Original Research Article

Comparative study of partogram of spontaneous lobour with induced labour in prolonged pregnancy at tertiary care centre

M Hindumathi[1*], Sivajyothi[2], Saritha[3]

[1,3]Associate Professor, [2]Assistant Professor, Department of OBGY, Santhiram Medical College, Nandyal, Andhra Pradesh, INDIA.
Email: hindumathi260679@gmail.com

Abstract

Background: Partogram is a simple, reliable tool for graphically recording the progress of labour and monitoring the health of mother and fetus. It also serves as an early warning system and assists early decision making on intervention in labour1. Labor is a dynamic phenomenon characterized by a progressive increase in the frequency, intensity, and duration of uterine contractions with progressive dilatation and effacement of the cervix along with the descent of the fetus through the birth canal. **Aims and Objectives**: The main objectives of the study are :1.To compare partogram of spontaneous and induced labour of past dates women.4.To evaluate the maternal and perinatal outcome of spontaneous and induced labor in patients of past dates. **Methodology:** The present study "Comparative study of partogram of spontaneous and induced labour" is a clinical study involving 100 gravid women with past dates admitted in the department of Obstetrics and Gynaecology labor room, Santhiram Medical College, Nandyal from year November 2017 to October 2018. There were a total of 3254 deliveries in this total duration. Among this, there were 323 cases of past dates. We consider it postdates as pregnancies which crossed beyond EDD. Postmaturity as >42 weeks of gestation .100 cases were randomly selected. On admission to the labour room, the data was collected by an interview and clinical examination of the patients based on a prepared questionnaire (as in proforma) which also included the plotting of labour progression on a partogram. **Results;** The parity-based distribution of cases shows that out of the total 50 cases under Group – A was 33.(66%) cases are primigravida and17(34%) cases are multigravida. In Group B, 32(64%) cases are primigravida, and 18(36%) cases are multigravida. Most of the patients in spontaneous group delivered before the alert line. Compared to the spontaneous group, more patients from the induced group crossed the alert line that is Group B or action line that is Group C. This difference is found to be significant (p=0.0323). The mean duration of stage 1 in the induction group is 10.76+5.414 while in the spontaneous group is 8.646+3.497 hours. **Conclusion:** There was no difference in maternal and neonatal outcome in both the groups of post date patients. since the size of the study sample was small more randomized control trails are required.

Key Words: Partogram, Spontaneous Labour, Induced Labour, Maternal and Foetal Out Come.

[*]**Address for Correspondence:**
Dr. M Hindumathi, Associate Professor, Department of OBGY, Santhiram Medical College, Nandyal, Andhra Pradesh.
Email: hindumathi260679@gmail.com
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INTRODUCTION

Partogram is a simple, reliable tool for graphically recording the progress of labor and monitoring the health of mother and fetus. It also serves as an early warning system and assists early decision making on intervention in labour1.Advantage of the partogram is to save the writing time against in hand. It gives all the necessary information on a single sheet of paper, and it is easier to keep rather than making detailed notes at intervals. Records are straight and objective both nursing and medical staff can see at a glance, the progress of the labor in each patient. This usage of partogram facilitates hand over formalities when staff changes duties. It is possible

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to estimate the expected time of delivery in case everything is normal. It also plays a vital role to reduce the perinatal and maternal morbidity and mortality[2].Labor is a dynamic phenomenon characterized by a progressive increase in the frequency, intensity, and duration of uterine contractions with progressive dilatation and effacement of the cervix along with the descent of the fetus through the birth canal. This physiological process many a time may lead to pathological one and failure to recognize this would result in prolonged labor with a resultant increase in the morbidity and mortality of both the mother & fetus. Obstructed labor is a common cause of maternal and neonatal morbidity and mortality worldwide[3]. Apart from the graphic representation of the progress of labor, the introduction of partogram was an effort to decrease fetal and maternal death due to obstructed labor. Cochrane review estimated that 97% of still birth and 98% of the neonatal death occur in less developed countries. Continuous monitoring of labor and provision of rapid care to deal with problems are most crucial for preventing adverse obstetric outcomes related to child birth. The WHO introduced the 'modified' partograph in the year 2000. The latent phase was removed from the modified partograph to alleviate problems of confusing it with false labor and unnecessary interventions4.

The WHO partograph consists of three components:

- The fetal record,
- The record of the progress of labor,
- The maternal record.

