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Reproductive Health Matters 2005;13(26):20–24
0968-8080/05 $ – see front matter
PII: S0968-8080(05)26212-2

REPRODUCTIVE HEALTH matters
www.rhmjournal.org.uk

FEATURES

Medical Abortion: A Fact Sheet

The following information was prepared for this RHM journal issue as background to the papers.

MEDICAL abortion is the use of pills to cause a miscarriage. Historically, many different drugs and concoctions have been used to try to cause a miscarriage; many do not work very well or are unsafe. Now, thanks to medical research in the past two decades, there are safe and effective drugs available for this purpose. As word of the existence of this method spreads, women all over the world are asking for it, including in remote parts of developing countries.

The recommended combination of drugs for medical abortion is mifepristone followed by misoprostol.[1,2] More than 22 million women in China, one million in France (Danielle Hassoun, personal communication, August 2005) and about three million in the rest of the world have used this combination of drugs to terminate a pregnancy as of 2005, and have found it safe and effective.[3]

Mifepristone is an anti-progestogen drug that blocks the action of progesterone in the body. It causes the gestational sac in early pregnancy, or the embryo or fetus at subsequent stages, to become detached from the uterine lining, and it also softens and opens the cervix. Mifepristone became available in France in 1988. It is currently approved in 33 countries and the number is growing steadily.* Mifepristone is commonly available under the brand names Mifiprex, Mifegyne or Mifegest, and under several other brand names in India and China.

Misoprostol is a prostaglandin that causes contractions of the uterus, which result in the products of pregnancy† being expelled. The result is very much like a spontaneous abortion or miscarriage. Misoprostol was originally registered for treating gastric ulcers. It can be found in most countries, either through health care providers or over the counter, with the exception of a number of countries in sub-Saharan Africa and Central Asia and one or two other Asian countries. The brand names include Cytotec, Oxaprost or Cytoprost.

Where mifepristone is not available or affordable, misoprostol is being used alone to cause an abortion, but to be as effective as mifepristone–misoprostol combined, it has to be taken at higher and repeated doses, which is more painful and can cause more gastro-intestinal side effects.[4]

In Canada and a few Latin American countries, and in the United States before mifepristone was approved, the drug methotrexate has been used as a substitute for mifepristone followed by misoprostol. Methotrexate is used for treating cancer, rheumatoid arthritis, ectopic pregnancy and other conditions. However, methotrexate is not recommended for inducing abortion, because it increases the risk of fetal malformation in a continuing pregnancy.[5,6]

In most Latin American, Caribbean and Asian countries, and increasingly in Africa, because of legal restrictions on abortion, misoprostol is being self-administered by women to cause a miscarriage, as an alternative to far less safe methods. Often in these settings, neither women, pharmacists nor physicians have enough information on the safest and most effective doses of misoprostol, or what to do if the drug does not cause a complete abortion.

*Countries where mifepristone is approved include France, Sweden, United Kingdom, Germany, Denmark, Norway, Finland, Netherlands, Belgium, Luxemburg, Spain, Switzerland, Greece, Austria, Estonia, Latvia, Russia, Ukraine, Moldova, Georgia, Azerbaijan, Uzbekistan, United States, New Zealand, Guyana, Vietnam, India, China, Tunisia and South Africa. See: <www.gynuity.org>.

†The gestational sac in early pregnancy, or the embryo or fetus and placental tissue as pregnancy develops.

Whether or not abortion is legally available, it is always safest to use medical abortion drugs under the guidance of a health care provider. For women who do not have this option, it is crucial to seek help if something seems to be going wrong or if the abortion seems not to be complete.

However, women should never attempt second trimester abortion on their own with any drug or device, as the risk of problems, especially with bleeding, increases with the number of weeks of pregnancy.

Mifepristone and misoprostol: dosages and regimens at different stages of pregnancy

The combination of mifepristone and misoprostol can be used from the time when a woman first misses her period up to 24 weeks of pregnancy, counting from the first day of the last menstrual period (LMP).

Women take mifepristone by mouth and misoprostol is inserted vaginally or taken by mouth. Vaginal insertion should be deep into the vagina and can be done by a provider (nurse or midwife as well as a physician), or up to nine weeks of pregnancy by the woman herself or her partner. The abortion, as women say, then happens naturally.

