

ORIGINAL RESEARCH

Comparision of Progression of Labour and Fetomaternal Outcome Between Spontaneous and Induced Labour

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ABSTRACT

Background:Induction of labour is artificial initiation of uterine contractions prior to spontaneous onset leading to progressive dilatation and effacement of cervix. Induction of labour process whether by administering foley bulb induction, stripping, oxytocin (or) prostaglandin. Labour induction is indicated where the benefits of either the mother or fetus outweighs the benefit of continuing pregnancy. **Aims and Objective:** The aim of the study is to analyze the progression of labour and comparison of fetal and maternal outcome between spontaneous and induced labour.

Materials and Methods: Present study is a prospective comparative study involving 200 participants divided into induction (study) and spontaneous (control) groups. Data was collected on socio demographic factors, maternal complications and fetal outcome .Those women who had spontaneous onset of labour and reached >4cm of cervix dilatation were included in study group. Progress of labour is monitored by modified WHO partographs. Women on induction reached >4cm dilatation of cervix were included in control group. Informed consent taken from every participant in the study.

Results: In the study group, the mean duration of active phase in primigravida was 6.2hours and in multigravida was 3.7hours. In control group, the mean duration of active phase in primigravida was 4.7hours and in multigravida was 2.5hours.In study group, the duration of second stage in primigravida and multigravida was 46minutes and 25minutes respectively whereas in control group, it is 40 minutes for primigravida and 21 minutes for multigravida. Induced labour is associated with higher cesarean section rates. Cephalopelvic disproportion was the most common indication for cesarean section followed by failed induction.

Conclusion: The mean duration of active phase and second stage of labour is longer in study group compared to control group. Neonatal outcome was similar in both groups except for 1minute and 5-minute APGAR scores which were significantly higher in spontaneous group. Augmentation of labour is frequently required in study group rather than control group. Occurrence of maternal complications like PPH, fever, vomiting and hyperstimulation of uterus showed no significant difference in both the groups.

Keywords: Induction of labour, primigravida, Cephalopelvic disproportion, oxytocin, prostaglandin.

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INTRODUCTION

Induction of labour is defined as the initiation of uterine contractions before the onset of labour for the purpose of vaginal delivery, while augmentation of labour refers to stimulation of spontaneous contractions that are considered inadequate because of failed cervical dilatation and fetal descent. Induction of labour is one of the most important tools for the obstetrician with the aim in achieving a successful vaginal delivery when continuation of pregnancy is a potential threat to life of mother and unborn baby.

Induction is done after assessing the Bishops score. In this study, modified Bishops score was used. Labour induction possess a risk to mother and baby, some of these risks include neonatal intensive care unit admission and complications regarding epidural analgesia. It is realized that number of inductions of labour patients was increasing in comparison with spontaneous labour patients.

Therefore, the complications of induced labour were higher. Indication for induction of labour must be established before any intervention is initiated. These indications have been classified into:

A) Obstetric indication

- Prolonged pregnancy
- Hypertensive disorders in pregnancy
- Intrauterine growth restriction
- Intrauterine fetal death
- Rhesus isoimmunization

B) Medical Indication

- Chronic hypertension
- Diabetes mellitus
- Haemoglobinopathies
- Chronic renal diseases coexisting with the pregnancy
- Liver diseases coexisting with the pregnancy

C) Elective induction also referred as social induction performed at patient's or doctor's convenience

- There is a consensus that success of induced labour is directly related to favorability of cervix, as adjudged using Bishops scoring system. The risk of failed induction with consequent higher caesarean section rate has been observed in those that are induced with unfavorable cervix.

Aim and Objective

To assess the progression of labour and fetomaternal outcome between spontaneous and induced labour.

MATERIALS & METHODS

This study is a prospective comparative study was conducted in pregnant women who admitted in labour room of GGH, Kadapa during the period of November 2021 to December 2021 were selected for this study. A total of 200 pregnant women were included and divided into two groups. In one group, labour was induced by any methods either medical or surgical like foley bulb induction or misoprostol or stripping while in other group were women with spontaneous labour and progression of labour in both was noted. The fetal outcome was noted. The study was conducted in pregnant women who are at term in active phase of labour

with cervical dilatation of at least 4cm either spontaneously or induced labour. Study population of 200 pregnant women divided into two equal groups:
 GROUP A- Labour induced and who reached >4cm dilatation.
 GROUP B- Spontaneous onset of labour who reached >4cm dilatation

Inclusion Criteria

- Singleton pregnancy
- Vertex presentation
- >37 weeks of gestational age.
- Spontaneous onset of labour pains
- Indicated cases for induction of labour
- Reactive fetal heart rate pattern

Exclusion Criteria

- Multiple gestation
- Malpresentations
- Antepartum hemorrhage
- Preterm
- Previous LSCS
- Medical complications of pregnancy where delivery is immediate
- Cervical dilatation >7cm on admission
- Severe oligohydramnios
- Cord prolapse

RESULTS

During the study period, a total of 200 patients were included in the study. 100 patients in spontaneous onset and 100 patients in induced labour.

