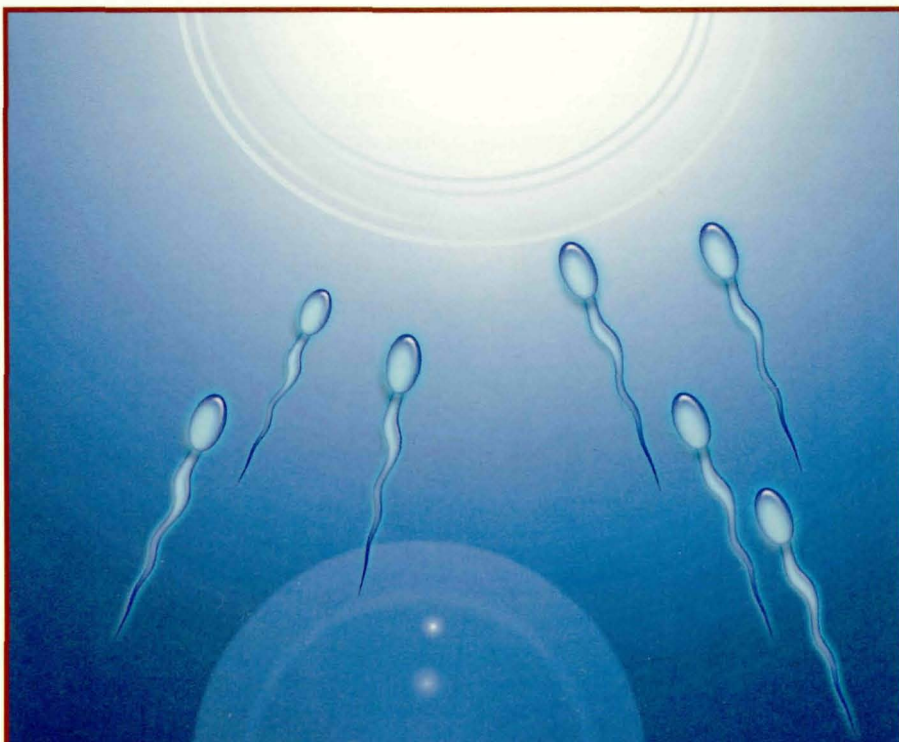


1 Point

Emergency Contraception

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Emergency contraception is used to reduce the incidence of unplanned pregnancies and abortions.

DEFINITION AND INDICATIONS

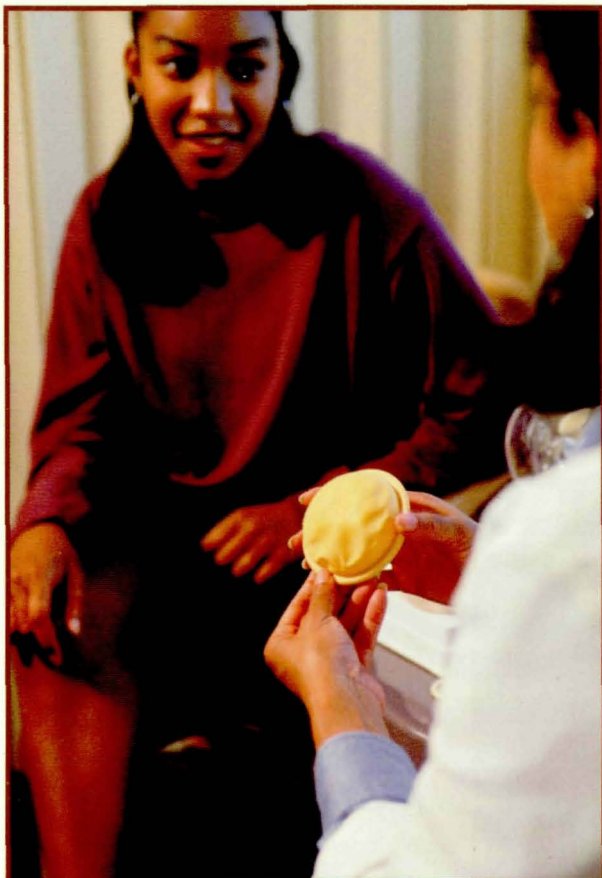
Emergency contraception is contraception administered to a woman after an unprotected intercourse. It is used to reduce the incidence of unplanned pregnancies and abortions resulting from unexpected intercourse, a failure of barrier methods (e.g. the slipping or breakage of condoms) or a rape.