Induction of labor, the technique of artificially stimulating uterine contractions before the natural onset of labor to achieve vaginal delivery of the fetoplacental unit, is one of the most common obstetric procedures performed in the world. When the cervix is closed and uneffaced, labor induction often commences with cervical ripening, a process that involves softening and dilatation of the cervix. The goal of Induction of labor is to achieve vaginal delivery by stimulating uterine contractions before the onset of labour[5]. Generally, Induction of labor has merit as a therapeutic option when the benefits of expediting the delivery outweigh the risks of continuing the pregnancy [5]. The benefits of the Induction of labor must be weighed against the potential maternal and fetal risks associated with this procedure. Prostaglandins are released during labor as a normal physiologic process. Hence attempted to study this agent in detail. Prostaglandins have achieved considerable attention when used for induction in women with unfavorable cervix. Prostaglandins are considered to be directly involved in the initiation of labor. In term patients with an unfavorable cervix and inactive myometrium, it seems logical to use prostaglandins to ripen the cervix or induce labor or both. The active phase of labor was significantly shorter in the vaginal misoprostol group when compared to the spontaneous group. Cesarean rates were higher in the vaginal misoprostol group when compared to the spontaneous group. The objective of this study was to analyze the patterns of labor amongst spontaneous parturients and compare outcomes of induced parturients with misoprostol in patients of past dates using a WHO modified partogram.[6]

AIMS AND OBJECTIVES

The main objectives of the study are:

1. To compare partogram of spontaneous and induced labor of past dates women.
2. To evaluate the maternal and perinatal outcome of spontaneous and induced labor in patients of past dates.

METHODOLOGY

The present study "Comparative study of partogram of spontaneous and induced labour" is a clinical study involving 100 gravid women with past dates admitted in department of OBSTETRICS AND GYNAECOLOGY labor room, Santhiram Medical College, Nandyal from year November 2017 to October 2018.There were a total of 3254 deliveries in this total duration. Among this there were 323 cases of pastdates. we consider pastdates as pregnancies which crossed beyond EDD. Postmaturity as >42 weeks of gestation .100 cases were randomly selected. The study was approved by the college Ethical committee.

METHOD OF COLLECTION

The study received approval from the institution and all participants gave written and informed consent. One hundred pregnant women were selected at random and were divided into two equal group.

1. Labour induced with vaginal prostaglandin (misoprostol)
2. Active phase of spontaneous labour

On admission to the labour room, the data was collected by an interview and clinical examination of the patients based on a prepared questionnaire (as in proforma) which also included the plotting of labour progression on a partogram.Selection of candidates was made using inclusion and exclusion criteria as follows

Inclusion criteria:

Pregnant women with spontaneous and induced labour

- First stage of labour with cervical dilatation from > 4cms
- Singleton pregnancy
- Cephalic presentation

Exclusion criteria:

- Antepartum hemorrhage
- Malpresentation

- Multiple gestations
- Cervical dilatation > 7 cms
- Premature labour less than 36 weeks
- Contracted pelvis

PROTOCOL OF INDUCTION WITH VAGINAL MISOPROSTOL

Patients assigned to the intra-vaginal misoprostol group had 25 micrograms tablet inserted into the posterior fornix of the vagina. If the patient was not in adequate labour (fewer than 3 contractions in 10 minutes) and the Bishop score was <6, misoprostol administration was repeated every 4 hours. The maximal dose of misoprostol was 150 micrograms (6 doses).

If labour did not ensue, even after 4 hours following the last dose, it was considered as failed induction and other methods of induction like oxytocin was tried. The cervical examination was performed every four hours after starting induction and whenever clinically indicated.

RECORDING OF PROGRESS IN LABOUR

The name, age, parity, and hospital identification data were entered. In all patients, the cervical status is assessed by using Bishop's score before induction and then after 6 hours of induction.

