Original Article

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A Randomized Clinical Trial of 200 Patients of Oral Vs Vaginal Misoprostol in Second Trimester Pregnancy Termination

Iffat Usmani
Asstt. Prof. Obs & Gynae, Unit-IV, Bolan Medical College and Complex Hospital Quetta

ABSTRACT

Objective: To assess the safety, effectiveness and the factors that affect the outcome of Misoprostol both oral & vaginal route for second trimester pregnancy termination.
Study Design: Randomized study.
Place and Duration of Study: This study was conducted at the department of Gynae & Obst Unit IV Bolan Medical College Complex Hospital Quetta between July 2009 to December 2011.
Materials and Methods: The patients were randomized to receive either oral or vaginal Misoprostol (400ug) every 4 hours for maximum 5 doses. The course of Misoprostol was repeated where women did not abort within 24 hours.
Results: The study includes 200 cases in each group of oral and vaginal route of Misoprostol administration. There was no significant difference in mean maternal age, number of pregnancies, parity and duration of pregnancy or history of first trimester between both groups. There was no significant difference in the success rate at 48 hours (oral 65%, vaginal (70%). However, the success rate at 24 hours at vaginal group (70%) corresponds with oral group (50%).
Conclusion: Misoprostol is a safe and effective regimen for second trimester medical miscarriages. Vaginal route resulted in higher success rate then the oral route at 24 hours, however the miscarriage rate was similar at 48 hours.
Key Words: - Misoprostol, second trimester pregnancy, medical induced abortion.

INTRODUCTION

Misoprostol is a non steroidal anti inflammatory drug used for the prevention of drug induced gastric ulcers, for early abortion, labour induction and to treat miscarriages.[1]

Various methods are used for the termination of first and second trimester miscarriages. They include vacuum curettage, dilatation and evacuation and induction with prostaglandin-E2.[2] Dilatation and evacuation even in experienced hands may result in cervical lacerations, uterine perforation and injury to abdominal viscera.

Misoprostol is a synthetic analogue of naturally occurring prostaglandin E-1. It is being used to induce medical abortion by various route of administration. In comparisons to other PG analogues, its use is safe, effective, easily available, simple to use, fast acting, stable at room temperature, cost effective and having few side effects[1,2] The side effects of Misoprostol, such as fever nausea, vomiting, abdominal pain and rarely uterine rupture are still of concern.[3,4]

Recent studies have demonstrated greater bio availability of vaginally administered Misoprostol, three times higher than that of orally administered Misoprostol.[5,6,7]

Therefore we decided to conduct a study to assess the safety, efficacy and rate of complications of Misoprostol, both orally and trans-vaginally in termination of second trimester pregnancy.

MATERIALS AND METHODS

This study was conducted at the department of Gynae & Obst Unit IV Bolan Medical College Complex Hospital Quetta, between July 2009 to December 2011.

Patient with history of previous uterine surgery, asthma, heart disease, un-controlled hypertension, grand multiparty, renal and hepatic impairment, were excluded from the study. Patients who fulfilled all the inclusion criteria (missed abortion, intra- uterine fetal death, congenitally abnormal babies) were included in this study Patient were admitted via emergency and OPD. Detailed history and physical examination was performed. Women who fulfilled the entry criteria were counseled and written informed consent was obtained from each participant.

We recorded maternal demographics (age, parity, gestational age), the indication for termination (fetal death, fetal anomaly, or early rupture of membranes), antibiotics use, incidents of side effects (headache, vomiting, fever, shivering). The success rate includes induction-abortion interval at 24-48 hours. The studied population comprised women with 13 to 26 week's pregnancy.

The patients were assigned into two groups of 100 cases in each group. In group-1 women were given 400ug Misoprostol orally, while in group-II, women were given 400ug Misoprostol per vaginally, four hours apart in total five doses in 24 hours. If the women did not abort after the first course the same regimen was repeated after 24 hours. The blood pressure, pulse rate

and temperature were monitored every 3 hours. Pentazocin 15mg intramuscular was given for pain relief if necessary. After expulsion, the products of conception were examined and in cases where not complete, evacuation of the uterus was performed after making decision on clinical findings and pelvic ultra sound examination. The women were discharged 24 hours after the miscarriage, if there were no complications, follow-up was advised after two weeks.

Those who failed to abort after two courses of Misoprostol, were given a rest of 24 hours, in case of failure, either folley's catheter was applied or Glandin E2 was given vaginally.

Success rate was defined as abortion occurring without the need of further Misoprostol or syntocinon. The side effects and acceptability of two regimens were also assessed.