Table 1:Age

Variables	Spontaneous	Induced
Age in years	27- 30	27-30
Weight kgs	58-64	58-64
Height cms	156-160	156-160
BMI	23-26	23-26
Gestational age weeks	38-40 weeks	38-40 weeks

Table 2: Parity

Spontaneous labour	Parity		Total
	Primi	Multi	
	72	28	100
Induced Labour	65	35	100
	137	63	200

Table 3: Mode of Delivery

Spontaneous Labour	EMLSCS		NVD	Outlet/Vaccum	Total
	PRIMI	3	68	1	72
	MULTI	2	26	0	28

Induced Labour	PRIMI	12	51	2	65
	MULTI	7	27	1	35
Total		24	172	4	200

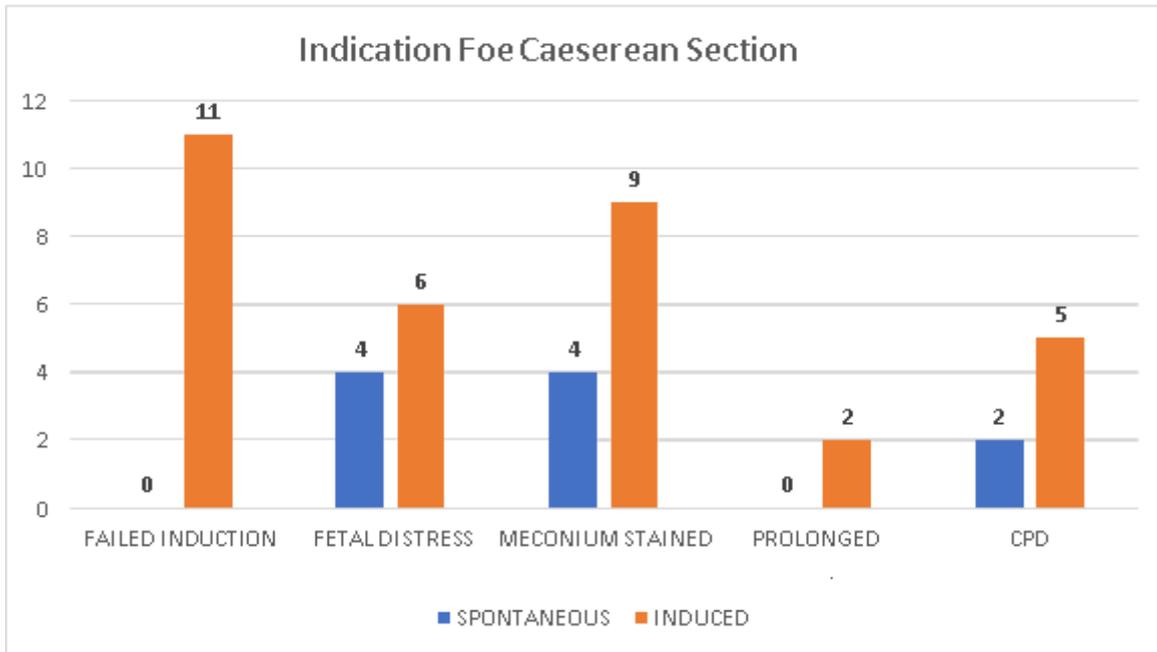


Figure 1: Indication for Caesarean Delivery

It is well evident that women in spontaneous labour had higher chances of normal vaginal delivery than women in induced group.

The risk of caesarean section following induction of labour increased with nulliparity, obesity, advanced maternal age, fetal macrosomia and chorioamnionitis. It is increased risk of instrumental vaginal delivery, longer hospital stay, need for immediate care of newborn and admission to neonatal intensive care unit (NICU).

Increased rate of caesarean sections deliveries in the induced group may also be due to the comorbidities such as hypertension, preeclampsia, and postdated pregnancy.

Table 4: Augmentation with Oxytocin

Spontaneous Labour	Gravida	OxytocinYes	OxytocinNo	Total
	PRIMI	10	62	72
	Multi	3	25	28
	Total	13	87	100
Induced Labour	PRIMI	17	48	65
	Multi	5	30	35
	Total	22	78	100

Women in whom induction done requires more augmentation for progress of labour than women in with spontaneous onset of labour.

