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Original Research

Assessment of effect of vaginal misoprostol in induction of labour

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ABSTRACT:
Background: Induction of labour is defined as the process of artificially stimulating the uterus to start labour. The present study was conducted to assess effect of vaginal misoprostol in induction of labour. **Materials & Methods:** 94 Primi gravida women were randomized into 2 groups. Group I were those in which females induced with 25 µg misoprostol for cervical ripening labour induction and group II with no induction and watch for spontaneous progress of labour. **Results:** socioeconomic status was upper in 20 and 18, middle in 12 and 16 and lower in 15 and 13. Status was booked in 27 and 25 and unbooked in 20 and 22, Education was illiterate in 13 each, primary in 24 and 22 and high in 10 and 12. Bishop score was 1 in 25 and 18, 2 in 14 and 15, 3 in 4 and 7, 4 in 2 and 4 and 5 in 2 and 3 in group I and II respectively. NICU admission was seen in 16 and 14, Apgar score <7 was present in 17 and 15 and >7 in 30 and 32. Maternal complications were PPH seen in 5 and 6, cervical tear in 6 and 7, perineal tear in 3 and 2. Perinatal morbidity was birth asphyxia in 2 and 14, meconium- stained liquor in 3 and 4, MAS was 4 and 2 and RDS in 5 and 1. The difference was non- significant (P> 0.05). **Conclusion:** Misoprostol is an effective priming and labour inducing agent. It can be used in inducing labour in patients where spontaneous progress of labour is not possible.
Key words: Misoprostol, labour, Primi

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INTRODUCTION

Induction of labour is defined as the process of artificially stimulating the uterus to start labour. It is usually performed by administering oxytocin or prostaglandins to the pregnant woman or by manually rupturing the amniotic membranes.[1] Over the past several decades, the incidence of labour induction for shortening the duration of pregnancy has continued to rise. In developed countries, the proportion of infants delivered at term following induction of labour can be as high as one in four deliveries.[2]

Misoprostol is a prostaglandin El analogue used previously for treatment of peptic ulcer. Prostaglandin El also is effective in termination of second-trimester pregnancy.[3] There are several advantages in using misoprostol. it is active orally; it is inexpensive; it is stable at room temperature; it does not require refrigeration for storage. When mifepristone and misoprostol are used to terminate pregnancy in the first trimester, misoprostol is more effective and better tolerated when given vaginally as compared to orally.[4]

The 2012 World Health Organization (WHO) safe abortion guideline had varying regimens for induced abortion at < 12 weeks.[5] During induction of labour, the woman has restricted mobility and the procedure itself can cause discomfort to her. To avoid potential risks associated with the procedure, the woman and her baby need to be monitored closely. This can strain the limited health care resources in under-resourced settings.[6] The present study was conducted to assess effect of vaginal misoprostol in induction of labour.

MATERIALS & METHODS

The present study comprised of 94 Primi gravida women. All agreed to participate in the study. Ethical consideration was taken into account before starting the study.

They were randomized into 2 groups. Group I were those in which females induced with 25 µg misoprostol for cervical ripening labour induction and group II with no induction and watch for spontaneous progress of labour. Every 4th hour per vaginal examination was

done. Depending on the MSL women were subjected to cesarean section. BISHOP's prelabour scoring system was used to assess whether the cervix was favourable for induction of labour or not. Results thus found were assessed statistically. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Agent	25 µg misoprostol	Control
Number	47	47

Table I shows distribution of patients based on agent used. Each group had 47 patients.

Table II Comparison of parameters

Variables	Parameters	Group I	Group II	P value
Socioeconomic status	Upper	20	18	0.12
	Middle	12	16	
	Lower	15	13	
Status	Booked	27	25	0.90
	Unbooked	20	22	
Education	Illiterate	13	13	0.94
	Primary	24	22	
	High	10	12	
Bishop Score	1	25	18	0.15
	2	14	15	
	3	4	7	
	4	2	4	
	5	2	3	

Table II, graph I shows that socioeconomic status was upper in 20 and 18, middle in 12 and 16 and lowerin 15 and 13. Status was booked in 27 and 25 and unbooked in 20 and 22, Education was illiterate in13 each, primary in 24 and 22 and high in 10 and 12. Bishop score was 1 in 25 and 18, 2 in 14 and 15, 3 in 4 and 7, 4 in 2 and 4 and 5 in 2 and 3 in group I and II respectively. The difference was non- significant (P> 0.05).

