ORIGINAL RESEARCH

Assessment of maternal and fetal outcome in vaginal misoprostol induced patient

[1]Dr. Pallavi Agarwal, [2]Dr. Hardik Modi, [3]Dr. Rajan Vindochandra Kantharia, [4]Dr. Akash Patel

[1]Associate Professor, Department of Obstetrics and Gynaecology, Prasad Institute of Medical Sciences and Hospital, Lucknow, U.P., India
[2]Assistant Professor, [3,4]Associate Professor, Department of Medicine, Prasad Institute of Medical Sciences and Hospital, Lucknow, U.P., India

Corresponding Author
Dr. Akash Patel
Associate Professor, Department of Medicine, Prasad Institute of Medical Sciences and Hospital, Lucknow, U.P., India

Received: 15 April, 2023 Accepted: 17 May, 2023

ABSTRACT

Background: The process of artificially stimulating the uterus to initiate labor is known as induction of labor.The present study was conducted to assess maternal and fetal outcome in vaginal misoprostol induced patient. **Materials & Methods:** 80 Primi gravida womenwere divided into 2 groups. Group I were those in which women induced with 25 µg misoprostol for cervical ripening labour induction and group II with no induction and watch for spontaneous progress of labour. The cervix's suitability for inducing labor was evaluated using BISHOP's prelabor grading method. **Results:** Education status was illiterate in 18 and 11, primary in 12 and 10 and high in 10 and 19 subjects in group I and II respectively. Status was booked in 27 and 25 and unbooked in 13 and 15. Socioeconomic status was upper in 10 and 19, middle in 14 and 12 and lower in 16 and 9. Bishop score was 1 in 20 and 17, 2 in 12 and 11, 3 in 2 and 1, 4 in 2 and 5 and 5 in 3 and 6 in group I and II respectively. The difference was non- significant (P> 0.05).Apgar score<7 was present in 15 and 12 and >7 in 25 and 28 in group I and II respectively. NICU admission was seen in 10 and 6. Maternal complications were cervical tear in 3 and 7, PPH in 4 and 5, and perineal tear in 1 and 2. Perinatal morbidity was birth asphyxia in 3 and 8, MAS was 1 and 2, RDS in 4 and 1, and meconium stained liquor in 2 and 3 respectively. The difference was non- significant (P> 0.05). **Conclusion:** As gestational age increases, maternal morbidity such as postpartum hemorrhage, cervical and perineal tears, and perinatal outcomes like as birth hypoxia, RDS, MSL, and MAS are more common in the induction group than in the control group.

Key words: Misoprostol, gestational age, labour

INTRODUCTION

The process of artificially stimulating the uterus to initiate labor is known as induction of labor. It is typically carried out by manually rupturing the amniotic membranes or by giving the pregnant woman oxytocin or prostaglandins. In order to reduce the length of pregnancy, labor induction has become more common during the last few decades. The percentage of babies born at term after labor induction can reach one in four deliveries in wealthy nations.[1] An homologue of prostaglandin El, misoprostol was once used to treat peptic ulcers. Additionally, prostaglandin El works well to end a pregnancy in the second trimester.3. The use of misoprostol has a number of benefits. It is affordable, stable at room temperature, and effective when taken orally. When misoprostol and mifepristone are used to end a pregnancy in the first trimester, vaginal administration of misoprostol is more successful and more tolerated than oral administration.[2]

The 2012 World Health Organization (WHO) safe abortion guideline had varying regimens for induced abortion at < 12 weeks.[3] During induction of labour, the woman has restricted mobility and the procedure itself can cause discomfort to her.[4] To avoid potential risks associated with the procedure, the woman and her baby need to be monitored closely. This can strain the limited healthcare resources in under-resourced settings.[5]The present study was conducted to assess maternal and fetal outcome in vaginal misoprostol induced patient.

MATERIALS & METHODS

The present study comprised of 80Primi gravida women. All women gave their written consent to participate in the study.

Data such as name, age etc. was recorded in case sheet. They were divided into 2 groups. Group I were those in which womeninduced with 25 µg misoprostol for cervical ripening labour induction and group II

with no induction and watch for spontaneous progress of labour. A vaginal examination was performed every four hours. Women underwent cesarean sections based on their MSL. The cervix's suitability for inducing labor was evaluated using BISHOP's prelabor grading method.Results thus found were assessed statistically using Mann Whitney U test. 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	40	40

Table I shows that group I were those in which women induced with 25 µg misoprostol for cervical ripening labour induction and group II with no induction and watch for spontaneous progress of labour. Each group had 40 patients.

