J Obstet Gynecol Ind Vol. 54, No. 6 : November/December 2004 Pg 586-589

Oral Misoprostol for Cervical Ripening Prior to Surgical Termination of Pregnancy (MTP)

Alka Pandey, *Shanti* Roy, *Anita* Singh, *Sharika* Roy

Uma Founation, Shivam Hospital and Research Center and Jan Chikitsha Hospital, Patna, (Bihar).

OBJECTIVE – To evaluate the efficacy of misoprostol as an adjunct to suction evacuation in termination of pregnancy of 12-14 weeks with previous cesarean section. **METHOD** – During the study period of 2 years from January 2002 to December 2003, 100 healthy pregnant women with 12-14 weeks gestation and a history of previous cesarean section were randomly assigned in two groups of 50 subjects each. Group I received 400 µg of misoprostol at bed time for preoperative cervical priming and were asked to attend next morning for pregnancy termination. Group II formed the control and did not receive any preoperative cervical priming. Main outcomes studied were cervical dilatation achieved by misoprostol, time required for suction evacuation and blood loss. Side effects, safety and cost effectiveness were also evaluated. **RESUTLS** – Just prior to the surgical procedure the mean cervical dilatation in group I was 9.42 mm and in group II 2.22 mm (p=0.02918). Mean blood loss in group I was 90.56 ml and in group II 124.92 ml. Time required for the surgical procedure in group I was 7.74 minutes and in group II 11.14 minutes. Pain and bleeding occurred in seven patients in group I. **CONCLUSION** – Misoprostol as an adjunct to vacuum evacuation in patients with previous cesarean section at 12-14 weeks gestation was safe and cost effective.

Key words : misoprostol, voluntary termination of pregnancy, vacuum evacuation.

Introduction

Voluntary termination of pregnancy (MTP) is one of the most commonly performed operations. World Health Organization estimates that around 50 million pregnancies are terminated each year in the world and around 100 to 200 thousand women die each year due to complications of abortion[1].

Suction evacuaton is being performed for terminating pregnancy up to 12 – 14 weeks but is associated with many complications. Dilatation of the cervix at time proves to be very difficult. Cervical priming with laminaria tent and prostaglandin analogues have been used to minimize this problem and make vacuum aspiration safer. This study has been done with an aim to evaluate the safety and efficacy of oral misoprostol for cervical priming prior to vacuum aspiration in scarred uterus.

Material and Methods

Between January 2002 to December 2003, 100 women with previous cesarean section and 12 to 14 weeks gestation were recruited for study. After counseling, informed consent was obtained. Thorough preoperative evaluation was done which included detailed history, physical examination and routine investigations. They were randomly allotted to one of the two groups.

Group I – formed the study group. It consisted of 50 women who were given 400 µg misoprostol orally at bed time for cervical priming. All the women were kept under strict vigilance. Suction evacuation was performed next morning.

Group II – consisted of 50 women who were treated as control and did not receive misoprostol for cervical priming before suction evacuation was performed.

The degree of cervical dilatation in both the groups was measured by noting the largest Hegar dilator that could be passed through the internal os without resistance. 100 ml of saline was used to flush the tube after completion of vacuum aspiration. Blood loss was calculated by substracting 100 ml from the volume of conceptus in the suction apparatus. Side effects and complications were recorded.

Results

The basic variables, age of the women, gestational age and parity were similar in both the groups. Table I shows that the distribution of women according to the number

Paper received on 09/09/2004 ; accepted on 01/11/2004

Correspondence :
Dr. Alka Pandey
O/543 Sachivalaya Colony, Kankarbagh,
Patna - 800020.
Tel. 0612 2353095

Table I. Number of Previous Cesarean Sections

	Number of women	Previous cesarean section		
		One	Two	Three
Study Group	50	35	12	3
Control Group	50	37	12	1

Table II. Baseline Cervical Dilatation at the time of Evacuation

	Number of cases	Range	Mean
Study	50	5-16 mm	9.4 mm
Control	50	1-4 mm	2-2 mm

P=-0.02918

Table III. Blood loss during Suction Evacuation

	Number of Women	Range (ml)	Mean (ml)
Study Group	50	70-150	90.56
Control Group	50	80-160	124.92

P=0.1388

Table IV. Time needed for suction evacuation (minutes)

	Number of women	Range	Mean
Study Group	50	4-14	7.74
Control Group	50	4-15	11.14

P = 0.0586

of previous cesarean sections was similar in the two groups.. The mean baseline cervical dilatation in the study group was 9.42 mm and in the control group 2.22 mm (P = 0.02918) (Table II).

The mean blood loss in the study group was 90.56 ml and in the control group 124.92 ml (P value = 0.1388 (Table III).

The mean time required to perform suction evacuation in the study group was 7.7 minutes and in the control group 11.14 minutes (P value = 0.0586). (Table IV).

In the study group, seven women experienced preoperative vaginal bleeding and pain. Nausea, vomiting, diarrhea, hyperpyrexia and shivering occurred in two women. In the control group, there was cervical trauma in two women, uterine perforation in one and retained products of conception in four. There was no scar disruption in any case in the study group.

Discussion

Complicatoins such as cervical injury and uterine perforation following vacuum aspiration increase with

advancing gestational age and the risk is even greater in a scarred uterus due to mechanical cervical dilatation. Pretreatment with prostaglandin analogues or a laminaria tent significantly facilitates the procedure.

Misoprostol E_1 is a prostaglandin analogue. It is cheap, orally effective, stable at room temperatue and has no broncoconstrictive action. It is used for prevention and treatment of gastric ulcer. It has uterocontractive action and now plays a very important role in obstetrics.

