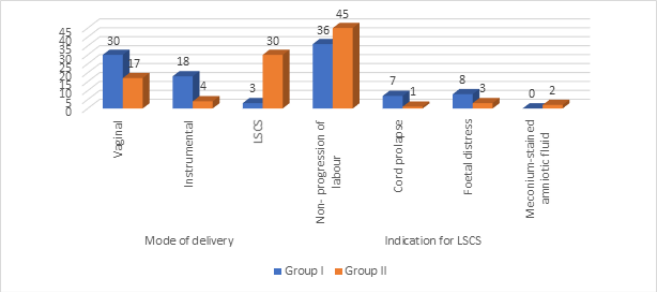

Figure 1: Comparison of parameters

Maternal complications found to be post-partum haemorrhage seen in 4 and 10, perineal tear in 2 and 4 and sepsis in 3 and 5. Neonatal complications were respiratory distress in 3 and 3, meconium aspiration in 1 and 4 and hyperbilirubinemia in 2 and 0 in group I and II respectively. A significant difference was observed (P< 0.05) [Table 2, Figure 2].

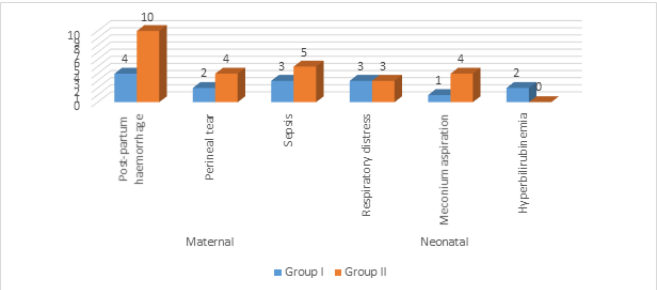

Figure 2: ?

Discussion

Induction of labour is one of the most common and important obstetric interventions. It is usually indicated when the benefits of delivery of the fetus outweighs the risk of continuing the pregnancy.[8] The incidence varies between and within countries and regions.[9] It is higher in developed countries than in the developing countries due to increasing rate of elective induction. Incidence of 22.5% has been reported in the United States of America, 5–13% in the Sub-Saharan Africa and 5–6% in South Africa.[10] The indications for induction of labour must be established before this intervention is instituted.[11,12] These indications have been classified as obstetric indications, medical indications and elective or social indications. Obstetric indications include prolonged pregnancy, hypertensive disease in pregnancy, intrauterine growth restriction (IUGR), Rhesus iso-immunization and intrauterine foetal death (IUD).[13] The present study was conducted with the aim to compare maternal and neonatal outcome in post-dated women undergoing induction of labour versus spontaneous labour.

We observed that mode of delivery was vaginal in 30 in group I and 17 in group II, instrumental in 18 and 4 and LSCS in 3 and 30 in group I and II respectively. Indication for LSCS was non- progression of labour in 36 and 45, cord prolapse in 7 and 1, foetal distress in 8 and 3 and meconium-stained amniotic fluid in 0 and 2 in group I and II respectively. Abisowo et al,[14] assessed the feto-maternal outcome of induced labour compared to spontaneous onset labour in 440 participants divided into induction (study) and spontaneous labour (control) groups. A total of 1540 deliveries occurred during the study period, out of which 257 had induction of labour. Successful induction rate was 16.47%. Vaginal delivery was 67.6% in the study group compared to 83.4% in the control group. Postdated pregnancy and hypertensive diseases accounted for 56.8% and 28% of the indications for induced labour, respectively. Induced labour was associated with a significantly higher caesarean section rates (P< 0.001). Cephalo-pelvic disproportion was the most common indication for caesarean section (P = 0.038). Maternal complications include primary postpartum haemorrhage, perineal lacerations and endometritis. The study group had longer duration of hospital stay compared to the control (P < 0.001). Five perinatal mortality occurred among the study group compared to three in the control (P = 0.848).

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Table 1: Comparison of parameters

Parameters	Variables	Group I	Group II	P value
Mode of delivery	Vaginal	30	17	<0.05
	Instrumental	18	4	
	LSCS	3	30	
Indication for LSCS	Non- progression of labour	36	45	<0.05
	Cord prolapse	7	1	
	Foetal distress	8	3	
	Meconium-stained amniotic fluid	0	2	

Table 2: Determination of complications

Complications	Variables	Group I	Group II	P value
Maternal	Post-partum haemorrhage	4	10	<0.05
	Perineal tear	2	4	
	Sepsis	3	5	
Neonatal	Respiratory distress	3	3	>0.05
	Meconium aspiration	1	4	
	Hyperbilirubinemia	2	0	

(control). 42% nulliparous women had induction of labour as compared to 29% multiparous women. The rate of cesarean section (58%) was substantially higher in those who had been induced. Non-progression of labour or failure of induction was the commonest indication for cesarean section. Post-partum haemorrhage was a complication found more commonly in the study group. Perineal tears were found more commonly in the control group. The mean birth weight of babies born to mothers who had been induced was significantly higher than that of those born to women who went into spontaneous labour. The APGAR scores were comparable in both groups. There was a higher incidence of hyperbilirubinemia in the study group.

Begum et al,[16] tested the association between elective induction of labor and cesarean delivery and to determine maternal and neonatal outcomes in elective induction of labor. The cesarean delivery rate was 51% in expectant and 46.8% in elective induction group, which was not much different. Women who were electively induced spent more time in labor delivery unit (14 hours, 21 minutes vs 12 hours, 45 minutes, $p < 0.01$), had labor longer than 12 hours (50 vs 36.5%, $p = 0.05$), received more frequently oxytocin (63.5 vs 47.9%, $p = 0.03$), and were more likely to deliver during daytime between 6.00 am and 6.00 pm (64.5 vs 52%, $p = 0.07$) compared with expectant group. There was no difference with regard to obstetric events and maternal neonatal outcomes.

Conclusion

Induction should not be considered as a routine elective procedure. It should be carried out only when necessary.

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