With medical abortion, it is important to know how many weeks pregnant a woman is because, although the dose of mifepristone stays the same, the dosage of misoprostol and the number of doses change at different stages of pregnancy. Too small a dose can be less effective, while too large a dose can be risky. With the combination of mifepristone and misoprostol, the regimens recommended by the Royal College of Obstetricians and Gynaecologists (RCOG) National Clinical Guidelines 2004 change at 4–9 weeks, 9–13 weeks and 13–24 weeks.[2]

One of the most confusing aspects of medical abortion is that so many different regimens have been tried and are still being used, more or less

Box 1. Dosage and regimens for medical abortion from 4–24 weeks of pregnancy

- **Between 4 and 9 weeks of pregnancy:**

200mg mifepristone orally followed 36–48 hours later[1] by 800mcg misoprostol vaginally. The misoprostol may be administered by a clinician or self-administered by the woman at home.[2] At 7–9 weeks, if abortion has not occurred four hours after administration of misoprostol, a second dose of misoprostol 400mcg may be administered vaginally or orally (depending upon preference and amount of bleeding).[2,7]

***An alternative regimen for 4–7 weeks of pregnancy*:** 200mg mifepristone followed 36–48 hours later by 400mcg misoprostol orally.[8*]

***Misoprostol alone*:** 800mcg vaginally, followed 3–6 hours later by a second dose of 800mcg misoprostol inserted vaginally. If abortion has not taken place after the second dose, a third dose of 800mcg can be inserted vaginally 3–6 hours later.[9†]

- **Between 9 and 13 weeks of pregnancy:**

200mg mifepristone orally followed 36–48 hours later by 800mcg misoprostol vaginally. A maximum of four further doses of 400mcg misoprostol each may be administered at three-hourly intervals, vaginally or orally (depending on the amount of bleeding).[2] The woman is kept under observation in the clinic until she aborts.

- **Between 13 and 24 weeks of pregnancy:**

200mg mifepristone orally, followed 36–48 hours later by 800mcg misoprostol vaginally, then 400mcg misoprostol orally, three-hourly, to a maximum of four oral doses.[2] The woman is kept under observation in the clinic until she aborts.

In all cases, a follow-up visit should be carried out two weeks after misoprostol use to check that the abortion is complete and there are no complications.

Notes

*This regimen is approved in several countries and is also listed in the WHO Safe Abortion Guidance. However, 800mcg vaginal misoprostol after mifepristone causes a higher rate of complete abortion with fewer gastro-intestinal side effects up to nine weeks of pregnancy. On the other hand, some women may prefer to take misoprostol orally, knowing the complete abortion rate may be slightly lower.

†A meeting of experts convened in June 2003 proposed a misoprostol-alone regimen for up to nine weeks of pregnancy of 800mcg misoprostol, repeated after 24 hours.[10] The above regimen is proposed instead because in a study comparing the two regimens (2005), women said that waiting for 24 hours to insert the repeat dose was too long and caused too much anxiety.[9]

successfully. In addition, due to lack of information in many countries, exacerbated by restrictive abortion laws, there has been a lot of experimentation, both on the part of clinicians and by women self-administering misoprostol at home.

The RCOG-recommended doses and regimens for combined mifepristone–misoprostol in Box 1 are based on a review of the literature that took into account efficacy, adverse effects and cost.[2*] The regimen for misoprostol alone for 4–9 weeks of pregnancy is based on as yet unpublished data at this writing.

Mifepristone tablets are 200mg each. Misoprostol tablets are 200mcg each.

Contraindications

- Confirmed or suspected ectopic pregnancy
- Allergy to mifepristone or misoprostol
- Bleeding disorders
- Severe asthma not controlled by therapy
- Chronic adrenal failure
- Acute porphyria
- More than one uterine scar (for abortions at 13–20 weeks)
- Long-term use of corticosteroids.[11]

Conditions that are <u>not</u> contraindications[4,8,11]

- If a woman has an IUD in place in the uterus, this should be removed prior to use of medical abortion.
- Haemoglobin levels fall for several weeks after medical abortion. Women with mild to moderate anaemia (haemoglobin levels between 9 and 12 gm/dl) can use medical abortion safely, but iron pills might be advisable.
- If a woman has a sexually transmitted disease or reproductive tract infection, it should be treated immediately, as some infections can cause pelvic inflammatory disease and infertility if untreated. It is not necessary to wait for such treatment to be completed before having a medical abortion.
- There is some evidence that mifepristone and misoprostol are excreted into breastmilk. The available evidence suggests that the amounts of mifepristone ingested by the infant are unlikely to cause harm. Any effects of misoprostol on infants are not known. As misoprostol levels decline rapidly, it has been recommended that misoprostol be taken immediately after a feed and the next feed given after four hours in case of oral administration and somewhat later after vaginal administration.[12,13]

Intended effects: termination of pregnancy

- **Uterine contractions**
  These are like menstrual cramps, which are heavier and more painful than with menstruation, but of short duration, generally 2–3 hours. They mostly start after misoprostol administration. Analgesics should be taken or a stronger painkiller if required.
- **Loss of products of pregnancy and uterine blood**
  Whether an abortion is surgical or medical, the amount of uterine blood that must come out is the same. However, women experience this as a difference because with the surgical method most of the blood and the products of pregnancy are suctioned out, whereas medical abortion is like a very heavy menstrual period for 1–4 hours, and the products are expelled naturally, with the bleeding tapering off afterwards. Light blood loss or spotting then tends to last 9–13 days with medical abortion and may not be greater than with surgical abortion,[8] but it can last longer, up to several weeks.

