Efficacy of Vaginal Misoprostol for Cervical Priming Prior to Termination of Pregnancy in First Trimester

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OBJECTIVE To study the efficacy of 400µg of vaginal misoprostol for cervical priming in first trimester surgical termination of viable and non-viable pregnancies in nulliparous women and in women with previous cesarean section. **METHOD** – Sixty women, 39 with viable pregnancies and 21 with non-viable pregnancies, who had elected to undergo surgical termination of pregnancy were recruited in the study. In all of them , 400µg of misoprostol was placed in the posterior fornix 3-4 hours prior to suction evacuation. Dilatation achieved by misoprostol was measured by Hegar dilator, starting in descending order from no.12. Note was made of side effects. The degree of cervical dilatation was the main outcome indicator and cervical dilatation of no. 8 Hegar dilator or greater was considered as successful dilatation. **RESULTS** – Overall success rate in achieving cervical dilatation of no. 8 Hegar dilator or greater was 76.6%. Women with non-viable pregnancies achieved significantly higher success rates and higher mean cervical dilatation than women with viable pregnancies (p value < 0.01%). Side effects were minimal. **CONCLUSION** – Vaginal misoprostol is an effective cervical priming agent prior to first trimester surgical termination of pregnancy.

Key words : misoprostol, cervical priming, vaginal, first trimester, surgical termination of pregnancy

Introduction

Mechanical dilatation of cervix before surgical abortion carries a risk of cervical injury and uterine perforation, more so in nulliparous women and in women with previous cesarean section[1]. Misoprostol is a new addition to the armamentarium of cervical priming agents.

The aim of this study was to determine the efficacy of 400 mg of vaginal misoprostol for cervical priming in first trimester surgical termination of viable and non-viable pregnancies in nulliparous women and women with previous cesarean section.

Material and Methods

The study population comprised of 60 women, either nulliparous or with one or two previous cesarean sections, in their first trimester of pregnancy, who had elected to undergo surgical termination of pregnancy.

Out of 60 women, 39 (65%) had viable pregnancies and 21 (35%) had non-viable pregnancies. The women's age ranged between 21 and 32 years. No woman had any medical risk factor and all had Hb > 10 gm%. Gestational age was established by LMP, clinical examination and sonography wherever indicated. All procedures were done as daycare surgeries. After taking informed voluntary written consent, 400 µg misoprostol was inserted in the posterior fornix of vagina after rinsing the tablet with normal saline and 3-4 hours later the woman was taken to the operation room for surgical termination of pregnancy. Note was made of side effects like nausea, vomiting, fever, shivering, pain and bleeding. Pain was classified as nil, minimal, moderate requiring no analgesics and severe needing analgesics.

Bleeding was classified as less than normal if no bleeding or only spotting occurred, normal if it amounted to soaking of one pad and more than normal if two or more pads were soaked. After inducing general anesthesia, putting the patient in lithotomy position and cleansing and draping, note was made of any products of conception at cervical os. The degree of cervical dilatation achieved by misoprostol was estimated by passing Hegar dilator in descending order, starting from no 12. Size of the largest dilator passed into cervical os without resistance was recorded as dilatation achieved. If cervix had dilated to no.8 Hegar dilator, no further dilatation was done. Pregnancy was evacuated by using appropriate size suction cannula. Check curettage was done at the end of procedure. Note was made of any excessive blood loss. Removed products of conception were examined and sent for histopathological examination wherever indicated. The patient was discharged after 3 hours.

For analytical purposes, two groups were made Group A, women with viable pregnancies and Group B, women with nonviable pregnancies.

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Degree of cervical dilatation was the main outcome indicator in both groups and cervical dilatation ≥ 8 Hegar dilator was considered as successful dilatation.

Results

Table I gives the mean gestational age and Table II gives the cervical dilatation achieved with misoprostol.