EFFICACY

As not all women who have an unprotected intercourse will conceive, the proportion who do not conceive after the use of emergency contraception is not a good indicator of the percentage of pregnancies prevented. In many recent studies on the use of emergency contraception, the efficacy of the method used is estimated by comparing the number of pregnancies expected without treatment with the number of observed pregnancies with treatment. The number of pregnancies expected is calculated from the probabilities of pregnancy on each cycle day derived from previous prospective studies involving women who were trying to conceive.¹ However, these estimates are based on a number of assumptions: (1) ovulation is regular; (2) the last menstrual period (LMP) is accurate; and (3) women using emergency contraception have the same fertility as that

Emergency contraception is contraception provided to a woman after an unprotected intercourse. The most commonly used methods include: (1) Yuzpe regimen, which consists of two doses of combined oral contraceptive pills given at a 12-hour interval; (2) levonorgestrel; (3) mifepristone; and (4) insertion of a copper intrauterine contraceptive device (IUCD). The Yuzpe regimen is associated with a high incidence of nausea and vomiting. Levonorgestrel and mifepristone are more effective and better tolerated than the Yuzpe regimen. A single dose of 1.5 mg of

levonorgestrel has been shown to be as effective as two doses of 0.75 mg levonorgestrel given at a 12-hour interval, or 10 mg of mifepristone. Since levonorgestrel is much more widely available than mifepristone, it is currently the method of choice in many countries. The insertion of a copper IUCD is a very effective method of emergency contraception, preventing over 90% of pregnancies. It can also be left in situ for continued contraception. However, IUCD is associated with an increased risk of pelvic inflammatory disease (PID) especially in women with risk factors.



Prescribing contraceptive drugs provides a good opportunity to counsel the woman on future contraception.

of women who are trying to conceive. Recent studies have cast doubt on the accuracy of these estimates.^{2,3}

METHODS

Yuzpe Regimen

This regimen involves the administration of two doses of combined oral contraceptive pills (each dose containing 100 µg of ethinylestradiol and 1 mg norgestrel) at a 12-hour interval within 72 hours of the intercourse.⁴ The reported failure rate in the literature ranges from 0.2% to 7.4%. It is estimated

that the Yuzpe regimen can prevent over 74% of pregnancies.¹ The most common side effects of the regimen are nausea and vomiting, with an incidence of 50% and 15%, respectively. Serious side effects or complications have not been reported with this regimen. Therefore, according to the eligibility criteria of the World Health Organization (WHO),⁵ confirmed pregnancy is the only contraindication to the use of emergency contraception because once a pregnancy is established, this regimen is not effective.

There is no evidence of an increased risk of fetal anomalies among women who conceived while taking this regimen.⁶ There is some suggestive evidence that the Yuzpe regimen can be extended to treat women requesting emergency contraception 72 to 120 hours after an unprotected intercourse.⁷ A recent study also showed that the combination of norethindrone and ethinylestradiol might be as effective as the standard Yuzpe regimen,⁸ and can be offered if the standard Yuzpe regimen is not available.

Mifepristone
Mifepristone is a progesterone antagonist at the receptor level and has been marketed in

a number of countries for medical abortion. Initially, a dose of 600 mg was used for emergency contraception.^{9,10} It is more effective than the Yuzpe regimen and has a significantly lower incidence of nausea and vomiting, but a higher incidence of delayed return of menstruation. It was later shown that the efficacy of 10 mg is similar to that of 600 mg, with a lower incidence of menstrual delay.¹¹ It was estimated that these regimens could prevent 84% to 92% of pregnancies.^{11,12} While 10 mg should be the preferred dose, 10 mg tablets of mifepristone are not commercially available except in China. Moreover, mifepristone is well known as an abortifacient drug. This makes it difficult for the drug to be registered in countries where abortion is illegal even though 10 mg of mifepristone is not abortifacient.