The present study evaluates the efficacy and safety of oral misoprostol as a cervical priming agent in cases of scarred uterus.

In our study, women in the misoprostol group had mean cervical dilatation of 9.42 mm vs 2.2 mm in the control group (p=0.02918). Oppegaard et al[2] have used 400 µgm of oral misoprostol for cervical priming 10 to 16 hours prior to surgical abortion in pregnancies of 7 to 12 weeks gestation and have found mean cervical dilatation to be 5.8 mm. Ngai et al[3] studied the effect of 400 µgm microgram oral misoprostol 12 hours prior to suction evacuation in 6 to 12 weeks gestation. In the treatment group, the mean cervical dilatation was 7.8 mm in nulliparas and 9.8 mm in multiparas versus 3.7mm and 6.0mm respectively in the control group.

In our study, blood loss was 90.56 ml in the misoprostol group and 124.9 in the control group. Ngai et al[3] found the median blood loss to be 20 ml and 28 ml respectively. This difference is probably because in our series the gestational age was greater and the volume of conceptus and liqor was more than that in their series.

In the present study, duration of the operative procedure was 7.74 minutes in the misoprostol group and 11.14 minute in the control group. Ngai et al[3] found the duration of suction evacuation to be 4.5 minutes in the study group and 5.5 minutes in the control group. This difference between the two studies is probably because in our series the gestational age was greater than that in their series.

In our series, seven women in the study group had preoperative bleeding associated with lower abdominal pain. Five fetuses were in the process of expulsion. Two women in the study group experienced pyrexia, diarrhea and vomiting. In the series of Ngai et al[3], there was lower abdominal pain, nausea and vaginal bleeding in few patients.

MacIsaac et al[4] conducted a randomized, double blind, placebo controlled study comparing 400 µgm oral misoprostol, 400 µgm vaginal misoprostol and a medium laminaria tent for dilating the cervix over 4 hours before surgical abortion of 7 to 14 weeks gestation. They found that vaginal misoprostol achieved a significantly greater mean dilatation than oral misoprostol and laminaria tent group.

Ngai et al[5] studied the optimal dose and route of administration of misoprostol for preoperative cervical dilatation and recommended 400 µgm misoprostol 3 hours prior to vacuum aspiration.

Lawrie et al[6] did not find any significant difference in cervical dilatation between 400 µgm oral misoprostol and 800 µgm vaginal misoprostol groups, but there was significant pain and heavier preoperative bleeding in oral misoprostol group.

Celentano et al[7] compared 800 µgm oral misoprostol with 1 mg vaginal gemeprost for cervical priming prior to surgical termination and found that oral misoprostol is more effective and is associated with fewer side effects and complications than intravaginal gemeprost.

Aronssan et al[8] have studied the effect of misoprostol administration by different routes on pregnant uterus contractility. They found that regular uterine contractions developed in all women following sublingual and vaginal administration but not after oral administration. But we have found that oral misoprostol is effective in inducing uterine contractions.

It has been reported in literature that the use of misoprostol to induce labor in women with previous cesarean section has resulted in scar disruption[9]. In our study group, scar dehiscence did not occur in any woman who used misoprostol for cervical priming, even in women having two or three cesarean sections. Probably the ingestion of misoprostol in 12 to 14 weeks pregnant uterus did not subject the scar to stress and therefore rupture did not occur. The blood loss and duration of suction evacuation were more in our series than those in other series as the gestational age was more in our studies.

Manual dilatation of pregnant cervix may cause cervical trauma, uterine perforation and incomplete evacuation with possibilities of prolonged bleeding, sepsis and long term sequelae of cervical incompetence.

Misoprostol ripens the cervix and initiates uterine contractions making late first trimester and early second trimester abortion safe and complete. Four hundred microgram oral misoprostol at 12 to 14 weeks gestation was found to be effective and safe.

References

1. Segal SJ, Laguardis KD. Termination of pregnancy - a global view. Baillieres Clin Obstet Gynecol 1990; 4: 235-47.
2. Oppeggard KS, Abdelnoor M, Nesheim BI et al. The use of oral misoprostol for preabortion cervical priming: randomized controlled trial of 400 versus 200 microgram in first trimester of pregnancy. *Br J Obstet Gynecol 2004; 111: 154-9.*
3. Ngai SW, Tang OS, Lao et al. Oral misoprostol versus placebo for cervical dilatation before suction aspiration in first trimester pregnancy. *Hum, Reprod. 1995; 10:1220-2.*
4. MacIsaac L, Grossman D, Balisteri E et al. A randomized controlled trial of laminaria, oral misoprostol and vaginal misoprostol before abortion. *Obstet. Gynecol 1999; 93: 766-70.*
5. Ngai SW, Chan YM, Tang OS et al. The use of misoprostol for preoperative cervical dilatation prior to vacuum aspiration: a randomized trial. *Hum Reprod. 1999 14: 2139-42.*
6. Lawrie A, Penney G, Templeton A. A randomized comparison of oral and vaginal misoprostol for priming before suction termination of pregnancy. *Br J Obstet Gynecol. 1996; 103: 2139-9.*
7. Celentano C, Prefumo F, Do Andrea P et al. Oral misoprostol versus vaginal gemeprost prior to surgical termination of pregnancy in nullipara. *Acta Obstet Gyneol Scand 2004; 83: 764-8.*
8. Aronssan A, Bygdeman M, Gemzell – Danielsson K. Effects of misoprostol on uterine contractility following different routes of administration. *Hum Reprod. 2004; 19: 81-4.*
9. Wing DA, Lovett K, Paul RH. Disruption of prior uterine incision following misoprostol for labor induction in women with previous cesarean delivery. *Obstet Gynecol 1998; 91: 828-30.*