Table II Comparison of parameters

Variables	Parameters	Group I	Group II	P value
Education	Illiterate	18	11	0.85
	Primary	12	10	
	High	10	19	
Status	Booked	27	25	0.94
	Unbooked	13	15	
Socioeconomic status	Upper	10	19	0.90
	Middle	14	12	
	Lower	16	9	
Bishop Score	1	20	17	0.85
	2	12	11	
	3	2	1	
	4	3	5	
	5	3	6	

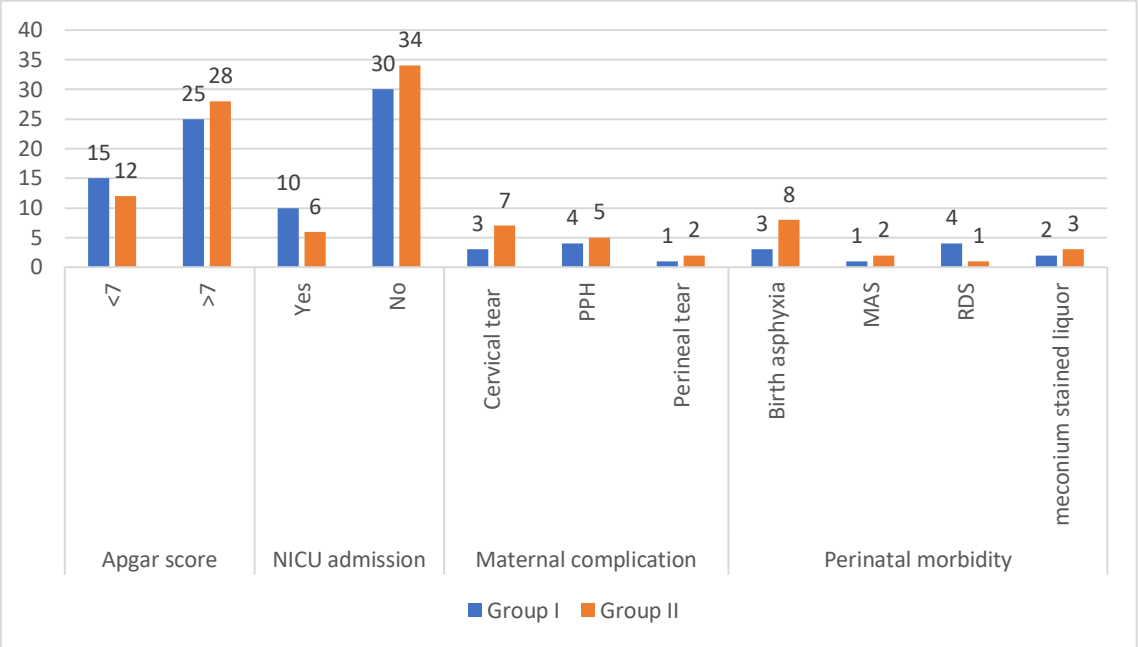
Table II, graph I shows that educationstatus was illiterate in 18 and 11, primary in 12 and 10 and high in 10 and19 subjects in group I and II respectively. Status was booked in 27and 25 and unbooked in 13 and 15.Socioeconomic status was upper in 10 and 19, middlein 14 and 12 and lower in 16 and 9. Bishop score was 1 in 20 and 17, 2 in 12 and 11, 3 in 2 and 1, 4 in 2 and 5 and 5 in 3 and 6 in group I and II respectively. The difference was non- significant (P> 0.05).

Table III Maternal and fetal outcome

Parameters	Variables	Group I	Group II	P value
Apgar score	<7	15	12	0.73
	>7	25	28	
NICU admission	Yes	10	6	0.91
	No	30	34	
Maternal complication	Cervical tear	3	7	0.71
	PPH	4	5	
	Perineal tear	1	2	
Perinatal morbidity	Birth asphyxia	3	8	0.09
	MAS	1	2	
	RDS	4	1	
	meconium stained liquor	2	3	

Table III, graph Ishows that Apgar score<7 was present in 15 and 12 and >7 in 25 and 28 in group I and II respectively. NICU admission was seen in 10 and 6.Maternal complications were cervical tear in 3 and 7, PPH in 4 and 5, and perineal tearin 1 and 2. Perinatal morbidity was birth asphyxia in 3 and 8, MAS was 1 and 2, RDS in 4 and 1, and meconium stained liquor in 2 and 3 respectively. The difference was non- significant (P> 0.05).

Graph I Maternal and fetal outcome



DISCUSSION

The discovery of prostaglandins led to the development of medical techniques as an alternative to surgical abortion. Over the past 20 years, their utilization has changed, and a variety of medications have been employed for medical abortions in the first trimester.[6] The use of mifepristone, methotrexate, and other prostaglandins at varying dosages, methods, and intervals of administration has been investigated in a number of trials.[7] Over the years, a number of professional groups have advocated for the use of induction of labor when clinicians believe the dangers of waiting for spontaneous labor to begin outweigh the risks of using induction to reduce the period of pregnancy.[8]These conditions typically include prelabour rupture of the amniotic membranes, hypertensive problems, maternal medical issues, fetal demise, and gestational age of 41 weeks or more.[9,10]The present study was conducted to assess maternal and fetal outcome in vaginal misoprostol induced patient.