Levonorgestrel

Levonorgestrel is an orally active progestogen. Ho and Kwan¹³ first demonstrated the efficacy of levonorgestrel in comparison with the Yuzpe regimen; levonorgestrel (two doses of 0.75 mg taken at a 12-hour interval) was used within 48 hours of an unprotected act of intercourse. Compared with the Yuzpe regimen, levonorgestrel has a slightly lower failure rate and a significantly lower incidence of nausea and vomiting. A subsequent WHO multicentre study compared the efficacy and side effects of the levonorgestrel regimen with those of the Yuzpe regimen in emergency contraception within 72 hours of coitus.¹⁴ Both the pregnancy rate and the incidence of side effects in the levonorgestrel group were significantly lower than those in the Yuzpe regimen

group. It was estimated that levonorgestrel could prevent 85% of pregnancies while the Yuzpe regimen could prevent 57% of pregnancies.

A more recent multicentre study by WHO¹⁵ compared three regimens of emergency contraception within 120 hours of coitus: (1) mifepristone 10 mg; (2) two doses of levonorgestrel 0.75 mg at an interval of 12 hours; and (3) a single dose of levonorgestrel 1.5 mg. The pregnancy rate in the three groups was similar: 1.5% in the mifepristone group, 1.8% in the two-dose levonorgestrel group and 1.5% in the single-dose levonorgestrel group. The incidence of side effects was similar in all three groups. Significantly more women in the mifepristone group had delayed menses of more than 7 days (9%, vs. 5% in the other two groups). Even though the pregnancy rate was higher when the drugs were given between 72 to 120 hours than when given earlier, late administration of these drugs still prevented 58% to 63% of pregnancies. This study also showed that women who had further acts of intercourse had higher rates of pregnancy. Since a single dose of levonorgestrel 1.5 mg is more convenient for the women and the efficacy is similar to a double-dose regimen, it could be the preferred regimen.

Intrauterine Contraceptive Device

The insertion of a copper IUCD is probably the most effective method of emergency contraception. It is effective up to 120 hours after the unprotected intercourse. A recent study in China showed that the pregnancy rate was only 0.2% with the insertion of an IUCD within 120 hours after an unprotected

intercourse.¹⁶ The estimated percentage of pregnancies prevented was 98.1% in parous women and 92.4% in nulliparous women. Another advantage of IUCD is that it can be left in situ for continued contraception.

There is a need to educate women on the risk of pregnancy and the need for emergency contraception after an unprotected intercourse.

RISKS AND CONTRAINDICATIONS

On the whole, hormonal methods of emergency contraception are very safe. No serious complications have been reported. In the medical eligibility criteria published by WHO,⁵ a history of severe cardiovascular complications, angina pectoris, migraine and severe liver disease are classified as Category 2, that is, the advantages of using the method generally outweigh the theoretical or proven risks and the method can generally be used. The only situation where either the Yuzpe regimen or levonorgestrel should not be used is confirmed pregnancy. This is because these methods are no longer effective as they are not abortifacient. However, there is no evidence that these drugs are teratogenic.

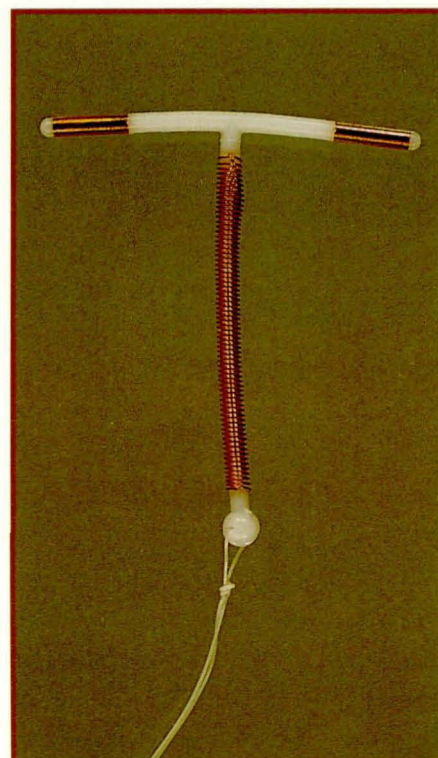
The use of an IUCD may be associated with complications including pain, bleeding

or PID. Therefore, they should not be used in women with risk factors for PID. Moreover, it may be more difficult to insert an IUCD in young nulliparous women.