Table 5: Duration of Latent Phase

Spontaneous Labour	PRIMI	7-9 hrs
	MULTI	5-7 hrs
Induced labour	PRIMI	8.5 -10.5 hrs
	MULTI	6.5-8 hrs

The duration of latent phase of labour is more in study group than in control group.

Table 6: Duration of Active Phase

Spontaneous labour	PRIMI	4-5.5 hrs
	MULTI	2-3 hrs
Induced labour	PRIMI	5-7 hrs
	MULTI	3-4.5 hrs

In patient with spontaneous labour, the duration of active phase is less when compared to induced labour.

Table 7: Duration of Second Stage of Labour

Spontaneous labour	PRIMI	35-45 min
	MULTI	15-27min
Induced labour	PRIMI	40-52min
	MULTI	20-3-min

Duration of second stage is shorter in spontaneous group when compared to induced group.

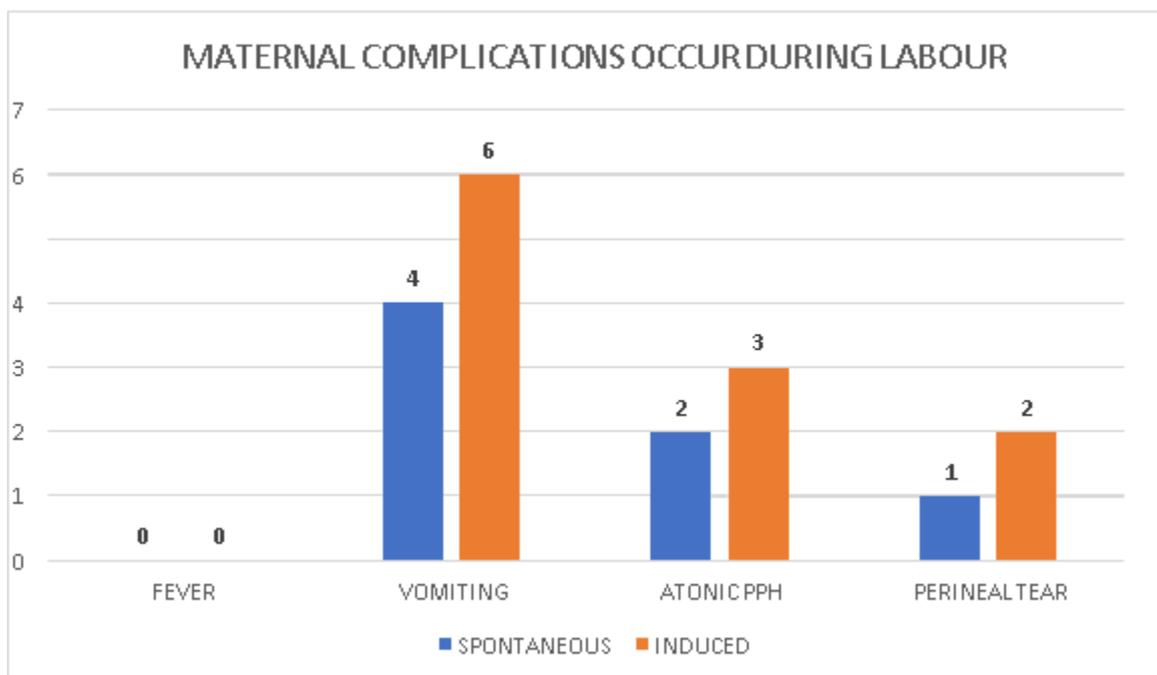


Figure 2: Maternal Complications.

Table 8: Birth Weight of Babies

Spontaneous labour	Gravida	Average
	PRIMI	2.2- 3.5 kgs
	MULTI	2.5- 3.7 Kgs
Induced labour	PRIMI	2.25- 3.2 kgs
	MULTI	2.4 – 3.4 kgs

Mean birth weights of babies are satisfactory and there is no significant difference between two groups.

Table 9: Apgar Score At 1 Minute

Apgar score at 1 minute	Spontaneous	Induced
>8	92	89
<8	8	11

APGAR score of babies at 1 minute in spontaneous was found to be better than that of induced group.

Table 10: Apgar Score at 5 Minutes

Apgar score at 5 minutes	Spontaneous	Induced
>8	98	96
<8	2	4

APGAR score at 5 minutes in spontaneous was found to be better than induced group.

DISCUSSION

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CONCLUSION

We conclude from this study that requirement of augmentation for progress of labour was more in induced group. Rate of caesarean section was also high but it does not adversely affect the neonatal outcome and maternal complications.

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