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Comparison between 24 and 48 hours interval between mifepristone and misoprostol for induction of abortion

Abstract

Objective: Comparison between 24 and 48 hours interval between mifepristone and misoprostol for induction of labour.

Method: It is a randomized controlled trial of 100 women-50 in each group. 1 group took mifepristone and misoprostol tablets at 24 hours interval and second group took them at 48 hours interval.

Result: The two groups were found comparable for age, parity, period of gestation, blood loss, requirement of blood transfusion and pain. But shortening the drug abortion interval will allay their apprehension about the success of failure, pain, amount of bleeding etc.

Conclusion: Home abortion increase autonomy and women' s self care ability. The home environment increased their privacy and decreased interval decreased the stress of waiting.

Keywords: Mifepristone, Misoprostol, Interval, Induction of Abortion

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Introduction

Provision of safe abortion to the full extent of the law is an important component of reproductive health services. The development of methods of inducing abortion by medical means has created alternative options to make abortion available to women in health-care settings. Ideally, any method of medical abortion should have an overall efficacy comparable to that of surgical method, i.e. a rate of complete abortion of more than 95% and an ongoing pregnancy rate of less than 1%. The combination of mifepristone and misoprostol is now a well-established method for medical abortion in many countries. It has been shown by various studies to be a safe and effective method for the termination of pregnancy.

Progesterone is fundamentally important for sustaining a pregnancy in first trimester. Withdrawal of progesterone support results in expulsion of embryo by a prostaglandin mediated mechanism. Inhibition of progesterone effects is accomplished by preventing its synthesis or blocking its action at the receptor. Mifepristone, a derivative of norethindrone, binds to the progesterone receptor with an affinity greater than that of progesterone itself without activating the receptor, thereby acting as an 'antiprogestin'. Mifepristone has several other effects on the uterus and cervix during pregnancy. First, mifepristone alters the endometrium directly by effecting the capillary endothelial cells of the decidua, separation of trophoblast from the decidual, causing bleeding and a decrease in the human chorionic gonadotropin secretion into the maternal system. The decidual reaction also increases prostaglandin release. Beside it, Mifepristone softens the cervix to allow expulsion. Mifepristone is not an effective treatment for extrauterine pregnancy. After oral intake peak plasma concentration is achieved within 1-2 hours, Half life of Mifepristone is 20-30 hours.[1]

Misoprostol is a synthetic prostaglandin, which induces uterine contractions and expulsion of uterine contents and is used in combination with mifepristone for medical abortion.

Aim

Primary outcomes

a. To compare success rates (complete abortion rates),

b. Drug-Abortion interval

Secondary outcome

Acceptance of regimes of medical abortion with intervals of 24 and 48 hours between Mifepristone and Misoprostol intake.

Materials and methods

This study was done at Asian Institute of Medical Sciences, Faridabad. Informed written consent was taken from all participants who attended OPD with early pregnancy and wanted abortion by medical method.

Inclusion criteria

a. Single Intra uterine pregnancy

b. Gestation less than 63 days gestation.

c. Age18 years or more.

d. Pregnant women requesting for early termination of pregnancy by taking medicines as per the guidelines of the MTP act.

e. Women were made to understand that once she takes Mifepristone she has to undergo termination and cannot change her mind and continue the pregnancy as Mifepristone is teratogenic.

f. Women should be willing to have a surgical procedure, incase the medical method fails or results in incomplete abortion.

g. Women should have access to a telephone and emergency medical treatment in case of excessive bleeding or pain.

Exclusion criteria

a. Extrauterine pregnancy
b. Pregnancy more than 63 days gestation.
c. Known case of epilepsy.
d. Known allergy to Mifepristone or prostaglandin analogue or known hypersensitivity.
e. Patient on anticoagulants or steroids.
f. Known case of bleeding disorder.
g. Inherited porphyrias
h. Chronic renal insufficiency
i. Women smokers over the age of 35years
j. Undiagnosed adenexal mass
k. IUCD in situ.
l. Chronic adrenal insufficiency
m. Acute liver disease
n. Cardiovascular disease e.g. arrhythmia, angina etc.
o. Lack of access to emergency care.