MODIFIED BISHOP SCORE

The maximum score is 10.A score of more than 6 is a favorable score with a predictable outcome. Foetal heart rate is recoded half hourly. The basal foetal heart rate, that is the rate between contractions is charted. The state of membrane was "I" if membranes were intact, "C" if membranes were ruptured and liquor clear, "M" if membranes were ruptured and liquor meconium stained. Moulding of the head at initial examination and subsequent vaginal examination was noted, and scoring was done as + or ++.The most important measures of progress in labour, the rate of dilatation of the cervix and the rate of descent of the fetal presenting part, are recorded by plotting the cervical dilation on the vertical line ‘x' axis on the left hand side of the graph in centimetres from 0 to 10 against the elapsed time which is plotted on the horizontal line ‘y’ axis in hours. The admission time is taken as zero hours, and the dilatation at the initial examination is plotted on the dilatation curve. Cervical dilatation is represented by ‘x'. The dilatation should be measured by vaginal examination four-hourly when the patient is in established labour and more frequently when necessary. The level of the head was measured by abdominal palpation as the number of fifths of the head above the pelvic brim. The head that is 5/5 above is entirely above the brim, and the head that is 4/5 above is just entering the brim; when the head js 3/5 above the hands-on abdominal palpation can still go partially round the head; when 2/5 above, the hands splay outwards because more than half of the head has entered the brim. When 1/5 above, only the sinciput can be tipped abdominally, and no fifth represents a head entirely in the pelvis with no sinciput or occiput palpable above the brim. The number of the fifth was plotted on the cervicography with a '0' using the lines 0 to 5 on the left-hand side. The uterine contractions were plotted on the graph below the cervicography. The duration and frequency of contractions were recoded in one-hour blocks. The strength of contractions was assessed based on the perception of contraction intensity (none, mild moderate, severe).Episodes of uterine tachysystole defined as > five contractions in 10 minutes or a single contraction lasting more than 2 minutes and FHR abnormalities (variable decelerations and bradycardia) were sought. The frequency was assessed by counting the number of contractions occurring during of contraction was measured in seconds, and the number of blocks representing frequency was filled in by dots if the duration was less than 20 seconds, cross-hatched if less than 40 seconds and blocked out if more than 40 seconds. Below this uterine contraction, on the graph, maternal temperature, pulse, BP was recorded. Urine examination for glucose, albumin, and acetone (if indicated and done) were also recorded on the graph. The treatment is given and the mode of delivery were illustrated on the graph. Every participant was observed for any side effect during and after delivery. Apgar scores of the baby were recorded at the first and fifth minute. Any admission to NICU was also noted. The time of various stages, time from induction to delivery, route of delivery, and failed induction were also recorded. The graphs of all patients were analyzed and were placed in one of the three categories Group A patients who delivered before the partogram touched the alert line B patients who delivered when the partogram lies between alet line and action line. C Patients who delivered after action line was reached. The quantitative data, comparison was performed using chi-square test with Yates's correction, students 't' test and analysis of variance. Group averages were reported as mean ± standard deviation.

RESULTS

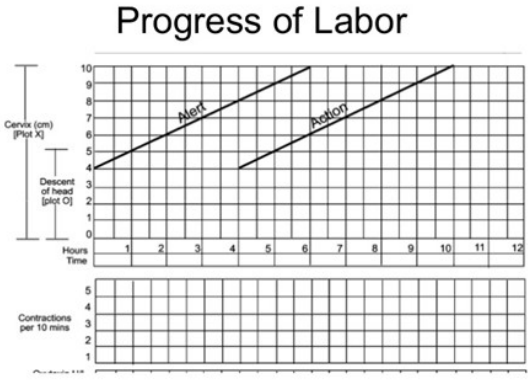

Figure 1

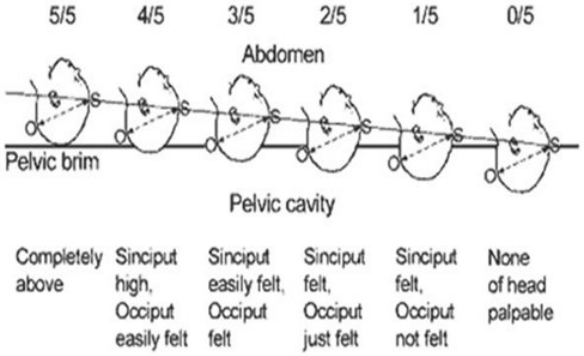

Figure 2

Table 1: Distribution of cases according to Gestational Age

G.A (in weeks& days)	GROUP-A (VAGINAL MISOPROSTOL)		GROUP-B SPONTANEOUS	
	n	%	n	%
40 wk -42	46	92%	47	94%
wk	4	8%	3	6%
≥42 weeks				
TOTAL	50	100%	50	100%

While analyzing period of gestation among group A and group B, the maximum number of cases were between 40-42 weeks period of gestation, 46(92%) in Group A and 47(94%) in Group B out of 50(100%) cases in each group. The number of cases ≥42 weeks was 4(8%) in Group A and 3(6%) in Group B.