The amount of blood loss and time it takes for the products of pregnancy to be expelled depend on the length of pregnancy and the regimen used. Up to nine weeks, most abortions (60–70%) using mifepristone–misoprostol are complete within four hours of taking the misoprostol.[9] After nine weeks of pregnancy, the number of hours to expulsion of the products of pregnancy increases with length of pregnancy.[4,14] The need for surgical evacuation to complete the abortion also increases. In one study, the median induction-to-abortion time was less than six hours for parous women and eight hours for nulliparous women, and more than 70% of women went home the same day.[15]

*The RCOG's recommendations stop at 24 weeks of pregnancy but medical abortion drugs are being studied and used for obstetric purposes, such as induction of labour, later in pregnancy.

Possible short-term side effects, usually in the several hours after misoprostol use

- Nausea
- Vomiting, which may affect the efficacy of the drugs (or any other medication a woman is taking) if it occurs within two hours of taking the medication(s).
- Diarrhoea
- Weakness
- Headache
- Chills and fever
- Dizziness

Success rates and method failure

If a woman gets no or only slight bleeding or continues to experience signs of pregnancy, it is likely that the method has failed. There is little point in taking more and more misoprostol beyond the recommended doses, as it does not tend to work and may be risky.

With medical abortion, very early abortion should become more common, as medical abortion works almost all the time at the time when a woman first misses her period. In fact, up to nine weeks of pregnancy, pregnancy continues only in about one per 100 women* and in about 3–5 women, abortion is incomplete. From 9–13 weeks of pregnancy, some 96 out of 100 medical abortions using the RCOG regimen were complete in one large study, without the need for surgical intervention.[14] From 13–20 weeks of pregnancy, the rates of ongoing pregnancy and incomplete abortion get higher; about five women per 100 may have ongoing pregnancies.[4]

Up to nine weeks of pregnancy, misoprostol alone is about 85–90% effective in causing a complete abortion, according to provider reports, but the efficacy decreases as pregnancy advances.[8]

Surgical evacuation of the uterus with vacuum aspiration or D&C is required in all cases of ongoing pregnancy and often as a back-up for incomplete abortion.

Complications

- There is a risk of heavy bleeding, especially if the abortion is incomplete. Some health providers try to treat heavy bleeding with a drug called Methergin. Surgical evacuation of the uterus will stop the bleeding; about one in 100 women require this.
- Excessive bleeding is defined as soaking two or more sanitary pads per hour for two or more hours. It requires immediate surgical evacuation. About one in 1,000 women experiences bleeding that is so heavy that they need blood transfusion. Such heavy bleeding usually occurs 1–3 weeks after taking the tablets (apart from the expected bleeding after administration of misoprostol).
- If a woman develops fever above 100.4°F that lasts more than four hours, or if fever starts 6–8 hours after she has taken the misoprostol, infection may have developed and she needs medical treatment. However, based on a review of 65 studies involving 46,421 women using five different regimens, infection risk after medical abortion was well under 1%.[16]
- Deaths from complications of sepsis following medical abortion are extremely rare, about one per 100,000 women in the US.[17†] In France, with one million early medical abortions with mifepristone and misoprostol, there have been no deaths.

After the abortion

- Medical abortion will not affect a woman's ability to become pregnant or have a child in future.
- A woman can become pregnant again within three weeks of having a medical abortion, because most women resume normal ovulation within the first two to three weeks after the abortion is complete. Contraception is advised and can be started immediately after medical abortion, except for the IUD, which can be inserted at the follow-up visit if the uterus is empty or after the next menstruation.

*With oral misoprostol up to seven weeks of pregnancy there are about 1-3 continuing pregnancies.

†Four recent deaths reported in the United States following medical abortion but not attributed to the drugs were associated with anaerobic bacterial infection with *Clostridium sordellii*, that can in very rare cases produce toxins that are rapidly fatal and require antibiotics which include coverage of anaerobic bacteria. This is known to occur rarely in pregnancy as well.[17]

- Normal menstruation starts again within about 4–6 weeks after having medical abortion.
- A woman should not engage in penetrative vaginal sex or insert anything into the vagina for about a week after medical abortion, or until she feels ready.

Medical abortion has no known, long-term negative effects on women's physical or mental health. Rather, it may contribute positively to a woman's well-being by removing the stress of unwanted pregnancy.

Acknowledgements

This fact sheet was prepared by Marge Berer, RHM editor, who takes full responsibility for any errors. The text was reviewed and re-reviewed by Helena von Hertzen and Metin Gülmezoglu, Special Programme of Research Development and Research Training in Human Reproduction at WHO, Geneva; Kristina Gemzell-Danielsson, Karolinska Hospital, Stockholm; and Danielle Hassoun, Director, Centre for Training in Reproductive Health Technologies, Paris.

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