

**To Compare Outcome of Delivery amongst Spontaneous Versus Induced Labour in Primigravida of Using Modified Who Partograph**

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**Abstract**

**Background:** As perinatal mortality and fetal compromise increase progressively with gestation beyond 37 weeks, induction of labour between 37 and 41 weeks has the potential to improve neonatal outcomes.

**Methods:** Hospital based Prospective type of cross sectional study conducted at Department of Obstetrics and Gynaecology, S.M.S Medical College, Jaipur, Rajasthan.

**Results:** 4.4% cases of Spontaneous group and 2.2% cases of Induced group had a complication of Atonic Postpartum Haemorrhage during third stage (No Statistically significant difference  $P=0.446$ ), 1.1% cases of Spontaneous group and 3.3% cases of Induced group had a complication of Traumatic Postpartum Haemorrhage during third stage, 3.3% of cases of Spontaneous group and 2.2% of Induced group had retained placenta.

**Conclusion:** We conclude from this study that though requirement of Augmentation for progress of Labour was more in induced group and Instrumentation rate of Caesarean section was also high in induced group.

**Keywords:** WHO Partograph, Induction, Outcome

**Introduction**

As perinatal mortality and fetal compromise increase progressively with gestation beyond 37 weeks, induction of labour between 37 and 41 weeks has the potential to improve neonatal outcomes. However, there is no adequate trial or meta-analysis has been done to examine the effect of induction of labour between 37 and 41 weeks gestation on perinatal mortality. There are potential medical advantages to induction of labor at full term, such as reduction in stillbirth and further fetal growth, which leads to macrosomia and its consequences.<sup>1</sup> Elective labor induction can reduce the chance of sudden disruption of the patient's life and provider's work.<sup>2</sup>

Prostaglandins have been widely used for labour induction, particularly if the cervix is not 'favourable'<sup>15</sup>. However, interest in vaginal prostaglandins has increased with the introduction of a new synthetic prostaglandin E1 analogue - misoprostol.<sup>16-19</sup> Vaginal misoprostol is effective at inducing labour. It is more effective than placebo, as effective as oral misoprostol and vaginal dinoprostone, and results in fewer caesarean sections than oxytocin.<sup>3</sup>

There is scarcity of literature comparing spontaneous versus induced labour among nulliparous women. It is pertinent to compare the outcome of labour among these groups using World Health Organization (WHO) partograph. The first WHO partograph or 'Composite partograph', covers a latent phase of labour of up to 8 hours and an active phase beginning when the cervical dilatation reaches 3 cm. The active phase is provided with an alert line and an action line, drawn 4 hours apart on the partograph as aids to monitoring labour. This partograph is based on the principle that during active labour, the rate of cervical dilation should not be slower than 1 cm/hour. A lag time of 4 hours between slowing of labour and the need for intervention is unlikely to compromise the foetus or the mother and avoids unnecessary intervention. Moreover, differentiating the latent phase from false labour being difficult, diagnosis is often made in retrospect.<sup>4</sup>

To overcome these disadvantages, a WHO 'Modified Partograph' was introduced by removing the latent phase and considering the beginning of active phase at 4 cm dilatation of cervix instead of 3 cm. There were some other minor changes like, considering two squares in 1 hour instead of one square in 1 hour in cervical dilatation curve.<sup>4</sup>

WHO further modified the partograph for the third time, this time for used by skilled attendants in health centers. This simplified partograph is color coded. The area to the left of the alert line in the cervicograph is colored green, representing normal progress. The area to the right of the action line is colored red indicating dangerously slow progress in labour. The area in between the alert and action line is coloured amber, indicating the need for greater vigilance.<sup>4</sup>

### Materials and methods

**Place of Study:** A tertiary care Centre, Department of Obstetrics and Gynaecology, S.M.S Medical College, Jaipur, Rajasthan.

**Study Design:** Hospital based Prospective type of cross sectional study.

**Study Period:** From December 2017 onwards till the sample size achieved or 1 year which is earlier plus two months for data analysis and compilation.

The study population will be divided into two groups:

- Labour induced with vaginal prostaglandin (Misoprostol) and who reached  $\geq 4$  cm dilatation.
- Spontaneous onset of labour, who reached  $\geq 4$  cm dilatation.

**Study Population:** All women who came to the labour room at SMS Medical College Hospital, Jaipur during the study period are screened for eligibility criteria for induction in the study.

**Purpose of Study:** The purpose of my study is to compare the obstetrical outcome in spontaneous versus induced labour in term pregnancy primigavidae and thereby ascertain which is better in term of progress of labour need of augmentation and fetomaternal outcome.

**Inclusion Criteria:**

**For Induced group:**

- Primigravida with term pregnancy
- Live singleton pregnancy
- Vertex presentation
- Active phase of labour with cervical dilation  $\geq 4$  cm

For Spontaneous group:

- Primigravida with term pregnancy.
- Live singleton pregnancy.
- Vertex presentation.

### Exclusion Criteria

1. Women who had recognised contraindication to induction of labour, including malpresentation, abdominal pregnancy, placenta praevia or previous scars on uterus.
2. Women who undergone for infertility treatment.
3. Women aged  $>35$  years.
4. Cases of multiple pregnancy.
5. Any cases referred intrapartum and postpartum.