Graph I Comparison of parameters

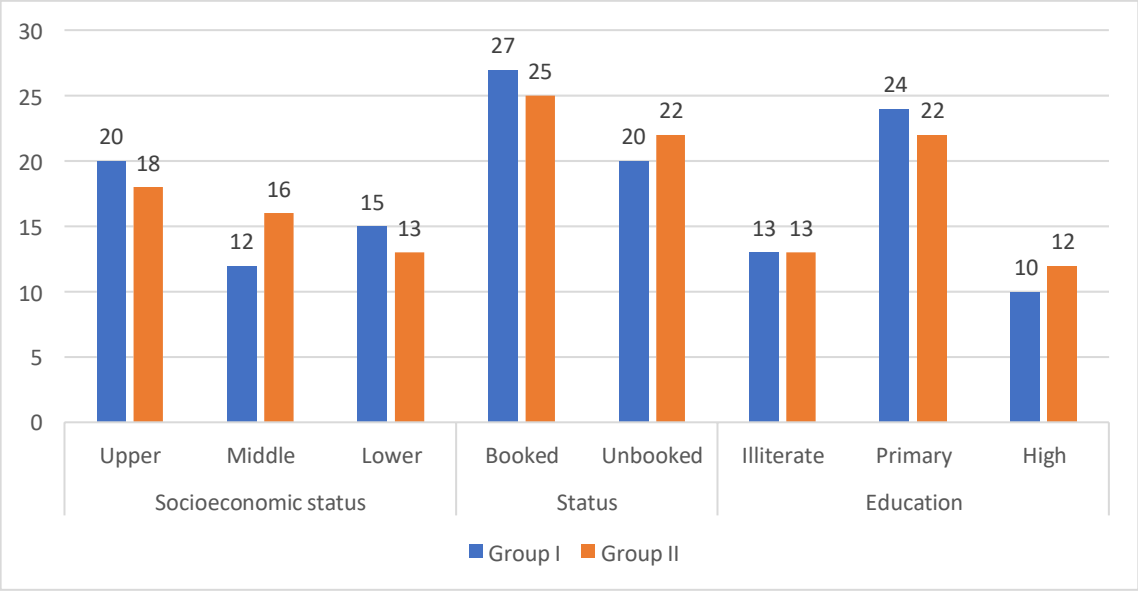


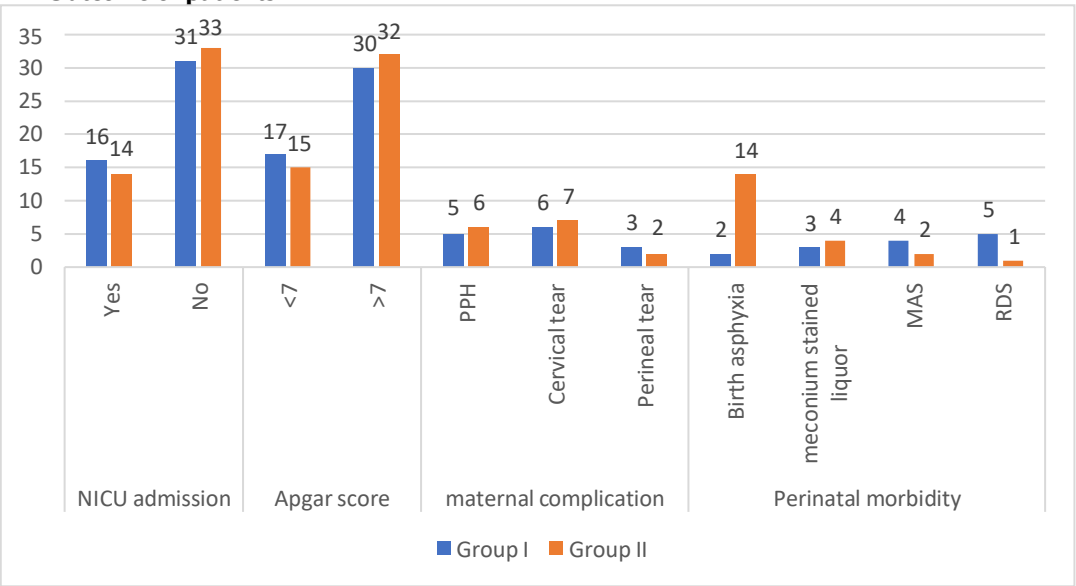
Table III Outcome of patients

Parameters	Variables	Group I	Group II	P value
NICU admission	Yes	16	14	0.91
	No	31	33	
Apgar score	<7	17	15	0.94
	>7	30	32	
maternal complication	PPH	5	6	0.81

	Cervical tear	6	7	
	Perineal tear	3	2	
Perinatal morbidity	Birth asphyxia	2	14	0.07
	meconium stained liquor	3	4	
	MAS	4	2	
	RDS	5	1	

Table III, graph II shows that NICU admission was seen in 16 and 14, Apgar score <7 was present in 17 and 15 and >7 in 30 and 32. Maternal complications were PPH seen in 5 and 6, cervical tear in 6 and 7, perineal tear in 3 and 2. Perinatal morbidity was birth asphyxia in 2 and 14, meconium stained liquor in 3 and 4, MAS was 4 and 2 and RDS in 5 and 1. The difference was non- significant (P> 0.05).

