



# A Prospective Study of Efficacy and Safety of Mifepristone and Vaginal Misoprostol in Termination of Pregnancies Up To 63 Days of Gestation.”

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## ABSTRACT:

**Background:** World Health Organization (WHO), estimates that unsafe abortion kill about 70,000 women annually. Each hour, 8 women die of unsafe abortions, thus making it one of the leading cases of maternal mortality(13%). For every women who dies from an unsafe abortion ,many more suffer serious injuries and permanent disabilities. Elective or voluntary Termination of pregnancy in first trimester can be safely done by two methods namely Medical methods using T Mifepristone and T Misoprostol and Surgical method like Manual Vacuum Aspiration (MVA), Electric Vacuum Aspiration (EVA) and Dilation and Evacuation (D&E). **Objective:** To study efficacy of medical management of termination of pregnancy up to 63 days of gestation. **Materials and Methods :** The Present Prospective interventional study was carried out by the department of OBG at P.D.U. Medical And Collage Civil, Rajkot from ..... To ..... A total of 60 pregnant women with pregnancy up to 63 days of gestation opting for voluntary medical termination of pregnancy in P.D.U Government medical college and Civil Hospital, Rajkot who met the inclusion criteria were included in the study. **Results:** In out of 60 cases studied Fifty one(85%) patients belonged to gestational age upto 7 weeks and Nine (15%) belonged to gestational age 7to 9 weeks. As per our study data, 84.4% of the women had bleeding lasting up to 10 days. Only 3.5% patients had bleeding which lasted for more than 15 days. In this study of 60 cases , 55 patients had complete abortion via the medical methods of termination, leading to a success rate of 91.6%. Three patients(5%) had incomplete abortion. As per the above data, side effects like abdominal cramps, nausea, vomiting, and excessive bleeding were well tolerated and didn't require hospitalization. **Conclusion:** it can be concluded that Medical method of termination of pregnancy with Mifepristone 200mg and vaginal Misoprostol 800mcg is a safe and effective method of abortion up to 63 days of gestation

**KEYWORDS:** Abortion, Medical termination of Pregnancy, Pregnancy, Misoprostol, Contraception

## I. INTRODUCTION :

Unwanted pregnancy is a proxy indicator for the unmet need for contraception<sup>1</sup>. In India , Women try variety of remedies to deal with unwanted pregnancies including tablets, decoctions, and visits to unsafe providers.

Worldwide, nearly 40 million abortions take place annually, of which approximately 10-22 million are illegal abortion.<sup>2,3</sup>

World Health Organization (WHO), estimates that unsafe abortion kill about 70,000 women annually. Each hour, 8 women die of unsafe abortions, thus making it one of the leading cases of maternal mortality(13%). For every women who dies from an unsafe abortion ,many more suffer serious injuries and permanent disabilities.<sup>4</sup>

Unsafe abortion is thus a pressing issue. Both of the primary methods for preventing unsafe abortion – like less restrictive abortion laws and greater contraceptive use- face social , religious and political obstacles ,particularly in developing nations , where most unsafe abortion (97%) occur<sup>4</sup>.

An Unsafe abortion is defined as a “As a preventable cause of maternal mortality and morbidity , unsafe abortion must be dealt with as part of MDG on improving maternal health and other international development goals and targets .<sup>5</sup>

The Fifth United Nations sustainable Development Goal recommends a 75% reduction in maternal mortality by 2015. The Millennium development Goal to improve maternal health is unlikely to be achieved without addressing unsafe abortion and associated mortality and morbidity. One way of reducing the number of unsafe abortion is to increase safe abortion practices for termination of unwanted pregnancies. Health system should train and equip health service providers and should take other measures to ensure such abortion is safe and accessible.<sup>6</sup>

Termination of pregnancy by removal or expulsion from the uterus of foetus or embryo prior to viability is called Abortion. An Abortion can either occur spontaneously , commonly called as miscarriage , or induced.<sup>7</sup>



Elective or voluntary Termination of pregnancy in first trimester can be safely done by two methods namely Medical methods using T Mifepristone and T Misoprostol and Surgical method like Manual Vacuum Aspiration (MVA), Electric Vacuum Aspiration (EVA) and Dilation and Evacuation (D&E).<sup>8,9</sup>

Keeping in view the patient's choice ,safety and efficacy of drugs and low complication rates , the present study aims at providing safe termination of pregnancy through medical method in unwanted pregnancies of up to 63 days of gestation .