USG was done for all women to confirm presence of intrauterine pregnancy and the gestational age. Blood group of all patients was done. All medicines were taken orally at home. It was a randomised controlled trial of 150 women- 75 in each group. One group took Mifepristone and Misoprostol tablets at 24 hours interval and second group took then at 48 hours interval.

Regimen

Mifepristone 200mg orally followed by misoprostol 800 microgram orally after 24hours in group A and after 48 hours in group B. They were advised to come for emergency care in case of excessive bleeding per vaginum or unbearable pain in abdomen. Ultrasonography was advised after 15 days to rule out retained product of conception. Patients were interviewed for amount of blood loss and intake of medicine for pain. Failure was considered in those where pregnancy was found intact in uterine cavity on USG.

Observations

The two groups were found comparable for age, parity, period of gestation, blood loss/ requirement of blood transfusion and pain. All statistical calculations were done using computer program SPSS (statistical package for the social sciences; SPSS Inc, Chicago IL, USA) version 21. Data was statistically described in terms of frequencies (number of cases) and percentages. Fisher exact test was applied for the comparison of qualitative data in case of 2*2 tables. P value of <0.05 was taken as level of significance (Table 1).

Table 1 Drug-Abortion Interval

	Group A		Group B	
Induction abortion interval	**No of cases**	**%Age**	**No of Cases**	**%Age**
< 24 Hours	71	94.66	74	98.66
>24 Hours	4	5.34	1	1.34

On comparison amongst those who aborted after 24 hours sample proportion difference were 0.04. 95% confidence interval was 0.0175 – 0.0975. z value is 1.4 and p value 0.366. No significant difference between two groups. In group A out of 75 cases 74(98.66%) cases were reported as complete and 1 (1.34%) cases were reported as incomplete abortion. In group B-71 (94.66%) out of 75 cases aborted completely and 4(5.34%) cases were reported as incomplete abortion (Table 2).

Table 2 Success Rate

Results	No. of Cases	Percentage (%)
Complete abortion	71	94.66
Incomplete abortion	4	5.34
Total	75	100

	Group A	Group A	Group B	Group B
Result	**No of cases**	**%Age**	**No of cases**	**%Age**
Complete abortion	74	98.66	71	94.66
Incomlete abortion	1	1.34	4	5.34

To compare data from Group A and Group B, we applied chi square test and found that the difference in both the groups was non-significant at 95%confidence interval value of 0.454 to 38.23 (p value = 0.366), which is also nonsignificant.

All women were questioned about their experience and all of the 100 women expressed their opinion that shortening the drug abortion interval will allay their apprehension about the success or failure, pain, amount of bleeding etc.

Discussion

A Randomised control study was done in ASIAN hospital Faridabad for comparing the reduced interval between intake of Misoprostol after Mifepristone for medical abortion.

Home abortion increase autonomy and woman's self care ability. The home environment increased their privacy and the decreased interval decreased the stress of waiting. Schaff et al.[2] reported 98% success rates for both groups and also concluded that interval of 24,48 and 72 hours between the two drugs showed same efficacy these findings are consistent with the present study which showed that there were no significant differences in results between the two groups.[2]

Praveen Kumar et al in a study reported in 2014 that when misoprostol 800µg was given at an interval of 4, 24 and 48 hours after mifepristone complete abortion rates were 96.6%, 100% and 100% respectively in the three groups. They found that there were least side effects with the second group where misoprostol was given 24 hours after mifepristone.[3]

Creinin et al.[4] reported a success rate of 98.2% when they gave misoprostol (800µg) 24 hours after mifepristone to 548 women in their study.[4] In a study Alia A Shuaib et al.[5] reported that the medical management of the first trimester missed miscarriage using intravaginally misoprostol s a highly effective modality. The success rate of 80.7% reported in this study.[5] Their induction abortion time time (in hours) was 20.4 +/- 8.3.

Conflicts of interest

The authors have no conflicts of interest. Informed consent were taken from all patients included in our study.

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