Graph II Outcome of patients



DISCUSSION

Medical methods emerged as an alternative to surgical abortion with the discovery of prostaglandins. Their use has evolved in the last two decades and various drugs have been used for first trimester medical abortion.[7] Several studies have explored utilization of mifepristone, methotrexate and various prostaglandins with different doses, routes and intervals of administration.[8] Over the years, various professional societies have recommended the use of induction of labour in circumstances in which the risks of waiting for the onset of spontaneous labour are judged by clinicians to be greater than the risks associated with shortening the duration of pregnancy by induction.[9] These circumstances generally include gestational age of 41 completed weeks or more prelabour rupture of amniotic membranes, hypertensive disorders, maternal medical complications, fetal death, fetal growth restriction, chorioamnionitis, multiple pregnancy, vaginal bleeding and other complications.[10,11] The present study was conducted to assess effect of vaginal misoprostol in induction of labour.

In present study, group I were those in which females induced with 25 µg misoprostol for cervical ripening labour induction and group II with no induction and watch for spontaneous progress of labour. Sharma et al[12] included a total of 200 Primi gravida women who were randomized into 2 groups. Women induced with misoprostol 25 µg for cervical ripening labour induction and control group with no induction and watch for spontaneous progress of labour. Majority of the cases in the age group 18-24 years of age, case group mostly had unfavorable cervix and Bishop Score ≤ 6. There was a significant difference seen in induction to start of active labour in both groups (p < 6 hrs. 68 cases (there bishop score was higher at the admission).

We found that that socioeconomic status was upper in 20 and 18, middle in 12 and 16 and lower in 15 and 13. Status was booked in 27 and 25 and unbooked in 20 and 22, Education was illiterate in 13 each, primary in 24 and 22 and high in 10 and 12. Bishop score was 1 in 25 and 18, 2 in 14 and 15, 3 in 4 and 7, 4 in 2 and 4 and 5 in 2 and 3 in group I and II respectively. Ho et al[13] in their study the efficacy of vaginal with oral misoprostol in termination of second-trimester pregnancy after pre-treatment with mifepristone. Women requesting termination of second trimester pregnancy were randomized into two groups. Thirty-six to 48 hours after oral administration of 200 mg of mifepristone, women were given either oral or vaginal misoprostol 200 pg every 3 hours for a maximum of five doses in the first 24 hours. Women receiving oral misoprosto1 also were given a vaginal placebo (vitamin B61, whereas those receiving vaginal misoprostol were given an oral placebo. The median induction-abortion

interval in the vaginal group (9 hours) was significantly shorter than that in the oral group (13 hours). The percentage of women aborting within 24 hours in the vaginal group (90%) was significantly higher than that in the oral group (69%). The median amount of misoprostol used in the vaginal group (600 pg) also was significantly less than that in the oral group (1000 pg). There was no significant difference in the incidence of side effects between the two groups except for fatigue and breast tenderness, which were more common in the oral group. 76 percent of the women preferred the oral route, and 24.5% of the women preferred the vaginal route.

We found that NICU admission was seen in 16 and 14, Apgar score <7 was present in 17 and 15 and >7 in 30 and 32. Maternal complications were PPH seen in 5 and 6, cervical tear in 6 and 7, perineal tear in 3 and 2. Perinatal morbidity was birth asphyxia in 2 and 14, meconium-stained liquor in 3 and 4, MAS was 4 and 2 and RDS in 5 and 1. Abubekar et al[14] in their study thirty-three studies composed of 22,275 participants were included. Combined regimens using mifepristone and misoprostol had lower rates of ongoing pregnancy, higher rates of successful abortion and satisfaction compared to misoprostol only regimens. In combined regimens, misoprostol 800 μg was more effective than 400 μg. There was no significant difference in dosing intervals between mifepristone and misoprostol and routes of misoprostol administration in combination or misoprostol alone regimens. The rate of serious adverse events was generally low.

CONCLUSION

Authors found that misoprostol is an effective priming and labour inducing agent. It can be used in inducing labour in patients where spontaneous progress of labour is not possible.

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