In India , unsafe abortion practices are an important cause of maternal mortality and morbidity .13% of the pregnancy related deaths are attributed to unsafe abortion.<sup>10</sup>

The study is conducted with a purpose of ensuring SAFE termination of pregnancy in women seeking the same with medical methods i.e. drugs.

Medical managements of abortion is a non surgical termination which does not require special facilities like operation theatre, hospital stay and there by reduces complications associated with same.

Hence it is safer method of choice for women in a developing country like India where medical facilities are at times costly and limited .

If this study proves to be efficacious it can be recommended as a policy in the Government institute .This helps not only to improve health care services to a women but also prevents complications of an unsafe abortion.

**Objective :**

To study efficacy of medical management of termination of pregnancy up to 63 days of gestation.

**Drug Protocol**

Visit	Day	Drugs Used
First	Day One	Drugs used • 200 mg Mifepristone oral; Anti D 300 mcg, if Rh negative.
Second	Three	800 mcg Misoprostol (4 tablets of 200 mcg each) vaginal. • Analgesics if pain. (Ibuprofen); • Antiemetic if vomiting occur. • Offer contraception
Third	Seventh	Confirm and ensure completion of abortion; • Offer contraception, if not already don

The detailed Demographic profile, Menstrual History and obstetric history along with contraceptive history was collected and counselling was given about the procedure , duration of

**Materials and Methods :**

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A total of 60 pregnant women with pregnancy up to 63 days of gestation opting for voluntary medical termination of pregnancy in P.D.U Government medical college and Civil Hospital, Rajkot who met the inclusion criteria were included in the study

**INCLUSION CRITERIA:**

1. Female seeking first trimester MTP with gestational age</-63days (9weeks).
2. Opting and giving consent for the study , willing to take 3 visit, residing in Rajkot.
3. Age: 18-40 years old.
- 4.Marital status: married
5. willing to underwent surgical method of termination.

**EXCLUSION CRITERIA:**

1. Patients with previous scarred uterus-like previous one or more caesarean section past history of myomectomy; or past history of hysterotomy.
  2. Patients having absolute contradictions for prostaglandins- history of bronchial asthma /glaucoma /hypersensitivity to drug/epilepsy.
- In the present study we used Tablet Mifepristone200mcg, 4-tablets (800mcg) vaginally for the termination of pregnancy.

**MMA PROTOCOL AND PROCESS**

The steps of the procedure are divided below on the basis of the day of the visit. Typically it requires three visits (Day 1, 3 and 7) when the MMA drugs are used by the woman and to confirm the completion of the abortion process.

treatment and mental counselling was given by the trained professional.

Instructions was given to the women

- Explain what to expect after taking tablet Mifepristone



- Report to the centre /provider in case of excessive bleeding/acute abdominal pain
- Record any experience of side effects on the MMA follow-up card

**Second Visit/Day 3/Day of Misoprostol Administration**

- 1) Note any history of bleeding/pain or any other side effects after tablet Mifepristone
- 2) Administer Misoprostol
- 3) Medication for pain relief
- 4) Perform pelvic examination before the woman leaves the clinic and if cervical os is open and products are partially expelled, remove them digitally. She should be observed for another few hours or till the expulsion of the POC is complete
- 5) In case the woman does not abort at the health centre or takes Misoprostol at home, inform her about Reporting back to the center/service provider in case of excessive bleeding/acute abdominal pain
- 6)She must return for Misoprostol administration after two days
  - Side effects such as nausea, vomiting, diarrhoea (usually mild), headache, fever, dizziness
  - Returning for follow-up on the 7<sup>th</sup> day

**Third Visit/Day 7/Follow-up Visit**

- 1) Note relevant history/check MMA follow-up card
- 2) Carry out pelvic examination to ensure completion of abortion process/continue pregnancy
- 3) Reiterate contraceptive counselling and services
- 4) Advise USG if
  - complete expulsion of POC not confirmed
  - continuation of pregnancy (suspected)
  - bleeding continues
- 5) Ask the woman to report back if there are no periods within six weeks

Statistical analysis:

Data was entered into Microsoft excel data sheet and was analyzed using SPSS 22 version software. Categorical data was represented in the form of Frequencies and Percentage .Graphical representation of data: MS Excel and MS word was used to obtain various types of graphs such as bar diagram, Pie diagram, line diagram and ROC plots. p value(Probability that the result is true) of <0.05 was considered as statistically significant after assuming all the rules of statistical tests

**II. RESULTS :**

A total of 60 cases of first trimester medical termination of pregnancy were selected and followed up .