RESULTS

From July 2009 to December 2011, 200 patients for second trimester abortion were admitted. Majority of the patients n= 79(80.5%) were in age range of 26-35 years. Mean age was 32 years with SD ± 1.26. (Table-1)

Status of parity was analyzed as most of the patients n=104(52%) were between GI to GIII. (Table-2)

The mean estimated gestational age, as determined by ultrasound examination n=121 (60.5%) were between 13-18 wks (Table 3)

The mean induction abortion interval was14.4 hrs in oral group and 18 hrs in vaginal group (range 8-42 hrs). Complete abortion in 48 hours was found more effective in vaginal as compare to oral group (Table-4)

Side effects of oral Misoprostol were found more as compare to vaginal group. As, in oral Misoprostal group, nausea was found in 8%, vomiting 3%, diarrhea 10%, headache 2%, shivering 26%, fever 20%, abdominal pain and cramping 50% where as in vaginal Misoprostol group diarrhea was found in 4%, shivering 10%, fever 12%, abdominal pain and cramping 48%. (Table-5)

Table No I: Age Distribution

Age.	Oral	Vaginal	N
15 to 20	6 (6%)	7(7%)	13(7.5%)
21 to 25	12(10%)	14(14%)	26(13%)
26 to 30	49(39%)	31(31%)	80(40%)
31 to 35	33(33%)	48(48%)	81(40.5%)
Total	**100**	**100**	**200**

Table No 2: Parity

Parity	Oral	Vaginal	N
G-I & G-II	12(12%)	20(20%)	32(16%)
III Gravida	32(32%)	40(40%)	72(36%)
IV Gravida	45(45%)	30(30%)	75(35.5%)
V Gravida	11(0%)	10(0%)	21(10.5%)
Total	**100**	**100**	**200**

Table No 3: Period of Gestation:

POG in Weeks	Oral	Vaginal	N
13-15	37(20%)	30(0%)	67 (33.5%)
16-18	29(0%)	25(0%)	54 (27%)
19-23	15(9%)	20(0%)	35 (17.5%)
24-26	12(0%)	15(0%)	27 (13.5%)
Total	**100**	**100**	**200**

Table No 4: Efficacy of Medical Abortion

Efficacy of medical abortion.	Oral	Vaginal	P Value
Induction-abortion interval	14.4h	18.0h	0.000
Complete abortion in 24h	50(50%)	70(70%)	0.003
Complete abortion 48h	65(65%)	70(70%)	0.001
Incomplete abortion	5(5%)	10(10%)	0.001

Table No 5: Incidence of Side effects

Side Effects.	Oral	Vaginal	%
Nausea	8(8%)	0	8
Vomiting	3(3%)	0	3
Diarrhea	10(10%)	4(4%)	14
Headache	2(2)	0	2
Shivering	26(26%)	10(10%)	36
Fever > 38	20(20%)	12(12%)	32
Abdominal cramping and pain lower abdomen	50(50%)	48(48%)	98

DISCUSSION

Although Misoprostol is licensed for oral use however, vaginal and sublingual administration is also being used. The usefulness of Misoprostrol for the second trimester pregnancy termination has been demonstrated in different studies done by Maclsaac I et al[8] and Tang OS et al [9].

In this study we used 400ug Misoprostol both orally and vaginally in 100 cases of each group.

In some studies, larger doses such as 600 and 800ug of Misoprostol have been used for the second trimester pregnancy termination, as in study done by Dickinson JE[10]. But these doses were associated with high rates of fever nausea, vomiting and diarrhea. In our study side effects in oral group were found more frequently as compare to vaginal group.

Our study shows that women carrying dead fetus delivered more readily when under going termination of pregnancy in second trimester. Similar results were found in study done by Cheung W et al[11]

The success rate for oral versus vaginal Misoprostol, was in group A 94.4% as compare to group B was 86.8% study done by Hemlata et al[12]. In comparison of above mentioned study our study shows success rate of oral group 65% and vaginal group 70% in 48 hours.

A study by N. shah et al[13] shows success rate in second trimester termination of pregnancy with sublingual Misoprostol 64% and vaginal 84%.

In the case of pretreatment with Mifepristone, vaginal Misoprostol is more effective than oral Misoprostol in mid tremester termenation of pregnancy.[14] But Mifepristone is not available in Pakistan.

All the patient on discharge were prescribed prophylacticaly oral cephradine 500mg TDS, and were given a follow up appointment in OPD, out of which 80 (40%) attended hospital. Two patients of the vaginal group complained of prolonged bleeding but does not require any transfusion. Successful treatment was defined as complete uterine evacuation (confirmed by ultra sonography). Need for surgical curettage, failure to abort or retained products of conception were taken as failure.

Our study shows that Misoprostol is effective for second trimester miscarriage, both orally and vaginally. Vaginal route is preferable because it requires lesser doses and produces a shorter induction - abortion interval. Similar observation were observed by Maclsaac et al [8] and Edwards RK et al[15]

CONCLUSION

Given its low cost and ease of use, Misoprostol has the potential to improve woman's health worldwide since it is a safe method of second trimester pregnancy termination.

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Address for Corresponding Author:
Dr. Iffat Usmani,
Asstt. Prof. Obs & Gynae,
Bolan Medical Complex Hospital Quetta