Table 2: Distribution of cases according to parity

Parity	GROUP-A (VAGINAL MISOPROSTOL)		GROUP-B SPONTANEOUS	
	n	%	N	%
Primi	33	66%	32	64%
Multi	17	34%	18	36%
TOTAL	50	100%	50	100%

The parity based distribution of cases shows that out of the total 50 cases under group A, 33(66%) cases are primigravida and 17(34%) cases are multigravida. In group B, 32(64%)cases are primigravida and 18(36%)cases are multigravida.

ble 3: 3 Phase Of Partogram

	Induction	Spontaneous
Category A	39	45
Category B	9	4
Category C	2	1

Most of patients in spontaneous group delivered before the alert line. Compared to spontaneous group, more patients from induced group crossed the alert line i.e., category B, or the action line i.e., category C, this difference is found to be significant (p=0.0323).

Table 4: Duration Of First Stage

First Stage Duration Hours	Induction	Spontaneous	T-test
0- 5	14	20	P=.042 significant
5-10	20	21	
10-15	4	7	
15-20	7	0	
20-25	1	0	
Mean(Hrs)	9.2±6.9	9.6±6.99	

The mean duration of 1st stage in induction group is 10.76+ 5.414 while in the spontaneous group is 8.646+ 3.497 hrs. This finding was found to be statistically significant.

Table 5: Rate Of Cervical Dilatation

	Induction	Spontaneous	T-test
0.6-1.0	12	10	P=0.147NS
1.1-1.5	17	20	
1.6-2.0	3	12	
2.1-2.5	9	6	
2.6-3.0	2	0	
3.1-3.5	3	0	
Mean (cms/hr)	1.39±0.75	1.25±0.47	

There was a highly significant difference in the rate of cervical dilatation in the induction and spontaneous groups.

Table 6: duration of the second stage

Second Stage Duration Minutes	Induction	Spontaneous	T-test
1-10	4	9	P=0.451 NS
11-20	13	12	
21-30	14	10	
31-40	8	12	
41-50	3	3	
51-60	4	2	
Mean	22.08±13.7	19.75±13.78	

The mean duration of 2nd stage in induction group is 22.087+ 13.7mins while in spontaneous group is 19.75+13.78 mins, though the difference is not significant.

Table 7: mode of delivery

Mode of delivery	Induction	Spontaneous
Vaginal delivery	39(78%)	44(88%)
Outlet forceps	3(6%)	2(4%)
Cesarean section	4(8%)	2(4%)

The difference in rates of caesarean section or operative deliveries in induced and spontaneous groups is similar.

Table 8: liquor consistency

LIQUOR CONSISTENCY	Induction	Spontaneous	T-test
Clear	41(82%)	48(96%)	P=0.025
Meconium Stained	9(18%)	2(4%)	Significant

Meconium staining was seen more in the induced group than in a spontaneous group; This association was found to be statistically significant.

Table 9: indication of operative delivery

	Induction	Spontaneous
Fetal distress	3	2

A most common indication for operative delivery was either outlet forceps aided vaginal delivery or cesarean section was fetal distress, and there was no difference in induced and spontaneous groups.

Table 10: neonatal complications

	Induction	Spontaneous
MAS	2	1
Asphyxia	4	2
Hyperbilirubinemia	2	1
Neonatal death	0	0

Neonatal complication – There was not much of difference in the incidence of various neonatal complications in the induced and spontaneous groups.

Table 11: maternal complications

MATERNAL COMPLICATIONS	Induction	Spontaneous
UTI	1	0
Cervical Tear	3	1
Vagial Tear	1	2
PPH	2	1

Maternal complications– There was not much of difference in the incidence of various neonatal complications in the induced and spontaneous groups.

Table 12: apgar score

APGAR SCORE	Induction	Spontaneous
<7	2	0
7 to 8	6	6
>8	42	44

APGAR scores at 5mins were similar in both groups.

Table 13: Comparison of different parameters of partogram

	Induced	Spontaneous
Slow cervical dilation	10	2
UT	1	0
Requirement of augmentation	38	0
Presence of MSL	9	2
Fetal distress	3	2
Outlet forceps	3	2
LSCS	4	2

Table 14: Mode of delivery about alert line and action line Induction Group

	Vaginal delivery	Outlet forceps	LSCS
A	36	0	0
B	6	1	2
C	1	2	2

Majority of patients in category A, i.e., left of the alert line and category B, i.e., between alert and action lines delivered vaginally, majority of patients in category c, i.e., right of action line had cesarean section.