**Table 1 : Social Profile of the study subjects**

		NO. CASES (N=60)	PERCENTAGE (%)
Age Group (Years)	Below 20	01	1.6%
	20-29	37	61.66%
	More Than 30	22	36.66%
Parity	Primi para	2	3%
	Second para	35	58%
	Third para	10	17%
	Fourth para	4	7%
	More than 4	9	15%
Education	Illiterate	12	21%
	Primary	21	35%
	Secondary	14	28.3%
	Graduate	9	15%
	Post graduate	4	6.7%



Socio Economic Status	Upper	3	5%
	Middle	31	51.60%
	Lower	26	43.30%

In our study maximum patient belonged to 20-29 years(61.66%) which belonged to the peak of reproductive age, while 36.66% case were more than 30 years, medical method of abortion is more common in reproductive age group. In this study According to parity Maximum number of patient were second para (58%). The minimum number belonged to primipara group(3%). There were 2 cases Primi para(3%), 10 cases Third Para(17%), 4 cases fourth para (7%) and 9 cases more than 4 parity (15%).

As per our study, majority(48) of the patients were literate (80%), while only 12% were illiterate. Most of the women in my study who were literate had to undergo medical termination of pregnancy, due to the reason of unintended pregnancy.

As per the per capita income, 51.60% of the cases belonged to middle class while 43.30% belonged to lower class. In our case study, medical methods were adopted for termination of pregnancy by the middle class patients due to the increasing family size which in turn increased the financial burden on them.

**Table 2 : Distribution Of Patients According To The Gestational Age**

PERIOD OF GESTATION	NO. OF CASES (N=60)	PERCENTAGE (%)
Upto 7 weeks	51	85%
7to 9weeks	9	15%

In out of 60 cases studied Fifty one(85%) patients belonged to gestational age upto 7 weeks and Nine (15%) belonged to gestational age 7to 9 weeks.

**Table 3 : Distribution Of Cases According To Duration Of Bleeding**

No of days of bleeding	No. of cases (n=60)	Percentage (%)
Up to 5 days	05	8.6%
6 to 10 days	49	84.4%
11 to 15 days	02	3.5%
More than 15 days	02	3.5%

As per our study data, 84.4% of the women had bleeding lasting up to 10 days. Only 3.5% patients had bleeding which lasted for more than 15 days. Among the cases in whom bleeding lasted for more than 10 days all had gestational age of 7-9 weeks.

**Table 4: Efficacy Of The Drug As Outcome**

Outcome	No. of cases (n=60)	Percentage (%)
Complete Abortion	55	91.6%
Incomplete Abortion	03	5%
Failure	01	1.6%
Lost to Follow up	01	1.6%

In this study of 60 cases, 55 patients had complete abortion via the medical methods of termination, leading to a success rate of 91.6%. Three patients(5%) had incomplete abortion, A patient had failure of medical



termination leading to continuation of pregnancy in that case and one patient amongst my study was loss to follow up.

**Table 5: Side Effects Of The Drug Combination**

Side effects	No. of cases (n=59)	Percentage (%)
Abdominal cramps	12	20%
Nausea	09	15%
Vomiting	02	3.3%
Excessive bleeding	01	1.66%
None	35	58%

As per the above data, side effects like abdominal cramps, nausea, vomiting, and excessive bleeding were well tolerated and didn't require hospitalization.

**Table 6 : Need For Additional Drug**

Drugs	No of cases (n=59)	Percentage (%)
Tab Misoprostol 200mcg	03	5%
Tab Doxylamine succinate	06	10%
Tab Dicyclomine	02	3.3%
Tab Ibuprofen /Paracetamol	02	3.3%

According to our study three patients who had gestational age more than 7 weeks with bleeding on follow up were given tablet misoprostol. Six tablet doxylamine were given for nausea and vomiting, Two Tablet dicyclomine for abdominal cramps and non steroidal anti-inflammatory drugs each. Thus, it is a safe method of termination of pregnancy. The above data suggests that none of the patients developed heavy bleeding, sepsis or fever with medical methods.

