

Study of efficacy of misoprostol in reduced dose via vaginal route in first trimester abortion

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Abstract

Objective: The present study is prospective study of Misoprostol in reduced dose via vaginal route to minimise side effect in first trimester abortion.

Materials and Method: 200 mg of mifepristone given orally followed by 400 mg misoprostol intra virginally after 24 hours, and after 24 hrs of vaginal misoprostol 400 mg of misoprostol was given orally.

Result: The 140 women were analyzed, 134 of these women had complete abortion after completion of the treatment regimen, and success rate of 95.7% was achieved.

Conclusion: Use of 400 mg misoprostol vaginally after 24 hours of oral mifepristone, have less side effect and effective result for medical abortion in first trimester abortion.

Keywords: Misoprostole, Mifepristone, 1st trimester abortion,

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Introduction

Abortion (MTP) is the commonly performed procedure in gynaecological department. Surgical procedure has been used for termination of pregnancy; this procedure has significant complications, including profuse bleeding, uterine perforation, retained products of conception etc. Now the medical procedure of pregnancy termination has become more popular than surgical procedure. Medical procedure with Mifepristone and Misoprostol is frequently used for the termination of 1st trimester pregnancy.

The medical abortion means early pregnancy termination with the use of abortion inducing medications.⁽¹⁾ Medical abortion is an important alternative to surgical methods. The World Health Organization (WHO) recommends an initial dose of Mifepristone 200 mg orally followed by Misoprostole 800mg orally 36 to 48 hours later, for early medical abortion. The WHO approved both mifepristone and Misoprostol for early pregnancy termination and including them in the list of Essential Medicines in 2005.⁽²⁾

The action of Mifepristone is to bind with the progesterone receptors, thus inhibiting the effect of progesterone. It also increases the sensitivity of exogenous prostaglandins on myometrium, thus, in early pregnancy, Mifepristone results in regular uterine contractility and increased sensitivity of prostaglandins on myometrium.⁽³⁾ Along with this Misoprostole which is a synthetic prostaglandin and has cervical ripening action, helps in termination of pregnancy.

The medical abortion is increasing day by day to terminate early pregnancy due to its effectiveness and

easiness in taking them. Many studies shows that oral administration of mifepristone 600 mg, followed by the oral use of misoprostol 400 mg 36 to 48 hours later, results in a complete abortion rate of 87 to 96% at up to 49 days of gestation.⁽⁴⁻⁷⁾ On the other hand some studies using a lower dose of mifepristone are equivalently effective.⁽⁸⁻¹⁰⁾ Some other authors use alternative route of administration of misoprostol, including vaginal, buccal, and sublingual route. These studies show that the vaginal use of misoprostol slow down the absorption, but increases duration of high-serum concentration because this route avoids metabolism by the liver. The vaginal bioavailability of misoprostol is three times greater than the oral bioavailability;⁽¹⁰⁾ these studies support that vaginal route of misoprostol has a relatively higher success rate for early pregnancy abortion than oral route. One Study shows a 97.8% abortion rate by the concurrent use of mifepristone 200 mg orally and misoprostol 800 mg vaginally in early pregnancy abortion.⁽¹¹⁾ The use of lower dose of vaginal misoprostol reduces the adverse effects. Any adverse effects associated with early pregnancy abortion using mifepristone and misoprostol, such as nausea, pain abdomen, and pain from uterine contractions, may be related to the dose of misoprostol and the route of its use.⁽¹²⁾ Some studies shows more adverse effect on Vaginal administration of misoprostol 800 mg;⁽¹³⁻¹⁵⁾ So in this study we are using mifepristone 200 mg orally followed by misoprostol 400 mg vaginally in order to determine the effectiveness and its adverse effects.

Materials and Method

The pregnant woman with early pregnancy requesting for medical abortion were considered for this study. Total 176 women were enrolled. These patients underwent ultrasonography for confirmation of pregnancy.

Women who have any complication of pregnancy like ectopic pregnancy, suspicion of threatened abortion, or pregnancy more than 9 weeks or any health related problem were excluded.

The rest women had signed an informed consent,

They had been informed about advantages and risks of medical abortion and the necessity of surgical abortion if the medical abortion failed.

Procedure used for medical abortion was 200 mg of oral mifepristone followed by 400 mg Misoprostole vaginally after 24 hours, and 400 mg of misoprostol was given orally 24 hrs after vaginal misoprostol.

