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RESEARCH ARTICLE

Clinical Efficacy of Misoprostol in Second Trimester Abortion

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ABSTRACT

Study was conducted from February, 2013 to April, 2013 at Sheth L.G. Hospital, AMC MET Medical College, Ahmedabad, Gujarat. A total of 50 patients, at 13-28 weeks of gestation, requiring termination of pregnancy were included in study protocol. Major indications for termination of pregnancy were intrauterine death of fetus, severe preclamsia and congenital anomaly. Each woman received first dose of 400 µg of misoprostol vaginally and were repeated every 4 hours as per need till induction of abortion. Abortion was seen in 13(26%) patients with induction to delivery period of less than 12 hour. Out of 50 women, 20 (40%) have been aborted in between 12 to 16 hours of drug administration. Whereas in 10(%) women, termination of pregnancy was found in between 16 to 20 hours. Though in 7(14%) patients, pregnancy was terminated after 20 hours. It was found complete and incomplete abortion in 43(86%) and 7(14%) cases, respectively. Observed side effects included G.I. disturbances and fever in 10(20%) and 15(30%) cases, respectively. Overall per vaginal administration of misoprostol was found clinically safe , efficacious and a cost effective for induction of second trimester abortion.

KEYWORDS

Efficacy, Misoprostol, Abortion, Second-Trimester

INTRODUCTION

Termination of pregnancy for various, fetal as well as maternal conditions, is a common obstetrical problem. Abortion is defined as 'termination of pregnancy by any means before the fetus is viable'. Viability is now considered to be reached at 23-24 weeks of gestation. Second trimester or mid-trimester is a period ranging from 13 to 28 weeks? Induction of abortion, the single most common procedure performed over women worldwide, needs meticulous and effective care. Many studies have been done for 2nd trimester abortion; still there is search for safer and cost effective method for second trimester abortion. Second trimester abortion gives a psychological blow to the patient. It is associated with more abdominal pain and it persists for longer time till abortion completes.

Misoprostol was used successfully for induction of second trimester abortion.[1-3] Misoprostol is a synthetic PGE1 analogue (15-deoxy-16-hydroxy-16-methyl PGE1) which induces cervical ripening as well as strong uterine

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contractions and leads to expulsion of a pregnancy. Misoprostol can be absorbed by many routes, and has different pharmacokinetic properties in each route. Misoprostol is absorbed the fastest via sublingual route. Orally, it is slowly absorbed than sublingual, but faster than vaginal/rectal routes.

The vaginal or rectal route leads to a lower peak level of MPA (misoprostol acid), but has a much slower elimination curve.[4] There are some reports that repeated doses of vaginal misoprostol may be inferior to repeated buccal/sublingual doses due to vaginal bleeding and subsequent degradation of vaginal absorption.[4-6]

The above information is important because it can predict the side effect profile and speed of onset of the drug. Oral or sublingual drug administration leads to higher levels and speedy onset of drug action, but associated with greater side effect (predominantly fever and chills). Hence it is inevitable to study misoprostol with per vaginal administration for induction of abortion for induction of second trimester abortion.

MATERIALS AND METHOD

This study was carried out at Sheth L.G. Hospital, AMC MET Medical College, Ahmedabad, Gujarat. In present study, fifty female patients having had medical indications for termination of pregnancy were included. All of them were having pregnancy of 13-28 weeks. Abortion was needed in all the cases either due to medical reasons or due to pregnancy failure. All the patients underwent per abdomen, per speculum and per vaginal examination and then ultrasonography was done.

All the patients were given 400 µg misoprostol drug which was kept per vaginally and repeated at every 4 hours up to the induction of abortion. Some patients were excluded from the misoprostol treatment study. The exclusion criteria were patients having previous uterine scar, history of allergy to misoprost, excessive bleeding from vagina and or chorioamnionitis. Statistical analysis was performed using Microsoft excel and values are expressed as percentage.

RESULTS

A total of 50 pregnant women having history of 13-28 weeks gestation period were taken in the study where in abortion was needed either due to medical reasons or due to pregnancy failure. Major indication for termination of pregnancy was intrauterine death of fetus (in 76 % cases) whereas severe preclamsia and congenital anomaly were found in 14 and 10 % of cases, respectively (Table 1).

In 7 (14%) cases, maximum dose of misoprostol(>2000 µg) was required whereas in 13 (26%) cases, minimum dose of misoprostol (< 1200 µg) was required. 20 (40%) women got aborted successfully with the misoprostol dose of 1200-1600 µg whereas 10 (20%) women required 1600-2000 µg dose of misoprostol (Table 2).

Time interval between inductions to abortion was varied from <12 to >20 hours (Table 2). In majority of the patients (43 cases; 86%) abortion was found complete whereas in only 7(14%) cases, in was found incomplete. None of the patients died due to any complications. Some minor complications like G.I. side effects and fever were found in 10 (20%) and 15 (30%) cases, respectively.

Table 1: Indication for termination of pregnancy

No.	Indication	No. of cases	%
1	Intrauterine death	38	76%
2	Severe preeclampsia	7	14%
3	Congenital anomaly	5	10%

Table 2: Total dose of misoprostol required for termination of pregnancy and time interval between inductions to abortion

Dose (in µg)	Interval between induction to abortion(hrs)	No of patients	Percentage
<1200	<12	13	26%
1200-1600	12-16	20	40%
1600-2000	16-20	10	20%
>2000	>20	7	14%

DISCUSSION

Termination of pregnancy by induced abortion is practiced worldwide. Induced abortion, either elective or therapeutic termination of viable pregnancy, is one of the most ancient procedures. Worldwide midterm abortion constitutes 10-15% of all induced abortion but is responsible for two-thirds of all major complications.[7] Misoprostol is a synthetic PGE_1 analogue, initially developed for the prevention and treatment of peptic ulcer and later used as an abortifacient. It has several advantages over other PGs. It is cheap, efficacious, stable at room temperature, can be stored for a long time and having few side effects.

Clinical efficacy of misoprostol is more while administering vaginally than oraly.[8-12] In present study, results of using metoprostol by vaginal route are highly encouraging with least side effects and complications. In this study the successful abortion rate was 86%. Previously the success rate of induction of abortion was found ranging from 68 to 83% with misoprostol given per vaginally.[13-14]

CONCLUSION

Misoprostol is an excellent drug for abortion of pregnancy during second trimester as it causes high percent of complete abortion, within shorter time and with lesser chance of complications and side effects. So, this drug can be safely and effectively used in second trimester for abortion provided exclusion criteria are fulfilled. This drug has advantages like it is cost effective, effects are reversible when kept in vagina, and side effects are few and mild.

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