MECHANISM OF ACTION

Hormonal Methods

The exact mechanisms of action of the various methods are not entirely clear. However, current evidence suggests that ovulatory dysfunction may account for the contraceptive action of hormonal methods in a large proportion of cases.¹⁷ The effects on the endometrium appear to be minimal and probably not sufficient to prevent implantation.



One of the advantages of an IUCD is that it can be left in situ for continued contraception.

Practice points

- Both levonorgestrel and mifepristone are more effective and better tolerated than the Yuzpe regimen.
- Levonorgestrel is the drug of choice for emergency contraception. It can be given as a single dose (1.5 mg) within 120 hours of an unprotected intercourse.
- Emergency contraceptive pills are more effective when given early after the intercourse. Therefore, improving access to emergency contraception is important.
- After the administration of emergency contraceptive pills, women should be advised to abstain from further acts of intercourse in the same cycle.
- The insertion of an IUCD is probably the most effective method of emergency contraception but it should be restricted to women without contraindications to IUCD.

Intrauterine Contraceptive Device

The mechanism of action of IUCD in preventing pregnancies in emergency contraception is not known. It was previously thought that IUCDs act by causing a foreign body reaction in the uterus and making the endometrium unsuitable for implantation. Recent studies suggest that IUCDs may primarily exert their contraceptive effects by altering sperm migration and by inhibiting fertilization.^{18,19}

CHOICE OF METHOD AND ADMINISTRATION

Mifepristone is still not available in many countries. In countries where it is available, it is marketed mainly for medical abortion and not for emergency contraception. It is an expensive drug; therefore, it is unlikely to be widely used for emergency contraception. Where levonorgestrel is available, it may be the drug of choice as it is more effective and better tolerated than the Yuzpe regimen. Since a single dose of levonorgestrel 1.5 mg is as effective as two doses of 0.75 mg with

a similar incidence of side effects, the single dose is probably the preferred regimen.

Many effective methods of emergency contraception are now available and levonorgestrel is probably the drug of choice in many countries.

In some countries, the Yuzpe regimen and levonorgestrel are available over-the-counter without prescription since both methods are very safe. In countries where prescription is required, it is not necessary to perform a detailed assessment before the prescription is made, but it is worthwhile to exclude the possibility of pregnancy by taking the menstrual history (LMP), performing a pelvic examination and/or a pregnancy test. It is also a good opportunity to counsel the woman on future contra-

ception if there is a need. The woman should also be advised to refrain from further acts of unprotected intercourse in the same cycle, and to return for follow-up for exclusion of pregnancy if she misses her period.

For women without contraindications for IUCD, insertion of a copper IUCD may be considered especially if they want to use it for continued contraception.

BARRIERS TO THE USE OF EMERGENCY CONTRACEPTION

In the past decade, there has been an increasing interest in and publicity of emergency contraception. Unfortunately, the knowledge concerning emergency contraception is still limited in some countries. Moreover, some women underestimate the risk of pregnancy and may not opt for emergency contraception despite having an unprotected intercourse.²⁰ There is a need to educate women on the risk of pregnancy and the need for emergency contraception after an unprotected intercourse.

One of the ways to improve access to emergency contraception is to provide women with a supply of emergency contraception drugs to be kept at home.^{21,22} Women tend to use emergency contraception more often if they are given a supply of drugs to be kept at home, and there is no evidence this will affect the regular use of contraception or increase the incidence of unprotected intercourse. The other option is to allow sales over-the-counter as these drugs are very safe and no serious complications have been reported with their use.

CONCLUSION

Many effective methods of emergency contraception are now available and levonorgestrel is probably the drug

of choice in many countries. The insertion of an IUCD is also a very effective method but it is more suitable for women without risk factors for PID.

About the Authors

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