We found that education status was illiterate in 18 and 11, primary in 12 and 10 and high in 10 and 19 subjects in group I and II respectively. Status was booked in 27 and 25 and unbookedin 13 and 15. Socioeconomic status was upper in 10 and 19, middle in 14 and 12 and lower in 16 and 9. Bishop score was 1 in 20 and 17, 2 in 12 and 11, 3 in 2 and 1, 4 in 2 and 5 and 5 in 3 and 6 in group I and II respectively. In this study, Ho et al[11] examined the effectiveness of vaginal and oral misoprostol in terminating a second-trimester pregnancy following mifepristone pretreatment. Two groups of women who wanted to terminate their pregnancies in the second trimester were randomly assigned. Women were administered oral or vaginal misoprostol 200 pg every three hours for a maximum of five doses in the first 24 hours following oral administration of 200 mg of mifepristone for 36 to 48 hours. While vaginal misoprostol recipients received an oral placebo, those who received oral misoprosto1 also received a vaginal placebo (vitamin B61). Compared to the oral group (13 hours), the vaginal group's median induction-abortion interval (9 hours) was substantially shorter. Women in the vaginal group were far more likely to abort within 24 hours (90%) than those in the oral group (69%). Additionally, the vaginal group's median dosage of misoprostol (600 pg) was substantially lower than the oral group's (1000 pg). With the exception of breast discomfort and weariness, which were more prevalent in the oral group, there was no discernible difference in the frequency of adverse effects between the two groups. Of the women, 24.5% favored the vaginal approach and 76% chose the oral route.

We observed that Apgar score<7 was present in 15 and 12 and >7 in 25 and 28 in group I and II respectively. NICU admission was seen in 10 and 6. Maternal complications were cervical tear in 3 and 7, PPH in 4 and 5, and perineal tear in 1 and 2. Perinatal morbidity was birth asphyxia in 3 and 8, MAS was 1 and 2, RDS in 4 and 1, and meconium stained liquor in 2 and 3 respectively. El-Refaey H et al[12]investigated whether misoprostol, a synthetic prostaglandin E1 analogue, can reliably induce second trimester abortion in 70 women pre-treated with mifepristone, and whether different routes of administration affect the induction-to-abortion interval. Abortion was achieved in 97% [95% confidence interval (CI) 90-100%] of cases without resort to other prostaglandin agents. The mean induction abortion time for the studied population was 6.4 h (95% CI 5.6-7.0 h). No significant difference was found between two different routes of

administration, namely vaginal versus a combination of vaginal and oral. Misoprostol has a number of advantages over other prostaglandin preparations. Theyrecommend that, following pre-treatment with mifepristone, misoprostol is used as the prostaglandin of choice to induce abortion in the second trimester.

CONCLUSION

Authors found thatas gestational age increases, maternal morbidity such as postpartum hemorrhage, cervical and perineal tears, and perinatal outcomes like as birth hypoxia, RDS, MSL, and MAS are more common in the induction group than in the control group.

REFERENCES

1. Jain JK, Mishell DR. A comparison of intravaginal misoprostol with prostaglandin E2 for termination of second-trimester pregnancy. N Engl J Med 1994;331:290-3.
2. Creinin MD, Vittinghoff E. Methotrexate and misoprostol vs misoprostol alone for early abortion: A randomized controlled trial. JAMA 1994;272:1190-5.
3. El-Refaey H, Rajasekar D, Abdalla M, Calder L., Templeton A. Induction of abortion with mifepristone (RU486) and oral or vaginal misoprostol. N Engl J Med 1995;332:983-7.
4. Meinert CL. Clinical trials: Design, conduct and analysis. New York: Oxford University Press, 1986:71-89.
5. El-Refaey H, Hinshaw K, Templeton A. The abortifacient effect of misoprostol in the second trimester. A randomized comparison with gemeprost in patients pre-treated with mifepristone (RU486). Hum Reprod1993;8:1744-6.
6. Vrouenraets FP, Roumen FJ, Dehing CJ, vanden Akker ES, Aarts MJ, Scheve EJ. Bishop Score and risk of caesarean delivery after induction of labour in nulliparous women. ObstetGynaecol 2005;105(4):690.
7. Caughey AB, Sundaram V, Kaimal AJ, Cheng YW, Gienger A, Little SE, et al. Maternal and neonatal outcomes of elective induction of labor. Evidence report/technology assessment. 2009(176):1.
8. Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Menacker F, Kirmeyer S, et al. Births: final data for 2005. National vital statistics reports. 2007;56(6):1-103.
9. National Collaborating Centre for Ws, Children's H. National Institute for Health and Clinical Excellence: Guidance. Induction of Labour. London: RCOG Press National Collaborating Centre for Women's and Children's Health.; 2008.
10. Guerra G, Cecatti J, Souza J, Faundes A, Morais S, Gülmezoglu A, et al. Factors and outcomes associated with the induction of labour in Latin America. BJOG: An International Journal of Obstetrics & Gynaecology. 2009;116(13):1762-72.
11. Ho PC, Ngai SW, Liu KL, Wong GC, Lee SW. Vaginal misoprostol compared with oral misoprostol in termination of second-trimester pregnancy. Obstetrics &gynecology. 1997 Nov 1;90(5):735-8.
12. El-Refaey H, Templeton A. Induction of abortion in the second trimester by a combination of misoprostol and mifepristone: A randomized comparison between two misoprostol regimens. Hum Reprod1995;10:475-8.