Table 15: mode of delivery about alert line and action line Spontaneous group

	Vaginal delivery	Outlet forceps	LSCS
A	41	1	0
B	5	1	1
C	0	0	1

Majority of patients in category A, i.e., left of alert line and category B, i.e., between alert and action lines delivered vaginally, all the patients in category C, i.e., right of action line had cesarean section.

DISCUSSION

In the present study, the mean duration of the 1st stage in the induction group was more(9.2 hrs) compared to the spontaneous group (9.6hrs), which was found statistically significant. According to Ramaswamy Vidya *et al*[7] 2011, Duration of the First stage of labor increased in nullipara induction (8.7 vs. 7.18 hrs) significantly. According to Elizabeth Babin *et al*[8], duration of the First stage of labor did not vary significantly in the induced and spontaneous groups (4.0± 2.6 vs. 4.3 ± 2.8) ($p>0.05$). The increased duration in the present study can be likely attributed to the lower bishop's score of the induced group since patients with good bishop's score progress faster without the requirement for induction.

In the present study mean duration of the 2nd stage of labour in the induction group was 22.08 mins and in the spontaneous group was 19.75 min this was not statistically significant. According to Ramasamy Vidya *et al*., 2011 duration of the Second stage of labour increased significantly only in nullipara induction (49 vs. 33 min)

According to Elizabeth Babin *et al*., the Second stage of labour was not significantly different in spontaneous and control (29+34 Vs. 30+33)(p>0.05)

The rate of cervical dilatation was not significant in both the study groups (p=0.147), mean rate of cervical dilatation in the induction group was slower (1.39 cms/hr) compared to the spontaneous group (1.24cms/hr).

The risk of cesarean section in the induction is found to be about 8% and that of operative delivery to be about 6%, in spontaneous group the risk was found to be 4% and 4% respectively. In a study conducted by Ramasamy vidya *et al*., 2011, it was found out the risk of cesarean section in primigravidae, induction group was significantly greater compared to other groups.

Various indications for operative delivery in the present study were Fetal distress, Arrest of dilatation, Arrest of Descent, and failed induction. The most common indication being Fetal distress, which occurred in 6% of induced labors and 4% of spontaneous labors. The incidence of Arrest of dilatation and Arrest of descent was similar in both the groups. In a study conducted by Ramasamy vidya *et al*. it was found that Fetal distress was the most common indication for operative delivery, followed by Arrest of descent and failed induction, Arrest of dilatation was the least common indication. Another study by Yvonne W. Cheng *et al*[9], 2001 showed that labor dystocia was the most common indication for cesarean section in both primigravida's, and multigravida. The difference in significance in the present study could be due to the small size of the comparison groups. The risks of LSCS in women after excluding birth wt>3.5kgs and maternal age >30 were not statistically higher in the induced group (p>.05) than spontaneous, proving that induction per se is not associated with LSCS . Only when associated with other risk factors risk of LSCS increase.

In the present study, a highly significant association was found with me conium staining of liquor and induction (p <0.025) this was not associated in an increase in meconium aspiration syndrome. According to Elizabeth Babin *et al*., significant meconium was found in a spontaneous group compared to the induction group (14% vs. 4%) (p=0.000)According to Hofmeyr GJ *et al*[10], there was an increase in meconium-stained amniotic fluid following vaginal misoprostol (RR 1.38, 95% CI 1.06 to 1.79).

Uterine tachysystole occurred in one patient of the induction group of which the only one was associated with fetal heart changes. Three cases in the induced group, and one case in the spontaneous group had a cervical tear.One case in induced and two cases in spontaneous had a vaginal tear, two cases in induced and one case in the spontaneous group had PPH

According to Hofmeyr GJ *et al*10, Vaginal misoprostol was associated with increased uterine hyper stimulation both without fetal rate changes (RR 1.67, 95%CI 1.30 to 2.14) and with associated fetal heart rate changes (RR 1.45, 95%CI 1.04 to 2.04).

The neonatal complications considered in the present study were meconium aspiration syndrome, Asphyxia, Hyperbilirubinemia and Neonatal death, all of which needed NICU admission. Asphyxia, Hyperbilirubineamia were similar in all the groups, thus not significant. Meconium aspiration syndrome occurred in 4% of the induction group compared to 2% of the spontaneous group this association was not found to be statistically significant. According to Bailit *et al*[11], 2010 incidence of Asphyxia was similar in both induced, and spontaneous groups, ventilator use, Sepsis, and NICU admission though was more in the spontaneous groups their association was not found to be significant. According to Glaucia Virginia Guerra *et al*12 elective induction among women with low-risk pregnancies was not significantly associated with an increased risk of most neonatal complications, including a low 5th minute Apgar score, low birth weight, admission to a NICU or early neonatal death. According to Maternal and Neonatal Outcomes of Elective Induction of Labor13: A Systematic Review and Cost-Effectiveness Analysis (2008), There is evidence that meconium-stained amniotic fluid is present more often among women who have expectant management compared with those who have elective induction. However, the risk of meconium aspiration syndrome is not higher among infants of women who are managed expectantly.