Group B (non-viable pregnancies) achieved significantly higher mean cervical dilatation of 9.67 mg

Table I : Mean gestational age

	Mean gestational age (weeks)
Group A(n = 39)	7.5
Group B(n = 21)	8.7
Total (n = 60)	7.9

Table II : Cervical Dilatation Achieved with Misoprostol

	No. 8 hegar dilator size or more	Mean Dilatation (mm)
Group A(n = 39)	27 (69.2%)	7.64
Group B(n = 21)	19 (90.4%)	9.67
Total (n = 60)	46 (76.6%)	8.35

than that achieved by Group A (viable pregnancies). P=0.035 (students 't' test). Also 90.4% in Group B achieved cervical dilatation of > 8 Hegar dilator as against 69.2% in Group B (p=0.056 cm; chi square test). Table III gives the side effects seen.

Discussion

Dilatation and vacuum aspiration still remains the most widely accepted method for first trimester pregnancy termination despite its inherent risk of cervical injury and uterine perforation. Nulliparas and women with scarred uterus have a higher risk of such complication. Current pharmacological approaches to cervical dilatation including mifepristone, gemeprost and dinoprostone have considerable drawbacks such as limited access, high cost and need for refrigeration. Misoprostol, a PGE_1 analogue has recently been added to the list of cervical priming agents.

The aim of our study was to determine the efficacy of vaginal misoprostol for preabortion cervical ripening. Our study subjects were nulliparous women and women with previous cesarean section. Out of 60 women, 39 had viable pregnancies and 21 had non-viable pregnancies. Gestational age ranged from 5 – 13 weeks, average being 7.5 weeks in group A (viable pregnancies) and 8.7 weeks in group B (non-viable pregnancies) (Table I)

The Royal College of Obstetricians and Gynecologists has recommended a dose of 800µg of vaginal misoprostol 3-4 hours before evacuation for cervical ripening[2]. We chose 400 µg dosage and did evacuation 3-4 hours later because of previous published studies concluding that administration of 400 µg of vaginal misoprostol 3-4 hours before surgery provides optimal dilatation with minima side effects and acceptable vaginal bleeding [3-7].

The mean cervical dilatation achieved for all study subjects was 8.35 mm. We considered successful dilatation of no. 8 Hegar dilator size or more which was

Table III : Side effects

Side effects	Degree	Group A (n=39)	Group B (n=21)	Total (n=60)
Pain	Nil	21 (53.8%)	11 (52.8%)	32 (53.3%)
	Minimal	13(33.3%)	6 (28.5%)	19 (31.6%)
	Moderate	4 (10.2%)	3(14.2%)	7(11.6%)
	Severe	5(12.8%)	1(4.7%)	6(10%)
Bleeding	Normal	12(30.7%)	4(19%)	16(26.6%)
	< Normal	25(64%)	15(71%)	40(66.6%)
	> Normal	2(5.1%)	2(9.5%)	4(6.6%)
Products of conception at external os		2 (5.1%)	4 (19%)	6(10%)

achieved in 76.6% of cases in all study subjects (Table II). Women with non-viable pregnancies achieved significantly higher mean cervical dilatation of 9.67 mm (p=0.035, students 't' test) and higher success rate of 90.4% (p=0.056; chi-square test) as against that achieved by women with viable pregnancies viz, 7.64mm and 69.2% respectively (p value < 0.01%). The reason for this perhaps is that physiological changes like placental degeneration and decidual sloughing which eventually lead to spontaneous expulsion are already underway in non-viable pregnancies.

Our results are consistent with other reports which achieved a success rate of 70-90% [3-6,8,9] in getting cervical dilatation of no. 8 Hegar dilator size or more

As regard side effects, only a minority of women experienced pain that required analgesics. Vaginal bleeding too was acceptable (Table III).

The literature review has established safety of misoprostol as compared to other cervical priming agents [3-7,10]. Toxic doses of misoprostol have yet not been determined. However cumulative doses upto 2200 µg administered over 12 hour period have been tolerated by pregnant patients with no serious side effects [11].

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