The women taking this course of medicine were advised to come after 5 days. They were clinically examined. They were questioned regarding side effects. Ultrasonography was done to confirm complete abortion.

Patient with incomplete abortion or with any side effect were advised to come again after 7 days and again examination of patient was done.

Patient with complete abortion were classified as treatment success and patient requiring surgical intervention were classified as treatment failure.

Observations and Result

A total number of 176 patients were enrolled.

Out of the 176 enrolled patients 22 did not fulfil the inclusive criteria, remaining 154 were given medical abortion, out of these 14 did not come for follow-up and were not included in analysis, 140 participants completed this study.

Table 1: showing age group distribution and their Percentage

S. No.	Age of women (Years)	No. of Patients	Percentage
1	18-20	11	7.9%
2	21-24	40	28.6%
3	25-30	54	38.6%
4	31-35	25	17.8%
5	36-40	10	7.1%

It showed that maximum number of patient taking medical abortion were of 25-30 years of age. They were followed by participants of 21-24yr of age group. Least number of ladies was in age between 36-40yr seeking medical abortion.

Table 2: Showing gestation age distribution and their percentage

S. No.	Age of gestation (weeks)	No. of Patient	Percentage
1	< 5 weeks	32	22.9%
2	< 6 weeks	63	45.0%
3	< 7 weeks	27	19.3%
4	< 8 weeks	10	7.1%
5	< 9 weeks	8	5.7%

It showed that maximum number of patient taking medical abortion within 6 weeks of pregnancy, showing increasing awareness for medical abortion.

Table 3: showing Percentage of success

S. No.	Age of gestation (weeks)	Complete Abortion	Percentage	Total success
1	< 5 weeks	32	100%	95.7%
2	< 6 weeks	62	98.4%	
3	< 7 weeks	26	96.3%	
4	< 8 weeks	8	80%	
5	< 9 weeks	6	75%	

It showed that as the gestation age increases success rate decreases. Overall success rate is 95.7%.

Success Rate: The 140 women were analyzed, after completion of the treatment regimen 134 of these women had complete abortion, and success rate of 95.7% was achieved.

6 women opted for dilatation and curettage, 5 due to incomplete abortion and haemorrhage, and one due to patient request.

With the use of this regime there is no or minimal side effect were observed by patients, only few women had heavy bleeding during this procedure and some had bleeding for more than 7 days.

Discussion

There are many studies with different doses and different route of administration of mifepristone and Misoprostole with the aim of getting effective result in first trimester abortion, and minimum side effects.

Murthy and associates⁽¹⁴⁾ in 2005 studied 40 women with pregnancies less than 7 gestational weeks. They used mifepristone 200 mg orally and concurrent use of misoprostol 800 mg vaginally. They got 98% of success rate after 2 weeks. In their study one woman required dilatation and curettage because of incomplete abortion.

Schreiber and colleagues⁽¹⁵⁾ in 2005 studied 80 women making two group, group 1 have 40 pregnant women of 50-56 days' gestation and Group 2 have 40 pregnant women of 57-63 days' gestation. They used mifepristone 200 mg orally and immediate use of misoprostol 800 mg via vaginal route. The success rates were 93% and 90% in Groups 1 and 2, respectively.

Previous studies also shows that use of Misoprostole vaginally have better results than oral Misoprostole in

first trimester abortion. Vaginal use of Misoprostole reduces the time of abortion.⁽⁴⁾ So the vaginal use of misoprostol is shortening the time for medical abortion, which also reduces patient anxiety. In USA also misoprostol has been widely used vaginally, because it is more effective and more acceptable.⁽¹⁶⁾

In our study we used 200 mg of mifepristone orally followed by 400 mg Misoprostole vaginally after 24 hours, and an oral dose of Misoprostole 400 mg on day 3rd. This regime has success rate of 95.7% up to 9 weeks of pregnancy. The efficacy of this regime is comparable with other studies and adverse effects were drastically reduced. The high dose of misoprostol causes more side effects.⁽¹²⁾ So high dose of Misoprostole should be avoided.

The women who want to avoid dilatation and curettage, i.e. surgical intervention uses medical abortion and feels satisfied regardless of the regimen used. In our study also 95% of women were satisfied with our regime. The use of misoprostol 400 mg vaginally is more effective and with lesser side effects.

Conclusion

As per our study, use of Misoprostole in two divided doses, 400 mg vaginally and 400 mg orally after oral mifepristone, has lesser side effects and is effective for medical abortion up to 9 weeks of pregnancy.

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