### III. DISCUSSION :

Beginning in the second half of twentieth century, abortion was legalized in a great number of countries. Abortion, when induced in developed world in accordance with local law, is among the safest procedures in medicine.<sup>8,9</sup>

However, unsafe abortions (those performed by persons without proper training or outside of a medical environment) result in approximately 70 thousand maternal deaths and 5 million disabilities per year globally.<sup>5</sup> An estimated 44 million abortions are performed globally each year, and slightly under half of those performed unsafely.<sup>6</sup>

The incidence of abortion has stabilized in recent years, as access to family planning education and contraceptive services increased. 40% of the

world's women have access to induced abortions (within gestational limits).<sup>6</sup>

Approximately 205 million pregnancies occur each year world wide. Over a third are unintended and about a fifth end in induced abortion. Most abortions result from unintended pregnancies.<sup>11</sup>

**Drug Controller General of India** approved the use of Mifepristone (in April 2002) and Misoprostol (in December 2006) for termination of pregnancy up to 49 days of gestation period. In December 2008, Mifepristone + Misoprostol (1 tablet of mifepristone 200mg and 4 tablets of misoprostol 200mcg each) Combi pack was approved by the **Central Drugs Standard Control Organization, Directorate General of Health Services** for the medical termination of intrauterine pregnancy (MTP) for up to 63 days gestation.<sup>12</sup>

Our trial matches with the study of **Schaff EA et al**<sup>13</sup>. After receiving mifepristone, subject self administered vaginal misoprostol 800 mcg at home 2 days later. Gastrointestinal side effects were common, mild, and brief. Hence they concluded that, misoprostol administered by vaginally was found to be safe, highly effective, and acceptable to women.

In our study all cases had 24 hours available emergency contact number of the



Principal Investigator for emergency consultation and follow up. Cleland K et al<sup>14</sup> also successfully used telephone calls in their study over 139 patients for follow up in medical termination of pregnancy.

In the present study maximum number of patients belonged to the age group of 20-29 years (61.66%), which turned out to be similar with the Kumar Sonal et al<sup>9</sup> and Das Vinita et al<sup>15</sup>. The maximum number of patients opting for medical termination of pregnancy were second para patients, which again shared similarity with other studies- Kumar Sonal et al<sup>9</sup> and Das vinita et al<sup>15</sup>.

The outcome of the abortion in our study was found to be having a similar efficacy rates and outcomes like that of other studies like Kumar Sonal et al<sup>9</sup> having efficacy of 95%, Grossman D et al<sup>16</sup> it was 93%, Das Vinita et al<sup>15</sup> it was 94.7% and Jain M et al<sup>11</sup> it was 95.7% which was higher than our study findings of 91.6% which was comparable. Similarly in other studies done by Herten Von H et al<sup>17</sup> it 89.2% and Winikoff B et al<sup>18</sup> it was 91.4%. which was lesser than our study. Also other studies showed that efficacy of these drugs are very high if used for gestational age upto 63 days.

The side effects seen in our study was found to be similar and comparable to the study findings of Cleland K et al<sup>14</sup> where abdominal cramps was the common side effects and nausea was the common side effect in the study done by Buss L et al<sup>19</sup>.

Method is found to be very safe in regard to the non invasive nature, high success rate and side effects experienced, which were well tolerated by the subjects. The method is highly acceptable for the women as they wanted to avoid invasive procedure and preferred to adopt same method if needed in future. Patient participation, motivation, compliance, regular follow up visits, ability to record and report complications are the pillars on which the success of medical method depends.

#### IV. CONCLUSION :

Most abortion related deaths are attributable to illegal abortions. Hence safe abortion methods should be adopted to cut down these deaths. Medical method of termination is therefore preferred because it is both safe and efficacious. It can be successfully used for pregnancies up to 63 days of gestation. However chances of incomplete abortion increases as the duration of pregnancy increases.

Hence it can be concluded that Medical method of termination of pregnancy with Mifepitone 200mg and vaginal Misoprostol

800mcg is a safe and effective method of abortion up to 63 days of gestation

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