5 min APGAR scores according to the present study were mostly above 8 in both the groups. According to Glaucia Virginia Guerra *et al*12 elective induction among women with low-risk pregnancies was not significantly associated with an increased risk of most neonatal complications, including a low 5th minute Apgar score. According to Yvonne W.Cheng *et al*. 9 5min APGAR was found to be less than 7 in only 4.9% of primigravidae, induction group and 4.8% in multi induction group.

In the induced group majority of patients underwent normal vaginal delivery when their partographs were to the left of alert lines 36 (i.e 72%) no instrumental delivery and zero caesarean section. While in case between alert line and action line 6(12%) had vaginal delivery, 1 case had instrumental delivery, and 2 (4%) had cesarean delivery. In cases which touched the action line I case had a normal vaginal delivery, 2 cases had instrumental delivery, and 2 cases had cesarean delivery. In the spontaneous group majority of patients underwent normal vaginal delivery when their partographs were to the left of

alert lines, i.e., 41% (82%). The case between alert and action line 5(10%) cases had a normal vaginal delivery, 1 (2%)case had instrumental delivery, and one case had a cesarean section. Of the patients undergoing cesarean section 1 (i.e., 2%) was to the left of the action line, and one patient (i.e. 2%) was to the right of the action line, reasons being fetal distress and arrest of dilation. There were not many studies that were conducted in this aspect, so comparison with other studies was difficult.

CONCLUSION

- Mean duration of the first stage of labour was significantly longer in the spontaneous group.
- Mean duration of the second stage of labour was not significantly different in both the groups.
- Rate of cervical dilatation is slower in the spontaneous group.
- Rate of cesarean sections in both groups was found to be similar.
- Meconium staining was found to be associated more with the induction group, but this was not associated with increased rates of meconium aspiration syndrome.
- There was no difference in maternal and neonatal outcome in both the groups.
- Since the size of the study was small, and there is a paucity of information, more randomized control trails are required in this area.

REFERENCES

1. WHO, World Bank Tokyo Development Learning Centre, Kitasato University School of Nursing, " Blended Learning on Partograph", 2010
2. Shirish N Daftary, Sudip Chakravarti, “Manual of Obstetrics”, Reed Elsevier India PVT.LTD. New Delhi, 2005, 43(1). 286-287.
3. Carmen Dolea and Carla AbouZahr, "Global burden of obstructed labour in the year 2000,", 2000, (1).
4. Yisma *et al*. Reproductive Health 2013, 10:23.
5. American College of Obstetrician and Gynecologists. Induction of Labour ACOG Practice Bulletin 107, 2009 Aug;114(1):386-397.
6. WHO. World Health Organization partograph in the management of labour. The Lancet 1994; 343:1399-1404.
7. Ramswamy Vidya *et al*., Vol of obstetric and gynecology of India. Dec 2011, vol 61, issue 6, pp 667-669.
8. Elizabeth Babin *et al*., Elective induction in patients with clinically favorable services presented as paper presentation 413, AJOG.
9. Yvonne w. Cheng *et al*., Presented at the 68th Annual Meeting of the Pacific Coast Obstetrical and Gynecological Society, Ashland, Ore, October 3-7, 2001.
10. Hofmeyr GJ *et al*., Misoprostol for induction of labour: a systematic review: Br J Obstet Gynecol. 1999 Aug: 106(8):798-803.
11. Bailit JL *et al*. Maternal and neonatal outcomes by labor onset type and gestational age, Am J Obstet Gynecol 2010;202:245.el-12.
12. Glaucia Virginia Guerra *et al*., Elective induction versus spontaneous labour in Latin America, for the WHO Global Survey on Maternal & Perinatal Health in Latin America Study Group, Bulletin of the World Health Organization 2011;89:657-665. Doi: 10.2471/BLT.08.061126.
13. The review, Maternal and neonatal outcomes of Elective Induction of Labor: A systematic review and Cost-Effectiveness analysis (2008).

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