Data Collection: A pre designed pre tested semi structured questionnaire to collect data on the required variables was designed based on the previous literature. The questionnaire was scrutinized by the Faculty of Department of Obstetrics and Gynaecology, SMS Medical College Hospital, Jaipur, necessary changes were made in finalized proforma.

### Results

Majority of the cases in both group are in the age group of 21-50 years i.e. 58.9% in Spontaneous group and 53.3% in Induced group, followed by 26-30 years age group (31.1% in Spontaneous group and 35.6% in Induced group), followed by  $\leq 20$  years and  $> 30$  years respectively, and there is no significant age difference between two groups.

Table 1: Distribution of Cases according to mode of delivery

Mode of delivery		Spontaneous	Induced	Total	
Normal delivery	n	77	72	149	$\chi^2=0.974$ P=0.333
	%	85.6%	80.0%	82.8%	
Caesarean section	n	12	15	27	$\chi^2=0.174$ P=0.676
	%	13.3%	16.7%	15.0%	
Assisted vaginal delivery	n	1	3	4	Fisher Exact Test= 1.01 P=0.37
	%	1.1%	3.3%	2.2%	
Total	n	90	90	180	
	%	100.0%	100.0%	100.0%	

85.6% cases of spontaneous group and 80% cases of induced group had normal delivery, there is no statistically significant increase in normal delivery (P=0.333).

13.3% cases of Spontaneous group and 16.7% cases of Induced group had Caesarean section, there is statistically significant increase in Caesarean section among Induced group (P=0.676).

1.1% cases of Spontaneous group and 3.3% cases of Induced group had Assisted Vaginal delivery, difference is not statistically significant.

Table 2: Distribution of Cases according to Complications during 3<sup>rd</sup> Stage

Complication during 3rd stage		Spontaneous	Induced	Total	
Nil	n	82	83	165	
	%	92.2%	91.1%	91.7%	
Atonic Postpartum Haemorrhage	n	4	2	6	P=0.446
	%	4.4%	2.2%	3.3%	
Traumatic Postpartum Haemorrhage	n	1	3	4	P=0.37
	%	1.1%	3.3%	2.2%	
Retained placenta	n	3	2	5	P=0.684
	%	3.3%	2.2%	2.8%	
Shock	n	0	0	0	
	%	0.0%	0.0%	0.0%	
Pulmonary	n	0	0	0	
	%				

Embolism	%	0.0%	0.0%	0.0%	
Uterine Inversion	n	0	0	0	
	%	0.0%	0.0%	0.0%	
Total	n	90	90	180	
	%	100.0%	100.0%	100.0%	

4.4% cases of Spontaneous group and 2.2% cases of Induced group had a complication of Atonic Postpartum Haemorrhage during third stage (No Statistically significant difference  $P=0.446$ ), 1.1% cases of Spontaneous group and 3.3% cases of Induced group had a complication of Traumatic Postpartum Haemorrhage during third stage, 3.3% of cases of Spontaneous group and 2.2% of Induced group had retained placenta.

### Discussion

In our study in induced group Assisted vaginal delivery is higher (3.3%) than in spontaneous group (1.1%). This difference was not statistically significant ( $p=0.37$ ). Lower rate of assisted vaginal delivery may be because rate of cesarean section was comparatively high in both groups.

A retrospective cohort study conducted by Osmundson S et al, have concluded that there were no significant differences in postpartum hemorrhage.<sup>5</sup>

In contrast to our study Imane Khireddine et al, conducted a population-based case-control study of low-risk women who gave birth in 106 French maternity units between December 2004 and November 2006. Labor induction was associated with a significantly higher risk of PPH (adjusted odds ratio, AOR1.22, 95%CI 1.04-1.42). Even in low risk women, induction of labor, regardless of the method used, is associated with a higher risk of PPH than spontaneous labor.<sup>6</sup>

In our study 3.3% of induced group had traumatic PPH compared to 1.1% in spontaneous group. This

difference was statistically not significant ( $p = 0.37$ ). 2.2% of induced group had Atonic PPH compared to 4.4% in spontaneous group, Higher traumatic PPH could be explained by higher assisted vaginal delivery and higher perineal tear in induced group in comparison to spontaneous group.

### Conclusion

We conclude from this study that though requirement of Augmentation for progress of Labour was more in induced group and Instrumentation rate of Caesarean section was also high in induced group.

### References

1. Ehrenthal DB, Hoffman MK, Jiang X, Ostrum G. Obstet Gynecol. 2011 Nov; 118(5):1047-55
2. World Health Organization. Preventing prolonged Labour: Part IV a practical guide: WHO/FHE/MSM/93.11 (<https://extranet.who.int/rhl/search/node/modified%20partograph>) Assessed on 09.11.2019
3. Rosenstein MG, Cheng YW, Snowden JM, Nicholson JM, Caughey AB. Obstet Gynecol. 2012 Jul; 120(1):76-82.
4. Yadav P, Verma M, Harne S, Sharma M. Comparison of spontaneous labour with induced labour in nulliparous women using modified WHO partograph: Int J Reprod Contracept Obstet Gynecol: 2016 Nov;5(11):4005-4008.
5. Osmundson S, Ou-Yang RJ, Grobman WA. Elective induction compared with expectant management in nulliparous women with an unfavorable cervix. Obstet Gynecol 2011; 117:583.
6. Gibson KS, Waters TP, Bailit JL. Maternal and neonatal outcomes in electively induced low-risk term pregnancies. Am J Obstet Gynecol 2014;211:249.e1-16.